AGENDA – City Council Meeting

Mayor Chris Carn
Council Member Audrey Barton
Council Member Edon Davenport
Council Member Robert Taylor
Council Member Lance Wadman
Council Member Emma Wilson

CITY OF SARATOGA SPRINGS
Tuesday, February 3, 2026, 6:00 pm
City of Saratoga Springs Council Chambers
319 South Saratoga Road, Saratoga Springs, UT 84045

POLICY MEETING

CALL TO ORDER

1. Roll Call.
2. Moment of Reflection.
3. Pledge of Allegiance.
4. Public Input – *This time has been set aside for the public to express ideas, concerns, and comments for subject matter not listed as public hearing on the agenda. Limit of 3 minutes per speaker, unused time may not be given to another. Time for Public Input is limited to no more than 15 minutes total.*

REPORTS

1. Mayor.
2. City Council.
3. Administration.
4. Department Reports: Police, Fire/EMS

CONSENT ITEMS

The Council may approve these items without discussion or public comment and may remove an item to the Business Items for discussion and consideration.

1. Approval of Minutes: January 20, 2026

PUBLIC HEARINGS

The Council will accept public comment and may approve the following items:

1. Fiscal Year 2025-2026 Budget Amendments. Resolution R26-07 (02-03-26).

BUSINESS ITEMS

The Council will discuss (without public comment) and may approve the following items:

1. Election of Mayor Pro Tempore *(Saratoga Springs City Code Section 2.02.01.3).*
2. Site plan for 2429 Stagecoach Drive. Travis Olsen, applicant.
3. Consideration for Revocation or Extension of the Canyon Hollow Development Agreement. Located at 1498 N. Summer Village Rd. Jason Scarbrough as applicant.
4. Drinking Water and Pressurized Irrigation Systems Masterplan Update. Resolution R26-08 (02-03-26).

CLOSED MEETING

Possible motion to enter into closed meeting for the purchase, exchange, or lease of property; pending or reasonably imminent litigation; the character, professional competence, or the physical or mental health of an individual; or the deployment of security personnel, devices, or systems.

WORK SESSION

1. Council Workshop and training follow up.

ADJOURNMENT

Supporting materials are available for inspection on the City Website, www.saratogasprings-ut.gov. Questions and comments to Staff and/or Council may be submitted to comments@saratogasprings-ut.gov Meetings are streamed live at https://www.youtube.com/c/CityofSaratogaSprings.

PLEASE NOTE: The order of items may be subject to change with the order of the Mayor. One or more council members may participate by electronic telecommunication means such as phone, internet, etc. so that they may participate in and be counted as present for all meeting purposes, including the determination that a quorum is present.

In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify the City Recorder at 801.766.9793 at least two days prior to the meeting.



CITY OF SARATOGA SPRINGS

Police Department
February 2026

SSPD Training and Special Events

* ***Recent Police Department Training***

NOV:	Department Training: Professionalism, Officer & Vehicle Safety, Taser, Baton, Autism, Crisis Events
DEC:	SWAT Training: Weapons Qual, Weapons Drills, Warrant Service Options, Drone Ops, Search Tech
JAN:	Department Training: Pistol Night Qualification, VIRTRA Firearms and Use of Force Simulator
JAN:	Command Team Training: Dr. Stone; Physical Wellness for Law Enforcement

* ***Recent Special Events/Community Activities***

Officer Recruitment, Hiring and Training
Citizen's Academy Graduation
Veteran's Day Program Support
Police Chief Day at the Utah Legislature
Department Holiday Party
Support Staff Holiday Luncheon
Accreditation Update

SSPD February 2026 Update

Citizen and Community Interaction

The Citizen's Academy graduation was conducted in November. The police department color guard supported the city Veteran's Day ceremony. The chief of police attended the Police Chief's Day at the Utah Legislature and met with Senator Balderree and Representatives Hansen and Maloy.

Major Case Update

The department continues to investigate a very complex double homicide. The latest investigative techniques have been applied. Numerous search warrants have been written and executed. Several additional interviews have been conducted. Numerous items have been sent to specialized labs for analysis and some results on those items are still pending. We have been working this case closely with the Utah County Attorney's Office. The FBI is also assisting us on certain aspects of this case.

Employee Recruitment/Personnel

The department hired and trained two new officers and two new Records Clerks.

Training

Department training includes subjects that prepare officers to deal with the highly challenging situations they face on the job on a daily basis. This included not just the procedural methodologies, but how to deal with these challenging situations from a mental wellness standpoint. The training has a focus on officer and citizen safety, less lethal methods, and approaches to minimize hazards.

SSPD – Workload

CALLS FOR SERVICE			Original Projection
2014	13358	*(14% Increase)*	
2015	15189	*(14% Increase)*	
2016	15480	*(2% Increase)*	
2017	16037	*(4% Increase)*	
2018	19002	*(19% Increase)*	*18352*
2019	19257	*(3% Increase)*	*19572*
2020	18325	*(6% Decrease)*	*21529*
2021	18484	*(1% Increase)*	*21138*
2022	21086	*(14% Increase)*	*20147*
2023	21650	*(3% Increase)*	*22984*
2024	23014	*(7% Increase)*	*23382*
2025	26743*	*(17% Increase)*	*24625*
2026	**29150**	***(9% Projected)***	***29150***

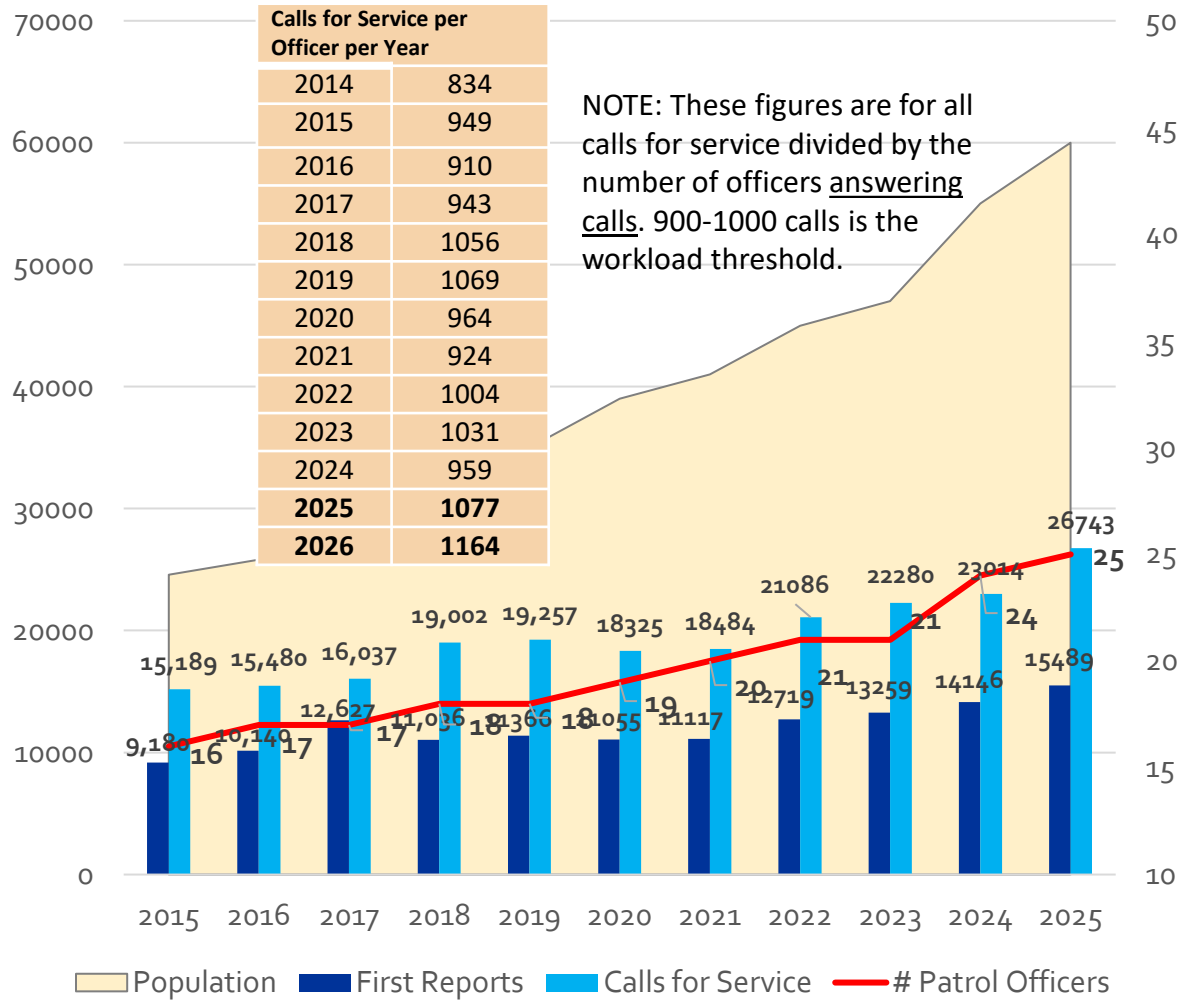
12 year average: 9% increase in calls per year. * Does not include 522 Fingerprint calls in 2025.

INCIDENTS w/FIRST REPORTS		
2014	7050	*(13% Increase)*
2015	9180	*(30% Increase)*
2016	10140	*(10% Increase)*
2017	12627	*(26% Increase)*
2018	11036	*(12% Decrease)*
2019	11366	*(3% Increase)*
2020	11055	*(2% Decrease)*
2021	11117	*(1% Increase)*
2022	12719	*(15% Increase)*
2023	13023	*(3% Increase)*
2024	14146	*(9% Increase)*
2025	15489	*(10% Increase)*
2026	**16883**	***(9% Projected)***

2026 projections suggest adding at least four additional officers in patrol or traffic units.

Calls for Service per Officer per Year	
2014	834
2015	949
2016	910
2017	943
2018	1056
2019	1069
2020	964
2021	924
2022	1004
2023	1031
2024	959
2025	**1077**
2026	**1164**

NOTE: These figures are for all calls for service divided by the number of officers answering calls. 900-1000 calls is the workload threshold.



SSPD Areas of Focus and “Truths”

***Police Department Areas of Focus*:**

* Providing Professional and Fair Law Enforcement Services
* Officer Safety
* Officer Training, Wellness/PTSD, Retention
* Mental Health, Suicide and Opioid Epidemic Response
* School Safety
* Real Time Data Information/Mapping Technology
* Forensics/Evidence Technology (FARO, Digital, DNA, Drones)
* Special Operations (SWAT, Active Shooter, Terrorism Awareness)
* Use of Force Management and Review
* Media/Social Media Use and Response
* Community Interface

Police Department “Truths”

* People Are More Important Than Hardware/Systems
* Quality is Generally More Important Than Quantity
* Police Officers Are Not Easily or Quickly Recruited or Trained
* Police Capability Cannot Be Produced Upon/During an Emergency
* Police Require Competent Support Staff



CITY OF SARATOGA SPRINGS

Fire & Rescue Quarterly Report

2025 Calendar Year Run Trends

3,442 Total incidents

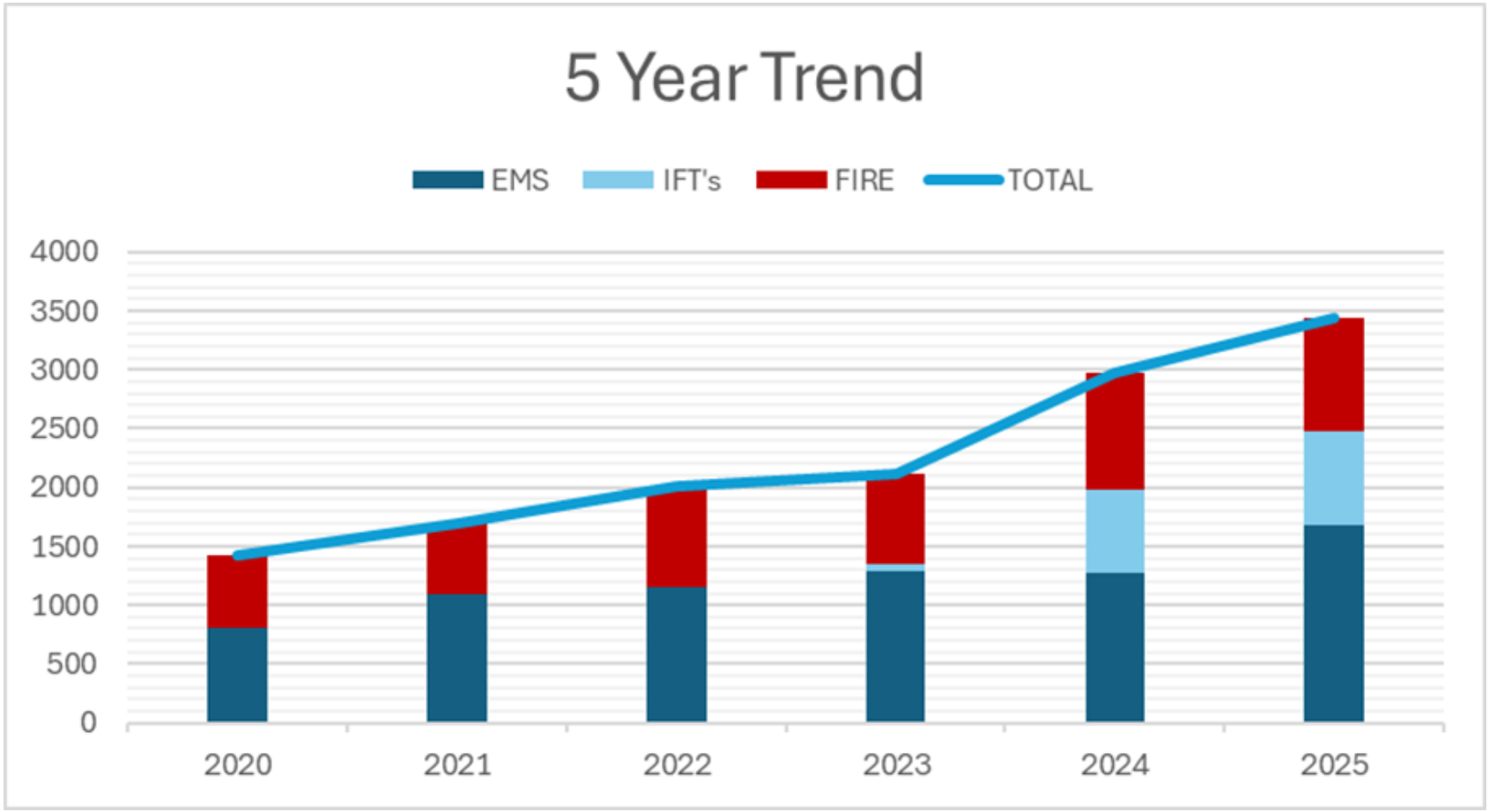
15% Increase in incidents

70% Occur in the north zone

72% EMS related

7:33 Minutes. Median response time

11:36 Minutes. 90th percentile response time



Highlights

- New ambulance (THANK YOU!)
- Battalion Chief promotions
- Chief Jess Campbell retirement
- Fire Prevention Week Open House
- Joint training evolutions with regional cities
- North Station fire alarm & suppression install
- North Station bathroom remodel
- Administrative staff moved into new City Hall
- Crew recognized by Mountain Point Hospital
- Annual hose, pump and ladder testing



Questions?

MINUTES – City Council Meeting

Tuesday, January 20, 2026
City of Saratoga Springs City Offices
319 S. Saratoga Rd., Saratoga Springs, Utah 84045

POLICY MEETING

CALL TO ORDER

6:00 p.m. by Mayor Chris Carn

1. **Roll Call** – A quorum was present
   Present:
   Mayor Chris Carn, Council: Audrey Barton, Edon Davenport, Lance Wadman, Emma Wilson, Rob Taylor.
   Staff: City Manager Mark Christensen, City Attorney Kevin Thurman, Assistant City Manager Owen Jackson, PR Manager AnnElise Harrison, Senior/Long Range Planner Tippe Morlan, Budget Administrator Spencer Quain, Economic Development Director Doug Meldrum, Senior Planner David Jellen, Planner II Kendal Black, Deputy Recorder Heather Washburn, Public Works Director Jeremy Lapin, Police Chief Andy Burton, Civic Events Coordinator Corrine Prestwich.
   Others: Cate Hall, Bill Hall, Tate S., Taylor S., Bryce Christensen, Jean Paul Wardy.
2. **Moment of Reflection –** given by Councilmember Davenport.
3. **Pledge of Allegiance** – led by Councilmember Taylor.
4. **Presentation** –
   Mayor Carn asked Councilmember Wilson to read the proclamation made in Resolution No. R25-63 (11-18-25) which emphasized the City's pledge to volunteerism.

   Cate Hall and Bill Hall, JustServe specialists for the City of Saratoga Springs, thanked Councilmember Wilson for reading the proclamation and presented the City with a certificate honoring the City's commitment to volunteerism.
5. **Recognition: Outgoing Planning Commissioners Charlie Carn and Jack Mangum** – Mayor Carn commented that the Recognition Ceremony would be moved to a future meeting.
6. **Public Input** – No public input was given.

REPORTS

1. **Mayor:** Mayor Carn discussed the successful annual workshop, meetings, and highlighted the appointment of Edon Davenport as a Council Member.
2. **City Council:** Councilmember Wilson reported attending a recent library board meeting and noted a significant increase in new library card signups during the library's first week.
3. **Administration:** City Manager Mark Christensen thanked the mayor for his comments on the workshop, noted the experience of working with the new council, and advised that a closed session was needed.
4. **Department Reports:** Civic Events Coordinator Corrine Prestwich gave a presentation and reported that a total of 121,692 participants took part in civic events for 2025. She discussed the impact of community unity. She noted that 28 Youth Council members were scheduled to attend the legislature that year, demonstrating program growth. She reported that the Youth Theater program had doubled. She presented a list of events planned for 2026. At Councilmember Wadman's request, she shared that the participant total reflected an increase of approximately 20,000 participants from the prior year.

CONSENT ITEMS

1. **Resolution R26-06 (01-20-26) Appointing Audrey Barton to the Utah Lake Authority Board, with Robert Taylor as alternate.**

DRAFT

2. **Approval of Minutes: January 6, 2026; January 7, 2026; & January 9 – 10, 2026.**

Motion by Councilmember Barton to approve the items on the Consent Calendar. Seconded by Councilmember Wadman.
Vote:

Council Member Barton	**Yes**
Council Member Davenport	**Yes**
Council Member Taylor	**Yes**
Council Member Wadman	**Yes**
Council Member Wilson	**Yes**

No: None.
Absent: None.
Motion passed 5-0

PUBLIC HEARINGS

1. **Fiscal Year 2025-2026 Budget Amendment. Resolution R26-04 (01-20-26).**
Budget Administrator Spencer Quain reviewed the third budget amendment for the fiscal year and highlighted key items, including a request to convert a part-time victim's advocate position to a part-time records clerk position, and a request for a new battalion chief within the fire department. He explained that many of the amendments were bookkeeping entries related to depreciation adjustments, as well as adjustments to public works project budgets based on completed projects and updated cost information midway through the year.

Public Hearing opened by the Mayor. Receiving no public comments, the Public Input was closed by the Mayor.

Motion made by Councilmember Wadman to approve the Fiscal Year 2025-2026 Budget Amendment. Resolution R26-04 (01-20-26). Seconded by Councilmember Wilson.
Vote:

Council Member Barton	**Yes**
Council Member Davenport	**Yes**
Council Member Taylor	**Yes**
Council Member Wadman	**Yes**
Council Member Wilson	**Yes**

No: None.
Absent: None.
Motion passed 5-0

BUSINESS ITEMS

1. **Major Site Plan Amendment for Walmart EV Charging Station. Located at 136 West Crossroads Boulevard, Meaghan Farrell as applicant.**
Planner II Kendal Black provided an overview of the item, explaining the amendment would allow for adding electric vehicle chargers to the west side of the parking lot. The plan would remove six parking stalls but maintain the required number and comply with all applicable codes. Black noted that the chargers and associated electrical equipment would be fenced and landscaped, including a relocated tree and landscaping buffers to minimize visibility, and explained that the site plan required council approval because the amendment would change the total number of parking stalls.

Bryce Christensen, on behalf of Walmart's design team, reported that four new dual-port DC fast chargers were planned, serving eight electric vehicle stalls. He noted that their team and Staff were working to meet required screening and landscaping codes and explained that the chargers would be state-of-the-art, accessible through the Walmart app, and serve as an added amenity for the community and visitors.

Councilmember Barton confirmed with the applicant that the customers pay for charging through the app.

DRAFT

Councilmember Wadman received clarification that project initially removed 14 parking stalls and that 8 stalls would remain after the redesign. He said that the stalls were made wider for user convenience and accessibility, including an accessible path of travel to the front of the Walmart building. It was confirmed that employees from neighboring businesses did not typically park in that area.

Councilmember Wilson observed that many of the stalls were often empty.

City Manager Mark Christensen explained that a shared parking agreement existed between Walmart and the surrounding businesses and was recorded with the property owners.

Councilmember Taylor noted concerns regarding the landscaping plan. He observed that one of the proposed replacement trees on the northwest side would be located where trees already exist and suggested that an alternative location should be considered to meet tree replacement requirements, indicating that the current plan appeared inaccurate.

Councilmember Davenport received clarification that the Development Review Committee (DRC) portion of the application was left blank because the applicant had not yet met with Planning for DRC prior to submitting the application. She asked if the applicant planned to mitigate construction impacts to neighboring businesses.

Bryce Christensen explained that during construction, the store manager planned to work with adjacent businesses as needed. He said the construction area was to be fully contained and screened to keep the public out and protected, and that the construction period was expected to be 6 weeks. He said that coordination had occurred with Rocky Mountain Power in advance to schedule work in a way that could overlap and limit the construction timeline.

Councilmember Davenport requested more information on other projects they have done.

Bryce Christensen explained that Walmart was implementing a nationwide electric vehicle charging network and that his firm was a preferred consultant assisting with that effort. He said the proposed project in the City of Saratoga Springs was similar in scope to other projects underway nationwide and was intended to provide reliable electric vehicle charging for customers.

Councilmember Wilson thanked the applicant for bringing EV charging stations to the City.

Motion made by Councilmember Barton to approve Major Site Plan Amendment for Walmart EV Charging Station. Located at 136 West Crossroads Boulevard, Meaghan Farrell as applicant, with any Staff Findings and Conditions. Seconded by Councilmember Taylor.
Vote:

Council Member Barton	**Yes**
Council Member Davenport	**Yes**
Council Member Taylor	**Yes**
Council Member Wadman	**Yes**
Council Member Wilson	**Yes**

No: None.
Absent: None.
Motion passed 5-0

2. **Site Plan for Saratoga Town Center Lot 304, located at 1508 N. Redwood Road, Austin Cooper-JDH Development as applicant.**

Senior Planner David Jellen explained that the site plan was largely compliant with code, with several conditions of approval identified in the staff report. He reviewed conditions related to drive aisle widths, site interconnection, and landscaping, noting that the applicant intended to meet code requirements. He further explained that the proposed building elevations and materials were consistent with existing development on the site.

Councilmember Davenport asked whether the 25,000-square-foot indoor recreation space would be a single use or subdivided into multiple units.

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Senior Planner David Jellen explained that the floor plan could allow up to six units, but it was anticipated that one or two users would occupy the space, similar to the adjacent building.
Mayor Carn confirmed that the flexibility allows for the building to be subdivided into six units in the future if the current user vacated.

Councilmember Taylor received clarification that the maximum amount is six units.

Councilmember Wadman asked whether any parking issues had been observed for the building to the east, noting that the building contained two vendors, including one larger tenant. He also inquired about whether the parking to the north would impact future development.

Senior Planner David Jellen responded that neither tenant had opened to the public, so parking impacts had not yet been observed, and noted that circulation concerns were related to that uncertainty. David showed an exhibit in the presentation, noting that parking section would not impact future development.

Councilmember Wilson inquired whether the developer was the same as the one for the adjacent Inspire Sports complex, whether a third phase was planned, whether the buildings were intended for recreational use, and whether the applicant knew the identity of the tenant.

Senior Planner David Jellen confirmed the site it all under single ownership and explained that the conceptual site plan showed future buildings north and south of the current building and that the applicant had not indicated whether they would be developed as one phase or multiple phases. He explained that the property was zoned regional commercial and that uses included a mix of strip retail, restaurants, and larger buildings intended for users requiring more space. He confirmed that the applicant had interested parties, but that no one had been officially confirmed.

Councilmember Taylor confirmed with Staff that a parking exhibit shown in the presentation was conceptual.

Motion made by Councilmember Taylor to approve Site Plan for Saratoga Town Center Lot 304, located at 1508 N. Redwood Road, Austin Cooper-JDH Development as applicant, with any Staff Findings and Conditions. Seconded by Councilmember Barton.
Vote:

Council Member Barton	**Yes**
Council Member Davenport	**Yes**
Council Member Taylor	**Yes**
Council Member Wadman	**Yes**
Council Member Wilson	**Yes**

No: None.
Absent: None.
Motion passed 5-0

3. **Contract award for new pedestrian crossing at 400 S (Patriot Park) project. Resolution R26-05 (01-20-26).**

Public Works Director Jeremy Lapin provided an overview of the item as the final step in a multi-step process. He said that traffic studies had been conducted the previous year with area residents to determine whether a crossing was warranted, and that the council had directed staff to return for final authorization before expending funds. He reported that the project was estimated to cost approximately $85,000, including $60,000 for construction and $20,000 for in-house flashing beacon signs. He further explained that the project followed recently updated traffic-calming policy criteria, which prioritize midblock crossings at regionally significant trails or destinations. He added that the project would include curb pullouts on both sides of the road to enhance safety and noted that work would begin following council approval.

Mayor Carn provided background, noting that the council had approved the project the previous year and that traffic studies were conducted both in the summer and during the school year.

DRAFT

Councilmember Wilson expressed appreciation for the project and the cost-saving efforts of those involved. She mentioned that the project was estimated to be half of the originally intended cost.

Councilmember Wadman explained to those in attendance that many people request crosswalks and emphasized that the project followed an established process.

Motion made by Councilmember Barton to approve Contract award for new pedestrian crossing at 400 S (Patriot Park) project. Resolution R26-05 (01-20-26). Seconded by Councilmember Wilson.
Vote:
Council Member Barton Yes
Council Member Davenport Yes
Council Member Taylor Yes
Council Member Wadman Yes
Council Member Wilson Yes
No: None.
Absent: None.
Motion passed 5-0

WORK SESSION

1. **CenterCal Downtown conceptual plan review.**
Economic Development Director Doug Meldrum introduced Jordan Petersen with Landmark Design and Jean Paul Wardy with CenterCal.

Jean Paul Wardy gave an overview of the presentation and discussed prior and current projects. He emphasized their commitment to long-term quality, discussed community and city financial benefits, and provided several case studies.

The Council, Staff, and CenterCal representatives discussed:

- Project density and Residential unit square footage
- Residential units in Phase I and II and how they relate to building parking structures
- Park area allocation, dedication credits, park sizing, event space, outdoor seating
- Differences between the original concept and the current concept
- Concerns regarding open space sizes
- Sidewalk sizes of 18 feet
- Community feedback options
- How the canal and retention pond factor into the project
- Potential timelines and tenants
- Traffic and road capacity
- Financial milestones for moving to Phase II
- Public activities in prior projects
- Medical Dr. and Market Street
- Freeway access, on-ramps and off-ramps, for the project
- Existing Residential connections
- Potential light rail and BRT lines
- Tenant timelines and LOI commitments prior to groundbreaking

CLOSED MEETING –

Motion by Councilmember Barton to enter into closed meeting for the purchase, exchange, or lease of property, discussion regarding deployment of security personnel, devices, or systems; pending or reasonably imminent litigation, the character, professional competence, or physical or mental health of an individual. Seconded by Councilmember Wadman.
Vote:
Council Member Barton Yes
Council Member Davenport Yes

DRAFT

Council Member Taylor Yes
Council Member Wadman Yes
Council Member Wilson Yes
No: None.
Absent: None.
Motion passed 5-0

A short break was taken.
Meeting commenced at 7:50 p.m.

Present: Mayor Carn, Council Members Audrey Barton, Lance Wadman, Edon Davenport, Emma Watson, Rob Taylor. City Manager Mark Christensen, Assistant City Manager Owen Jackson, City Attorney Kevin Thurman, Police Chief Andy Burton, Public Works Director Jeremy Lapin, Deputy Recorder Heather Washburn.

Closed Meeting ended at 9:20 p.m.

ADJOURNMENT
Meeting Adjourned Without Objection at 9:22 p.m. by Mayor Chris Carn.

_____ _____
Mayor Chris Carn Date

_____
City Recorder

DRAFT

City Council
Staff Report

Author: **Spencer Quain, Budget Administrator**
Subject: **Budget Amendment**
Date: **February 3rd, 2026**
Type of Item: **Resolution**

Summary Recommendation: Staff recommends approval of the following by resolution amending the budget for the fiscal year 2025-26.

Description

A. Topic

This is the fourth budget amendment for the fiscal year 2025-2026.

B. Background

Attached is the detail of the requested budget amendments for this budget amendment.

C. Analysis

Additional budgeted expenditures are detailed in the attached spreadsheet.

Recommendation: Staff recommends approval of the resolution amending the budget for the fiscal year 2025-26.

2025-2026 Budget Amendment #4						
G/L Account	Department	Description	Current FY 2026 Budget	New Budget Amount	Debit/Credit	Notes/Comments
Staff have determined that the following items do not create a substantial burden on future budgets (according to a 5-year budget analysis)						
General Fund						
Expenditures						
10-4190-110	Community Development	Salaries & Wages	$ 279,147	$ 280,580	$ 1,433	Convert Community Development Director to Assistant City Manager. Funded with Fund Balance.
10-4190-130	Community Development	Employee Benefits	$ 122,021	$ 122,359	$ 338	"
10-4149-110	Facilities Maintenance	Salaries & Wages	$ 292,959	$ 362,597	$ 69,638	New Senior Maintenance, FT Custodian, and 2 PT Custodians. New Facilities staff are needed for the new City Hall, and for new Parks Bathrooms maintenance. Funded with Fund Balance.
10-4149-130	Facilities Maintenance	Employee Benefits	$ 205,336	$ 248,641	$ 43,305	"
10-4140-140	Facilities Maintenance	Uniforms & Clothing	$ 2,000	$ 3,000	$ 1,000	"
10-4140-700	Facilities Maintenance	Capital Outlay	$ -	$ 37,500	$ 37,500	New Vehicle for Facilities Maintenance Department. Needed to access parks bathrooms. Funded with Fund Balance.
10-4149-740	Facilities Maintenance	Facilities Equipment	$ 44,000	$ 47,000	$ 3,000	Equipment for new Facilities Maintenance staff. Funded with Fund Balance.
10-4220-110	Fire	Salaries & Wages	$ 3,558,643	$ 3,629,449	$ 70,806	Staffing for 3rd Ambulance (6 Firefigher/Paramedic 2s). The third ambulance is needed to meet increased demand in 911 EMS and interfacility transfers. This unit is apart of the planned staffing expasion and will be placed into service at the City's 3rd station, anticipated completion in early 2028. This ambulance staffing meets the 2025 proposed fire/EMS strategic plan objectives. This reduces mutual aid dependency and supports the plan to decrease response times in the central area of the City. Funded with Fund Balance.
10-4220-130	Fire	Employee Benefits	$ 2,072,378	$ 2,121,269	$ 48,891	"
10-4220-140	Fire	Uniforms	$ 73,200	$ 78,200	$ 5,000	"
10-4220-330	Fire	Fire Training	$ 71,500	$ 73,100	$ 1,600	"
10-4220-740	Fire	Communications-Radios	$ 29,300	$ 31,800	$ 2,500	"
10-4220-700	Fire	Capital Outlay	$ 429,416	$ 534,416	$ 105,000	Temporary Station (Remodel/Temprorary Structure) (Bay-$70,000 Gate-$35,000). Funded with Fund Balance.
10-4510-130	Parks	Overtime Budget	$ 26,000	$ 48,000	$ 22,000	Increase Overtime Budget. Increase is needed to cover Parks staff working various City Events (Monday Funday, Splash Days, Days of Service, etc.). Funded with Fund Balance.
10-4510-740	Parks	Capital Outlay	$ 273,870	$ 321,670	$ 47,800	Additional truck is needed for Parks staff. Funded with Fund Balance.
General Fund Total					**$ 459,811**	
Total Funding Impact					**$ 459,811**	

RESOLUTION NO. R26-07 (02-03-26)

A RESOLUTION AMENDING THE CITY OF SARATOGA SPRINGS BUDGET FOR FISCAL YEAR 2025-2026 AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Saratoga Springs has found it necessary to amend the City's current 2025-2026 fiscal year budget;

WHEREAS, pursuant to state law, the City Council has conducted a public hearing on the proposed amended budget; and,

WHEREAS, the City Council has determined that the proposed budget amendment is in the best interests of the public, will further the public health, safety, and welfare, and will assist in the efficient administration of City government.

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF SARATOGA SPRINGS, UTAH, THAT:

1. The City of Saratoga Springs does hereby adopt the amended 2025-2026 fiscal year budget as set forth and attached hereto.

BE IT FURTHER RESOLVED that this resolution shall take effect immediately upon passage.

Passed on the 3rd day of February, 2026

CITY OF SARATOGA SPRINGS
A UTAH MUNICIPAL CORPORATION

Signed: _____
Chris Carn, Mayor

Attest: _____
City Recorder

SARATOGA SPRINGS PLANNING

CITY COUNCIL
Staff Report

Site Plan
2429 Stagecoach Drive
February 3, 2026
PUBLIC MEETING

Applicant:	Travis Olsen
Owner:	Brett Belliston
Location:	2429 North Stagecoach Drive
Project Acreage:	1.32 acres
Lots:	1
Current Use:	Undeveloped
Land Use Designation:	Regional Commercial
Parcel Zoning:	Regional Commercial
Adjacent Zoning:	Regional Commercial and Office Warehouse
Adjacent Uses:	Regional Commercial and Office Warehouse
Type of Action:	Administrative
Land Use Authority:	City Council
Planner:	Kendal Black, Planner II

A. Executive Summary and Request:

Applicant is seeking approval of a site plan for one commercial building 12,568 square feet in size located at 2429 North Stagecoach Drive for The Hub at Saratoga Phase 1 development. The building includes five tenant spaces with one space anticipated to be a drive-thru restaurant and the remaining four to be potential retail uses.

There are multiple parking standards used to calculate the parking reflecting the proposed uses. The potential drive-thru space was calculated at 5 stalls per 1,000 square feet, and the rest were calculated at 4 stalls per 1,000 square feet, amounting to 50 total required parking stalls. There are 44 proposed stalls, with an additional 7 stalls proposed with a shared parking agreement.

The property is 57,355 square feet (1.32 acres) in size. The proposed building is 24’ tall. The proposed site plan complies with all landscaping, architectural, and lighting requirements. The proposed site plan can comply with all site and parking requirements if the interconnection requirement exception due to steep grade at the property line and the shared parking agreement are approved by the City Council (see section F of this staff report for more information).

Kendal Black, Planner II
kblack@saratogasprings-ut.gov
319 South Saratoga Road • Saratoga Springs, Utah 84045
801-766-9793 x161 • 801-766-9794 fax

Recommendation:
On January 15, 2026, the Planning Commission held a public meeting and **recommended approval** of the proposed application with a unanimous vote, and included a **recommendation to approve Option B** with **approval of the requested shared parking agreement** (see section F of this staff report for more information). Draft minutes are attached.

Staff recommends that the City Council conduct a public meeting on the application, review and discuss the proposal, and choose from the options in the Recommendation and Alternatives Section of this report. Options include approval with or without conditions, denial, or continuation.

B. Background:
The Hub at Saratoga Phase 1 plat was recorded on March 21, 2022. The property is bordered by Stagecoach Drive to the east and 2400 North to the south. The Land Development Code requires interconnection with the adjacent property to the north; however, the Code allows the City Council to approve an exception to this requirement when the adjoining property contains slopes exceeding 30 percent. The slope along the northern property line is approximately 48 percent. This exception is proposed as Condition of Approval #5.

The site provides interconnection to the west through the Empresa Floors parking lot, and the required cross-access easement has been obtained from the Empresa Floors property owner. An additional driveway access is provided on the east side of the site onto Stagecoach Drive. Interconnection to the south is not feasible due to driveway spacing requirements from the nearby intersection and site grade constraints.

A shared parking agreement is being submitted for City Council approval to utilize nine of Empresa Floors' furthest northeast parking stalls (Exhibit 10). These stalls are proposed to satisfy current parking requirements and to provide additional parking capacity should a more intensive use than retail occupy the development in the future. The code allows up to 25% (15 parking stalls) of required parking to be shared subject to Land Use Authority approval. The applicant is requesting that nine stalls be approved for shared parking (15% of the Empresa stalls).

C. Process: City Code Chapter 19.14.05.8 outlines the process for a site plan review.
Site Plan Application and Approval Process.

a. All persons seeking Site Plan approval shall submit an application to the Planning Department for review by the City's Development Review Committee (DRC). **Complete.**
b. Complete engineering drawings for all on-site and off-site improvements must be provided prior to the Site Plan application being scheduled for any public meeting or hearing. The Engineering Department and Development Review Committee shall review the drawings for compliance with City ordinances, regulations, and standards. **Construction Drawings reviewed.**
c. New site plans shall follow the process below:

i. Prior to being scheduled for any public meeting or hearing, the developer shall provide a soils report for the development. **Provided.**
ii. Upon compliance with the Development Review Committee's recommendations, the revised application shall be forwarded to the Planning Commission for possible recommendation. **Scheduled.**
iii. Upon recommendation by the Planning Commission, the application shall be forwarded to the City Council. **Scheduled.**
iv. The City Council shall review and take action to table, approve, deny, or to modify the same. **TBD.**
v. Upon action by the City Council on the Site Plan application, the City Recorder shall prepare written minutes of the decision. **TBD.**

D. Community Review:

Public Meeting: This has been noticed as a public meeting pursuant to City and State statutes, which requires posting notice of the meeting and the agenda not less than 24 hours before the meeting.

Public Comment: As of the date of this report, no public input has been received.

E. General Plan:

The General Plan outlines the importance for having a mix of uses within the City, which include:

- Reducing travel distances for goods and services.
- Balancing inbound and outbound travel at peak morning and evening times.
- Diversifying the local tax base to fund public safety and other public services.

Staff conclusion: Consistent. 2429 Stagecoach Drive seeks to provide retail and drive-thru restaurant uses on the property. The location of the uses will reduce travel distances for residents, will help to balance the need for travel outside the City, and should provide an additional diversification of the tax base.

F. Code Criteria:

For full analysis please see the attached Planning Review Checklist.

The applicant is requesting approval of a shared parking agreement with Empresa Floors for 9 parking stalls. Section 19.09.05(10) of the Land Development Code states that "Up to twenty-five percent of the required parking may be shared with an adjacent use upon approval by the Land Use Authority. The developer must provide:

a. an agreement granting shared parking or mutual access to the entire parking lot; and
b. peak demand data by a professional traffic engineer showing that shared parking will accommodate the uses."

The applicant is requesting an exception to the connectivity requirements. Section 19.12.06.4 of the Land Development Code states that "all new subdivisions shall provide connectivity with adjacent developed and undeveloped properties… All new subdivisions are required to:

a. Extend streets sidewalks, and trails at least once in each direction to adjacent properties; and
b. Connect to all existing vehicular and pedestrian access points on adjacent developed properties; and
c. Install and connect public trails into all adjacent public open space, parks, and trails, which includes but is not limited to connections to trail corridors with public access easements; and
d. Stub public streets at least every 1,000 feet into all adjacent sides of undeveloped properties; and
e. Connect or stub into all adjacent master-planned rights-of-way, sidewalks, trails, and public transportation stops, stations, and facilities.
f. Exceptions: **Connectivity Standards may be reduced by the Land Use Authority for** Preliminary Plats, Final Plats, or **Site Plans,** as applicable, **if the applicant provides clear and convincing evidence that it is impracticable to achieve due to the following**:
    i. Right-of-way, intersection, or access spacing cannot meet the Standard Technical Specifications and Drawings for City of Saratoga Springs; or
    ii. **The property is adjacent to** the Jordan River, Utah Lake, delineated wetlands, **slopes exceeding 30%**, drainage channels, natural features, open space, or waterways **that do not allow for a crossing or an access**; or
    iii. The property is adjacent to fully developed property that does not have any vehicular or pedestrian access points.
    iv. **Exceptions shall be construed narrowly by the Land Use Authority.**
    v. These exceptions shall not apply to trail connections."

The applicant requests that the City review two potential site layouts to determine the best solution to parking and interconnection to the north.

Option A includes a stub to the north, but will require a shared parking agreement to be approved by the City Council (see Exhibit 4). This option will require retaining walls and grading modifications on both sides of the property line. The subject property will have to slope down and the adjacent property will have to raise the grade at the connection point when it is developed. The applicant prefers Option B, as outlined below.

Option B does not have a stub to the north and can meet the parking requirement on site, but still requests approval of the shared parking agreement (see Exhibit 5). This option may only be approved in the City Council grants an exception to the requirement for interconnection to the north. The applicant requests this exception, due to the grade change between properties. The applicant requests approval of a shared parking agreement to increase available parking to allow a broader range of tenant uses beyond retail and office and include uses with higher parking demand.

Code Section	Option A	Option B
19.04, Land Use Zones: • Regional Commercial Zone Standards:	Complies Complies	Complies Complies
19.06, Landscaping and Fencing:	Complies	Complies
19.09, Off-Street Parking: • 19.09.10, Required Minimum Parking:	Can Comply* Can Comply*	Complies Complies
19.11, Lighting:	Complies	Complies
19.12, Subdivisions: • 19.12.06(4), Connectivity Standards:	Complies Complies	Can Comply** Can Comply**
19.13, Process:	Complies	Complies
19.14, Site Plans: • 19.14.05(7)(g):	Complies Complies	Complies** Complies**
19.16, Site and Architectural Design Standards:	Complies	Complies
19.18, Sign Regulations: • (separate permit and approval required)	Complies	Complies

* Shared Parking Agreement approval needed to comply

** Interconnection exception approval needed to comply

G. Recommendation and Alternatives:

Staff recommends that the City Council take public input, discuss the application, and choose from the following options.

Option 1 – Positive Recommendation"I move that the City Council approve the requested Site Plan for 2429 Stagecoach Drive located at 2429 North Stagecoach Drive, with the Findings and Conditions in the Staff Report."

Findings

1. The application is consistent with the General Plan, as articulated in Section E of the staff report, which section is incorporated by reference herein.
2. The application can comply with the criteria of the Land Development Code, as articulated in Section F of the staff report, which section is incorporated by reference herein, subject to City Council approval of shared parking and an exception to the northern stub.

Conditions:

1. All conditions of the City Engineer shall be met, including but not limited to those in the attached Engineering Staff Report.
2. All requirements of the Fire Chief shall be met.
3. Once approved by the City Council, all remaining redlines on plans, Engineering staff report, and the redlines in the Application Review Checklist shall be corrected before the construction drawings are approved by staff.
4. The requested shared parking agreement to utilize nine parking stalls located on the Empresa Floors property is [approved/denied] by the City Council.

5. Pursuant to Section 19.12.06(4)(f), interconnection to the property to the north [is required/is not required], as determined by the City Council.
6. All other Code requirements shall be met.
7. The site plan is approved subject to [Option A or Option B] as outlined in Section F of this staff report.
8. Any other conditions or changes as articulated by the City Council: _____.

Option 2 – Continuance

"I move to **continue** the Site Plan for 2429 Stagecoach Drive to another meeting on [DATE], with direction to the applicant and Staff on information and/or changes needed to render a decision, as follows:

1. _____
2. _____

Option 3 – Negative Recommendation

"I move that the City Council deny the requested Site Plan for 2429 Stagecoach Drive located at 2429 North Stagecoach Drive with the Findings below:

1. The application is not consistent with the General Plan:
   a. _____, and/or,
2. The application is not consistent with Sections 19.09, 19.12, 19.14, and 19.16 of the Code:
   a. _____, and/or

H. Exhibits:

1. City Engineer's Report
2. Location & Zone Map
3. Application Review Checklist
4. Site Plan with interconnection to the north (Option A)
5. Site Plan without interconnection to the north (Option B)
6. Landscape and Irrigation Plans with interconnection to the north
7. Landscape and Irrigation Plans without interconnection to the north
8. Photometric Plan
9. Elevations
10. Cross-Access Easement
11. Shared Parking Agreement
12. Planning Commission Draft Minutes - January 15, 2026

Staff Report

Author: Ken Knight, Staff Engineer
Subject: 2429 Stagecoach Drive– Site Plan
Date: January 15, 2026
Type of Item: Site Plan Approval

Description:

A. Topic: The Applicant has submitted a Site Plan application. Staff has reviewed the submittal and provides the following recommendations.

B. Background:

Applicant:	*Travis Olsen—Couloir Capital*
Request:	*Site Plan Approval*
Location:	*2429 North Stagecoach Drive*
Acreage:	*1.32 Acres - 1 Lots*

C. Recommendation: Staff recommends the approval of Site Plan subject to the following conditions:

1. All review comments and redlines provided by the City Engineer are to be complied with and implemented with the approved construction drawings.

2. Provide a Storm Water Pollution Prevention Plan (SWPPP) following the State template, prior to the pre-construction meeting.

3. Owner to record a Long-Term Storm Water Management Agreement and provide a Long-Term Storm Water Management Plan (LTSWMP) for the project. The plan portion will be required prior to scheduling a pre-construction meeting.

4. Project shall comply with all ADA standards and requirements.

5. Developer must secure water rights as required by the City Engineer, City Attorney, and development code.

6. Developer shall provide easements for all public utilities not located in the public right-of-way.

7. Developer is required to ensure that there are no adverse effects to adjacent properties due to the grading practices employed during construction.

8. Developer may be required by the Saratoga Springs Fire Chief to perform fire flow tests prior to the issuance of certificate of occupancy or prior to commencement of

the warranty period.

9. Submittal of as-built drawings in pdf format to the City Engineer is required prior to acceptance of site improvements and the commencement of the warranty period.

10. Project bonding for the site plan must be completed as approved by the City Engineer prior to the preconstruction meeting.

11. Developer shall design and construct the parking lot connection to the adjacent property to the north so that it provides a safe and functional drive aisle, meeting all applicable slope best practices and ADA standards. Coordination with the adjacent property owner is required. Any request to eliminate this connection must be reviewed and approved by City Council.

12.

SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

Project Conditions		
• The development will consist of 12,400 sq. ft. of retail space. • The project is anticipated to generate approximately 507 (+169 pass-by) weekday daily trips, including 26 (+4 pass-by) trips in the morning peak hour, and 60 (+32 pass-by) trips in the evening peak hour • While the drive-thru tenant is unknown at this time, it is anticipated that the on-site queue storage will be sufficient		
2025	**Background**	**Plus Project**
Assumptions	• Cross traffic on 2400 North connecting to Lehi was estimated using the travel demand model • Trips generated from the Saratoga Springs 2250 North Redwood Road TIS and the Saratoga Springs Exchange Property TIS were added to the background model.	• None
Findings	• Poor LOS at all study intersections	• Acceptable LOS
Mitigations	• Install a traffic signal at 2400 North / Redwood Road	• None
2030	**Background**	**Plus Project**
Assumptions	• Addition of the 2100 North Freeway to the Roadway network alters the travel patterns in the project area • Traffic added from a nearby middle school	• None
Findings	• Acceptable LOS	• Acceptable LOS

Exhibit 2: Location and Zone Map





Exhibit 3: Application Review Checklist

SARATOGA SPRINGS PLANNING

APPLICATION REVIEW CHECKLIST

Updated 8.22.25

Application Information

SITE PLAN
2429 STAGECOACH DRIVE (THE HUB)

Applicant:	Travis Olsen
Owner:	Brett Belliston
Location:	2429 North Stagecoach Drive
Project Acreage:	1.32 acres
Lots:	1
Current Use:	Undeveloped
Land Use Designation:	Regional Commercial
Parcel Zoning:	Regional Commercial
Adjacent Zoning:	Regional Commercial and Office Warehouse
Adjacent Uses:	Commercial and Undeveloped
Past Action and Date:	Not Applicable
Type of Action:	Legislative
Land Use Authority:	City Council
Planner:	Kendal Black, Planner II

Date Received:	**1st submittal:** September 5, 2025
	2nd submittal: October 21, 2025
	3rd submittal: December 12, 2025
	4th submittal: Click or tap to enter a date.
Date of Review:	**1st submittal:** September 10, 2025
	2nd submittal: October 29, 2025
	3rd submittal: December 16, 2025
	4th submittal: Click or tap to enter a date.
Parcel Number(s) and size:	68:054:0004 / 1.32 acres

Section 19.13 – Application Submittal

- Application Complete (Date of Payment): September 5, 2025
- Rezone Required: No
- General Plan Amendment required: No

Section 19.13.04 – Process

- Required Meetings: Planning Commission and City Council
- Planning Director Approval: No
- Public Hearing Required – check 19.13.04 process table: Yes - City Council

- Neighborhood Meeting Required: No
    - Required for any multi-family or non-residential development proposal adjacent to developed property in a residential zone.

DRC Review

DRC Review Comments:

- Screening needs to be parapets
- Percentages of materials needed
- Additional buffering and screening needed in landscaping. Evergreen shrubs needed.
- Parking requirements are not met
- Significant grade differences on the north end (2:1)
- Engineering mentioned that 10' of clay under detention basin will need to be dug out and then filled with clean gravel

Code Review

- 19.04, Land Use Zones
    - Zone: Regional Commercial
    - General Plan Land Use: Regional Commercial
    - Density: (1 unit / 1.32 acres = .76 units per acre)

19.04.01 Requirements		Regional Commercial	
Category To Be Reviewed	**Regulation**	**Compliance**	**Findings**
Development Size (Minimum)	N/A	**N/A**	
Lot Size (Minimum)	30,000 sq. ft.	**Complies**	*57,355 sf*
Front/Corner Side Setback (Minimum)	15'	**Complies**	*34'+*
Interior Side Setback (Minimum)	10'	**Complies**	*61'+*
Rear Setback (Minimum)	30'	**Complies**	*33'+*
Building Separation (Minimum)	N/A	**N/A**	
Lot Width (Minimum)	N/A	**N/A**	*>100'*
Lot Frontage (Minimum)	N/A	**N/A**	*>100'*
Building Height (Maximum)	50'	**Complies**	*24'*
Lot coverage (Maximum)	50%	**Complies**	*21.94%*
Building Size (Minimum)	1,000 sq. ft.	**Complies**	*12,586 sf*
Building Size (Maximum)	N/A	**N/A**	

Arterial Street Setback	105' off the arterial roadway centerline, or, if applicable, 15' from the back of the 30' trail corridor - whichever is greater.	**N/A**	

Open Space and Landscaping Requirements: For non-residential and non-agricultural uses open space is not required; however a minimum of 20% of the total project shall be used for landscaping, including improvements consistent with the Parks and Trails Master Plan, General Plan, Bicycle and Pedestrian Master Plan, or other applicable plan.	**Complies.**	*28.96% provided*
19.04.08 & 19.04.11 Proposed Uses Allowed - Permitted Uses: Retail proposed	**Complies.**	*Retail use proposed for entire building*

19.05 Supplemental Regulations		
Regulation	**Compliance**	**Findings**
Flood Plain: All buildings and structures intended for human occupancy shall be constructed at least one (1) foot above the base flood elevation of Zone A as defined on the FEMA Flood Insurance Map.	**N/A.**	*Flood Zone X and commercial*
Water & Sewage: Each lot shall be connected to City water and sewer.	**Complies.**	*Proposing connections to these utilities*
Transportation Master Plan: No building lot shall be created and no structure shall be erected within the location of a proposed street, road, highway, or right-of-way as shown on the City's currently-approved Transportation Master Plan.	**Complies.**	*Not in any of these areas*
Property Access - All lots shall abut a dedicated public street or highway or a private roadway.	**Complies.**	*Abuts 2400 North and Stagecoach Drive*
19.06 Landscaping and Fencing		
General Provisions		
Drainage across property lines shall follow International Residential Code (IRC) and International Building Code (IBC), as of 2024 (shall drain onto own property).	**N/A.**	Checked by Engineering
Landscape Plans		
Regulation	**Compliance**	**Findings**
Landscape Architect: Landscaped plans shall be prepared by a licensed landscape architect.	**Complies.**	*Jeremy Ainsworth*
Existing Conditions: Show the location and dimension of all existing and proposed structures, property lines, easements, parking lots, power lines, rights-of-way, ground signs, refuse areas, and lighting.	**Complies.**	*See sheet C0.1*
Planting Plan: Show location and planting details for all proposed vegetation and materials. Indicate the size of the plant material at maturation. All existing vegetation that will be removed or remain must be identified.	**Complies.**	*See sheet LP-100 and LP-101*
Plants: The name (both botanical and common name), quantity, and size of all proposed plants.	**Complies.**	*See sheet LP-101*
Topography: Existing and proposed grading of the site indicating contours at two-foot intervals.	**Complies.**	*See sheets C0.1 and C2.0*
Irrigation: Irrigation plans showing the system layout and details.	**Complies.**	*See sheets IR-100 to IR-101 and IR-501 to IR-503*

Fencing: Location, style, and details for proposed and existing fences and identification of the fencing materials.	**N/A.**	*No fencing proposed*
Data Table: Table including the total number of each plant type, and total square footage and percentage of landscaped areas, domestic turf grasses, decorative rock, mulch, bark, and drought tolerant plant species.	**Complies.**	*All are drought tolerant*
Planting Standards		
Deciduous Trees: Minimum 2" in caliper.	**Complies.**	*All 2" caliper*
Evergreen Trees: Minimum 6' in height.	**Complies.**	*All 6' tall*
Tree Base Clearance: 3' diameter around every tree must be kept clear of turf and rock mulch. In parking lot islands and other narrow strips where turf two feet or less in width would otherwise occur, this clear area may be reduced to 2'.	**Complies.**	*See notes on sheet LP-501*
Shrubs: 25% of required shrubs must be a minimum of 5 gallons in size at time of installation; all other required shrubs shall be a minimum of 1 gallon in size.	**Complies.**	*All 5-gallon*
Turf: No landscaping shall be comprised of more than seventy percent turf, except within landscaped parks.	**N/A.**	*No turf proposed*
Drought Tolerant Plants: 50% of all trees and shrubs shall be drought tolerant.	**Complies.**	*All are drought tolerant*
Rock Mulch: Rock mulch shall be two separate colors and separate sizes and must be **contrasting in color from the pavement and other hard surfaces. All colors used must be earth tones.**	**Complies.**	*See legend explanation under Site Materials Legend 1 Landscape on sheet LP-101*
Design Requirements		
Evergreens: Evergreens shall be incorporated into landscaped treatment of sites where screening and buffering are required.	**Complies.**	*Evergreen hedges used for screening*
Softening of Walls and Fences: Plants shall be placed intermittently against long expanses of building walls, fences, and barriers to create a softening effect.	**Complies.**	*See sheet LP-100*
Planting and Shrub Beds: Planting and shrub beds are encouraged to be used in order to conserve water.	**Complies.**	*See sheet LP-100*
Water Conservation: Water-conserving sprinkler heads and rain sensors are required. Drip lines should be used for shrubs and trees.	**Complies.**	*See sheet IR-100*
Energy Conservation: Placement of plants shall be designed to reduce energy consumption. Deciduous trees are encouraged to be planted on the south and west sides of structures. Evergreens are encouraged to be planted on the north side of structures.	**Complies.**	*See sheet LP-100*
Placement: Whenever possible, landscaping shall be placed immediately adjacent to structures, particularly where proposed structures have large empty walls.	**Complies.**	*See sheet LP-100*
Trees and Power Poles: No trees shall be planted directly under or within 10' of power lines, poles, or utility structures unless: a. The Land Use Authority gives its approval. b. The Power Company or owner of the power line gives written consent. c. The maximum height or width at maturity of the tree species planted is less than 5' to any pole, line, or structure.	**N/A.**	
Planter Beds		
Weed Barrier: A high-quality weed barrier or pre-emergent shall be used.	**Complies.**	*DeWitt weed barrier*
Materials: High quality materials such as wood chips, wood mulch, ground cover, decorative rock, landscaping rocks, or similar materials	**Complies.**	*Rock mulch to be used*

shall be used, and materials must be heavy enough to not blow away in the wind.		
Edging: Concrete edging must be used to separate planter and turf areas in all non-residential zones.	**Complies.**	*See sheet LP-501*
Drip Lines: Drip lines must be used in planter beds.	**Complies.**	*See sheet IR-503*
Fencing and Screening		
Front Yards: Fences exceeding 3' in height shall not be erected in any front yard space of any residential lot.	**N/A.**	*No fencing proposed*
Clear Sight Triangle: All landscaping and fencing shall be limited to a height of not more than 3' and the grade at such intersections shall not be bermed or raised and comply with AASHTO Standards.	**Complies.**	*See sheet C1.0*
Street side yards: fencing in street side yards adjacent to a driveway shall not exceed three feet for a distance of 15 feet back from the intersection of driveway and sidewalk, or driveway and property line where no sidewalk exists as shown in the drawing below. Fencing shall also comply with all other clear sight triangle requirements as stated in 19.06.	**N/A.**	*No fencing proposed*
Retaining walls: for construction of retaining walls four feet or taller in height of unbalanced fill or for any wall supporting surcharge loads, a building permit must be obtained. Prior to construction of retaining walls, Chapter 18 of the City Code shall be consulted to determine if a grading permit is also required. Where there is a difference in elevation on opposite sides of the fence, the height of the fence shall be measured from the ground level on the highest side of the wall when the fence is placed on top of the wall. If the fence is placed at the bottom of the wall, the fence height shall be measured from the ground it is placed upon and there shall be at least 2 feet to access and maintain the retaining wall. **Retaining walls shall follow all applicable regulations outlined in Chapter 19.10 of the City Code, regardless of slope.**	**N/A.**	*Checked by Engineering*
Height: Approval of fences over 6 feet in height will be determined on a case-by-case basis by the City Council for all new developments if fencing is proposed during the subdivision review process, or by the Planning Director for all developments that have received final approval; however, in no case will a fence be allowed to exceed eight feet in height. The following criteria shall be applied in making this determination: a. compatibility with fences of surrounding uses; b. quality of proposed materials; c. aesthetics of proposed materials; d. requirements of applicable development agreements; e. intensity of existing surrounding uses; and f. applicable conditions of approval.	**N/A.**	*No fencing proposed*
Prohibited fencing: a. No barbed wire, chain link, razor, or wire (agricultural, electric, chicken wire, mesh wire, hog fencing, etc.) fences shall be allowed. This does not apply to chain link or wire fences if the fence: (1) is not being used to delineate lot boundaries; and (2) is being used for Agricultural uses or otherwise for the keeping of animals; and (3) does not occupy more than 50% of any residential yard; or (4) is for back stops, sports fields, or sport court fencing within a public or private park. b. No fencing that parallels existing fencing shall be permitted within an existing fenced yard. Exceptions: interior fencing to enclose chickens, bees, or other livestock as otherwise specifically permitted under this Code, and any fencing of three feet or less in height within an existing fenced yard.	**N/A.**	*No fencing proposed*

Double frontages: where lots have frontages onto more than one street, that area designated by the property owner as the rear yard may have a solid or view obstructing fence, wall, or hedge not exceeding 6 feet in height. Where the double frontage lot is also a corner lot (3 frontages), clear sight across corner property shall be required and enforced. See Section 19.06.11, Clear Sight Triangles.	**N/A.**	*No fencing proposed*
Non-residential and Multi-family: fencing and other screening materials for multifamily, residential, commercial, or industrial projects must receive approval by the Land Use Authority through the Site Plan review process. See Chapter 19.13 for Site Plan review requirements. In addition, the following criteria shall be applied: a. compatibility with fences of surrounding uses; b. quality of proposed materials; c. aesthetics of proposed materials; d. requirements of applicable development agreements; e. intensity of existing surrounding uses; and f. applicable conditions of approval.	**N/A.**	*No fencing proposed*
Amount of Required Landscaping		
Portions of the property that are not developed with structures, rights of ways, or parking areas shall be required to be landscaped per the definition of Landscaping in Section 19.02 in all land use zones.	**Complies.**	*See sheet LP-100*
At least 50% of the landscaped area shall be covered with live vegetation at maturity, including shrubs, grasses, flowers, tree and shrub canopies and other live vegetation. The percentage may be reduced to 40% in areas where bark mulch, wood or plant fiber mulch, or rubber mulch is used instead of rock mulch.	**Complies.**	*60% coverage*

Landscape Amount			
Category To Be Reviewed	**Regulation**	**Compliance**	**Findings**
Total Square Footage	57,499		
Required Landscaping	11,500	**Complies**	*19,993 sf landscaping*
Required Deciduous Trees	6	**Complies**	*9 proposed*
Required Evergreen Trees	4	**Complies**	*22 proposed*
Required Shrubs	22	**Complies**	*268 proposed*
Drought Tolerant Plants	16	**Complies**	*All are drought tolerant*

19.09 Off Street Parking		
General Provisions		
Regulation	**Compliance**	**Findings**
Materials: Parking areas shall consist of concrete, asphalt, or other impervious materials approved in the City's adopted construction standards	**Complies.**	*Asphalt*
Parking Area Access: Common Access: Parking areas for one or more structures may have a common access so long as the requirements of all City ordinances, regulations, and standards are met. The determination of the locations for a common access shall be based upon the geometry, road alignment, and traffic volumes of the accessed road per the Standard Technical Specifications and Drawings.	**Complies.**	*See sheet C1.0*
Sidewalk Crossing: All non-residential structures are required to provide parking areas where automobiles will not back across a sidewalk to gain access onto a public or private street.	**Complies.**	*No spaces that require backing up over sidewalks*

<table>
<tr><td>Cross Access: Adjacent non-residential development shall stub for cross-access. Developers must provide the City with documentation of cross-access easements with adjacent development.</td><td>Complies.</td><td>See cross-access easement</td></tr>
<tr><td>Lighting: Parking areas shall have adequate lighting to ensure the safe circulation of automobiles and pedestrians. Lighting shall be shielded and directed downward.</td><td>Complies.</td><td>See sheet ES001</td></tr>
<tr><td>Location of Parking Areas: Required off-street parking areas for non-residential uses shall be placed walking path of travel distance to the nearest customer entrance from the correlating non-residential use and individual tenant space as outlined in the table below. Unenclosed parking for residential areas shall not be provided in rear yards, unless said yard abuts an alley-type access or is fenced with privacy fencing.
<table>
<tr><th>Size of Non-Residential Use and Individual Tenant Space</th><th>Walking Path of Travel Distance to the Nearest Customer Entrances</th></tr>
<tr><td>Up to 1,500 square feet</td><td>150’</td></tr>
<tr><td>1,501 to 5,000 square feet</td><td>200’</td></tr>
<tr><td>5,001 to 10,000 square feet</td><td>250’</td></tr>
<tr><td>10,001 to 25,000 square feet</td><td>300’</td></tr>
<tr><td>25,001 to 50,000 square feet</td><td>350’</td></tr>
<tr><td>50,001 to 75,000 square feet</td><td>400’</td></tr>
<tr><td>75,001 to 100,000 square feet</td><td>450’</td></tr>
<tr><td>100,001 to 125,000 square feet</td><td>500’</td></tr>
<tr><td>Over 125,000 square feet</td><td>600’</td></tr>
</table>
Exception: To promote walkability, Mixed-use and Mixed Waterfront zones, and the Town Center Overlay (identified in the General Plan), shall be allowed to place parking garages and parking lots on the edge of shopping areas.
i. The walking path travel distance from a business’ main entrance shall not apply to these areas.</td><td>Complies.</td><td>All parking spaces well under 300’ from main entrances</td></tr>
<tr><td>Curb Cuts and Shared Parking: In most cases, shared parking areas shall share ingress and egress. This requirement may be waived when the City Engineer believes that shared accesses are not feasible. In reviewing the site plans for the shared parking areas, the City Engineer shall evaluate the need for limited access, appropriate number of curb cuts, shared driveways, or other facilities that will result in a safer, more efficient parking and circulation pattern.</td><td>Complies.</td><td>See sheet C1.0</td></tr>
<tr><td>Parking plans shall show the following: the required number of stalls and aisles scaled to the correct dimensions; the correct number of ADA accessible parking spaces; storm water drainage capabilities; lighting; landscaping and irrigation; and pedestrian walkways.</td><td>Complies.</td><td>All provided. See sheet C1.0 and ES001</td></tr>
<tr><td>Provide accessible parking as required by Americans with Disabilities Act, see https://www.ada.gov/topics/parking/ https://adata.org/factsheet/parking</td><td>Complies.</td><td>2 ADA stalls provided (instead of van parking space, 8-foot load/unload space provided which meets the requirement)</td></tr>
<tr><td>Certain types of medical facilities need more accessible stalls, see link.</td><td>N/A.</td><td></td></tr>
<tr><td>Accessible stalls shall be as close to the primary entrance as possible.</td><td>Complies.</td><td>As close to businesses to the north and the slightest grade</td></tr>
<tr><td colspan="3">Parking Requirements and Shared Parking</td></tr>
<tr><td>Available on-street parking shall not be counted towards meeting the required parking stalls.</td><td>N/A.</td><td>None proposed in parking stall count</td></tr>
<tr><td>When a parking requirement is based upon square footage, the assessed parking shall be based upon gross square footage of the building or use unless otherwise specified in the requirement.</td><td>Complies.</td><td>Southern unit is take-out restaurant (5/1000 sf) and the rest of the units are retail (4/1000 sf)</td></tr>
</table>

When parking requirements are based upon the number of employees, parking calculations shall use the largest number of employees who work at any one shift. Where shift changes may cause substantial overcrowding of parking facilities, additional stalls may be required.	**N/A.**	
When a development contains multiple uses, more than one parking requirement may be applied.	**Complies.**	*Marked all as retail although the southernmost unit has the drive-thru and was being previously proposed as a takeout restaurant.*
Any fraction obtained when calculating the parking requirement shall be rounded up to the next whole number to determine the required number of parking stalls.	**Complies.**	*Rounded up from 50.42 to 51 stalls required*
Where no comparative land use standard for parking is found in Section 19.09.10, Required Minimum Parking, the Land Use Authority for the related development shall determine an appropriate requirement using the following criteria: (see code)		
Any information provided by the developer relative to trip generation, hours of operation, shared parking, peak demands, or other information relative to parking shall be considered when evaluating parking needs.	**Shall Comply.**	*Will be used in decision if parking requirement deviation is required and approved by Land Use Authority.*
Parking Deviations. Parking requirements may deviate from the standards contained in Section 19.09.10, Required Minimum Parking, when the Land Use Authority determines that the deviation meets the intent of this Chapter. Reductions may not exceed 25% of the parking requirements and shall be based on the following criteria: 1. the intensity of the proposed use; 2. times of operation and use; 3. whether the hours or days of operation are staggered thereby reducing the need for the full amount of required parking; 4. whether there is shared parking agreement in accordance with Section 19.09.05.10 below; 5. the number of employees; 6. the number of customers and patrons; 7. trip generation; and 8. peak demands.	**Shall Comply.**	*Will be used in decision if parking requirement deviation is required and approved by Land Use Authority.*
Shared Parking. Up to 25% of required parking may be shared with an adjacent use upon approval by the Land Use Authority. The developer must provide: a. an agreement granting shared parking or mutual access to the entire parking lot; and b. b. peak demand data by a professional traffic engineer showing that shared parking will accommodate the uses.	**Shall Comply.**	*Will be used in decision if parking requirement deviation is required and approved by Land Use Authority.*
Landscaping in Parking Areas		
All parking areas (not including a driveway for an individual dwelling) for non-residential or multi-family residential uses that are adjacent to public streets shall have landscaped strips of not less than 10' in width placed between the sidewalk and the parking areas, containing a berm, hedge, or screen wall with a minimum height of 3' to minimize intrusion of lighting from headlights and other lighting on surrounding property. Trees, both deciduous and evergreen, shall be placed in the strip with spacing of no more than 30' between trees except in the clear sight triangle, and except where located beneath powerlines. The standards of section 19.06.06, Planting Standards and Design Requirements, shall apply for the minimum size of vegetation. Within regional parks this requirement may be met through the use of intermittent planter beds rather than a berm, hedge, or screen wall; trees	**Complies.**	*Evergreen hedges used along all areas where headlights would spill onto neighboring roads.*

or shrubs may be clustered in the planter beds where necessary to shield light spillage.		
All landscaped areas abutting any paved surface shall be curbed (not including a driveway for an individual dwelling). Boundary landscaping around the perimeter of the parking areas shall be separated by a concrete curb 6" higher than the parking surface.	**Complies.**	*See sheets LP-100 and LP-501*
Clear Sight Triangles must be followed.	**Complies.**	*See sheet LP-100 and C1.0*
All landscaped parking areas shall consist of trees, shrubs, and groundcover. Areas not occupied by structures, hard surfaces, vehicular driveways, or pedestrian walkways shall be landscaped and maintained. All landscaped areas shall have an irrigation system.	**Complies.**	*See sheet LP-100*
On single rows of parking or where parking abuts a sidewalk, there shall be one 18' x 9' foot landscaped island a minimum of every 10 stalls. Islands on a single parking row shall have a minimum of one tree per island. i. Exception: Landscaped islands are not required in single rows of parking that abut or are no farther than 6' from a landscaped area containing an equal or greater number of trees as would have been provided in islands, in addition to trees required for the landscaped area. Such trees shall be located within 9' of the edge of parking area, and shall have a canopy width that, at maturity, will extend into the parking area.	**Complies.**	*Additional tree added on the east side.*
Landscaped islands at the ends of parking rows shall be placed and shaped in such a manner as to help direct traffic through the parking area.	**Complies.**	*See sheet LP-100*
Required Minimum Parking		
See table in 19.09 *Retail: 4/1000 - 10,137.69 sf of retail (41 stalls required)* *Take-out restaurant (below 2000 sf): 5/1000 - 1900.15 sf of take-out restaurant (10 stalls required)*	**Shall Comply.**	*Size of south unit is sufficient to make it a take-out restaurant. The rest of the building is retail.* *51 total needed, 47 provided (44 stalls plus 3 parking stalls for drive-thru)* ***If interconnection exemption is approved by City Council, all required parking stalls will be provided.*** ***If interconnection exemption not approved and shared parking agreement were approved for at least 4 stalls, this would meet code.***
Drive-thru Requirements		
Each stacking space shall accommodate one vehicle and be no less than 20 feet in length from the point of service.	**Complies.**	
All drive-thru facilities must provide at a minimum 3 stacking spaces (60') per lane (up to 3 stacking spaces may count towards required parking).	**Complies.**	*About 13 stacking spaces provided*
Bank or financial institution (including ATMs): minimum of 3 stacking spaces per lane. Food or beverage establishment: minimum of 5 stacking spaces.	**Complies.**	*None proposed as of right now but if one is added, there are about 13 stacking spaces provided*
Entrances and exits of drive-thru lanes shall be clearly marked to designate the direction of traffic flow.	**Complies.**	*See notes on drawing on sheet C1.0 by entrance and exit*

A Final Traffic report shall be provided and approved to demonstrate how all queuing shall be contained within the property, business, or use and not affect the surrounding roads. Stacking shall be designed so that it does not have the potential to overflow onto the street or adjacent property, business, or use.	**Complies.**	*See Traffic Impact Study*
Landscaping: A three foot (3') wide raised median or planter between the drive-thru aisle and the parking area shall be provided.	**Complies.**	*See sheet C1.0*
All drive-thru lanes adjacent to public streets shall have landscaped strips of not less than 10 feet in width placed between the sidewalk and the drive-thru lanes that contain a berm, hedge, or screen wall with a minimum height of three feet to minimize intrusion of lighting from headlights and other lighting from surrounding properties.	**Complies.**	*Evergreen hedges used along all areas where headlights would spill onto neighboring roads.*

Dimensions for Parking Stalls & Aisle				
	Stall Width	Stall Length	Aisle Width (one-way traffic)	Aisle Width (two-way traffic)
90° Parking				
Required	9'	18'	24'	24'
Provided	9’	18’	24+’	24+’

19.11 Lighting		
General Standards		
Regulation	**Compliance**	**Findings**
Material: All Lighting Fixtures and assemblies shall be metal.	**Complies.**	*See note G on sheet ES001*
Base: All lighting poles shall have a 16” decorative base.	**Complies.**	*See specifications CB0101 on sheet ES002*
Type: All lighting fixtures shall be of the full cutoff variety. Shoebox fixtures are prohibited.	**Complies.**	*See note C on sheet ES001*
Angle: Shall be directed downward.	**Complies.**	*See lighting on sheet ES002 (all directed downward)*
Lamp: Bulbs may not exceed 4000k.	**Complies.**	*See note C on sheet ES001*
Drawings: Design and location of fixtures shall be specified on the plans.	**Complies.**	*See sheets ES001 and ES002*
Flags: The Unites States flag and the state flag shall be permitted to be illuminated from dusk till dawn. All other flags shall not be illuminated past 11:00 p.m. Flag lighting sources shall not exceed 10,000 lumens per flagpole. The light source shall have a beam spread no greater than necessary to illuminate the flag.	**N/A.**	*None proposed*
Prohibited Lighting: Searchlights, strobe lights and any laser source light or any similar high intensity light.	**N/A.**	*None proposed*
Descriptions: Descriptions of the illuminating devices, fixtures, lamp supports, and other devices. This description may include, but is not limited to, manufacturers’ specifications, drawings, and sections.	**Complies.**	*See sheets ES001 and ES002*
Nonresidential Lighting		
All wall-mounted fixtures shall not be mounted above 16’. The exception shall be those instances where there is a second story access directly from the outdoors, and under-eave lighting. Wall-mounted lighting shall be only for the illumination of vertical surfaces such as building facades and signs, and shall not cast illumination beyond the surface being illuminated.	**Complies.**	*See note D on sheet ES001*

Intermittent lighting must be of the "motion sensor" type that stays on for a period of time not to exceed 10 minutes and has a sensitivity setting that allows the lighting fixture to be activated only when motion is detected on the site.	**N/A.**	*None proposed*
All trespass lighting shall not exceed 1.0 foot-candles measured at the property line, except that trespass lighting into residential development shall not exceed 0.1 foot-candles measured at the property line.	**Complies.**	*See sheet ES001*
All freestanding lighting fixtures and assemblies shall be black. Regional Parks may include theme lighting fixtures in colors other than black. The color shall enhance the theme of the park and shall be approved during the site plan review process.	**Complies.**	*See note F on sheet ES001*
Pole design shall include an arm and bell shade. Regional Parks may include theme lighting fixtures that do not include an arm and bell shade. The design shall enhance the theme of the park and shall be approved during the site plan review process.	**Complies.**	*See detail 2 on sheet ES001*
Parking lot poles shall be limited to a height of 16' when in or within 200' of a residential zone; all other locations shall have a height limit of 20'.	**Complies.**	*See note E on sheet ES001*
One hour after closing or by 11:00 pm, whichever is earlier, businesses must turn off at least 50% of building lighting and lighting fixtures in surface parking lots and on top decks of parking structures; however, those lighting fixtures turned off may be set to function utilizing a motion detector system. Lights may be turned back on one half hour prior to the first employee shift.	**Complies.**	*See notes in LTG CTRL SEQUENCE OF OPERATION section on sheet ES001*
Walkway Lighting		
Lighting of all pedestrian pathways is recommended.	**Complies.**	*See sheet ES001*
All pathway, walkway, and sidewalk lighting fixtures shall be mounted at a height not to exceed 10'. i. Themed walkway lighting within Regional Parks shall not exceed a height of 25'. Such lighting within 200' of residential development shall not exceed 16'.	**Complies.**	*See note in General Notes on sheet ES001*
Bollard lighting shall be limited to a height of 4'.	**N/A.**	*None proposed*
Lighting Plan		
Plans indicating the location and types of illuminating devices on the premises.	**Complies.**	*See sheets ES001 and ES002*
Descriptions of the illuminating devices, fixtures, lamp supports, and other devices. This description may include, but is not limited to, manufacturers' specifications, drawings, and sections.	**Complies.**	*See sheets ES001 and ES002*
Photometric sheet showing measurement of light intensity across the site and onto adjacent property in terms of candela, lumens, and foot-candles.	**Complies.**	*See sheets ES001 and ES002*

19.12 Subdivision		
Street Connectivity		
Connectivity Standards. All new subdivisions shall provide connectivity with adjacent developed and undeveloped properties and with adjacent open space, amenities, parks, and natural areas. All new subdivisions are required to: Extend streets, sidewalks, and trails at least once in each direction to adjacent properties; and	**Complies.**	*Trail is existing along Stagecoach Drive*
Connect to all existing vehicular and pedestrian access points on adjacent developed properties; and	**Complies.**	*Vehicle connections to the north, east, and west*

Install and connect public trails into all adjacent public open space, parks, and trails, which includes but is not limited to connections to trail corridors with public access easements; and	**N/A.**	*No public open space*
Exceptions: Connectivity Standards may be reduced by the Land Use Authority for Preliminary Plats, Final Plats, or Site Plans, as applicable, if the applicant provides clear and convincing evidence that it is impracticable to achieve due to the following: a. Right-of-way, intersection, or access spacing cannot meet the Standard Technical Specifications and Drawings for City of Saratoga Springs; or	**N/A.**	
ii. The property is adjacent to the Jordan River, Utah Lake, delineated wetlands, slopes exceeding 30%, drainage channels, natural features, open space, or waterways that do not allow for a crossing or an access; or	**Shall Comply.**	*Grade at northern property line prior to any access will be around 48% where northern connection can go. Proposed northern access in site plan submittal is 20.5% to 23.1% grade while maximum allowed for road is 12% (10% preferred maximum) and cannot exceed 8% for emergency vehicles. This seems to meet the exception criteria as long as approved by City Council.*
iii. The property is adjacent to fully developed property that does not have any vehicular or pedestrian access points.	**N/A.**	
iv. Exceptions shall be construed narrowly by the Land Use Authority.	**Shall Comply.**	*The City Council will need to make a determination on this.*

19.13 Process	
Regulation	**Findings**
Neighborhood Meeting. Required before Planning Commission for any multi-family or non-residential development proposal adjacent to developed property in a residential zone. **Inform the applicant when this is required.**	*N/A*
Notice/Land Use Authority.	*Yes/City Council*
Master Development Agreement. A Master Development Agreement shall be required of any development that is in excess of 20 acres in size if non-residential or mixed-use or developments in excess of 160 acres in size if residential. A Master Development Agreement may also be required pursuant to this Title 19 including Chapter 19.26 or may be desirable or necessary pursuant to the exercise of the City Council's legislative discretion in the fact scenarios listed in Section 19.13.08.	
Phasing Improvements.	*N/A*
Payment of Lieu of Open Space.	Amount of $: 0
Piping of Canals	For residential projects, piping of canals per canal company specifications if a canal or canal easement that area is adjacent to or within the area of the proposed residential project, unless the canal company or Bureau of Reclamation does not allow piping. Non-residential projects shall install secure fencing adjacent to canal

	easements or canals per canal company specifications to prevent entry from the non-residential project onto the canal or canal easement.
Burial of Overhead Utility Lines	See Section 19.13.10

19.14 Site Plan Review		
Regulation	**Compliance**	**Findings**
Approval Required: Site Plan approval shall be required for all developments which contain the following uses, together with any others for which it is required elsewhere in these Ordinances: 1. Any industrial use; 2. Any commercial use; 3. Any institutional use; 4. Two-Family Structures and Three-Family Structures; and 5. A multi-family residential development.	**Complies.**	*Commercial use*
Site Plan Standards: The entire parcel area shall be built upon, landscaped, or paved in accordance with the zone's open space and parking requirements.	**Complies.**	*Entire site will be used*
Piping of Irrigation Ditches: All existing irrigation canals and ditches which are located on the site or straddle a site property line shall be piped with a sufficient size pipe and shall be approved by the City Engineer.	**N/A.**	*No irrigation ditches on lot*
Nuisances: All commercial uses shall be free from objectionable odors, noises, hazards, or other nuisances.	**Complies.**	*None proposed*
Ownership Affidavit: A statement of ownership and control of the subject property and a statement describing the nature of the intended use.	**Complies.**	*See Owner's Acknowledgement page*
Vicinity Map: A general location map indicating the approximate location of the subject parcel.	**Complies.**	*See cover page of civil plans*
Context plan: A context plan shall include the existing features within 200 feet of the proposed Site Plan property line. Existing features include, but are not limited to, buildings, ingress and egress points, landscaping areas, pedestrian paths, and property names.	**Complies.**	*See sheet C0.1*
Site Analysis: A site analysis is a plan view drawing demonstrating land constraints and existing features. Existing features may consist of the presence of boulders, existing man-made features, significant trees, canals or ditches, access points or public rights-of-way, and existing conditions within 200 feet of the property line.	**Complies.**	*See sheet C0.1*
Survey: A survey prepared and stamped by a Utah registered land surveyor listing the metes and bounds legal description and the gross acreage within the subject parcel.	**Complies.**	*See provided survey*
Compliance statement: A statement indicating how the proposed development complies with the City's adopted Land Use Element of the General Plan.	**Complies.**	*See plans on file with Planning*
Final Construction Drawings containing, at a minimum, all items specified in the City's "Standard Technical Specification and Drawings" manual. Applicant shall provide three full-size 24" x 36" copies and five 11 x 17 inch reductions as required on the application form, along with digital copies as outlined below. Additional copies may be required prior to adding the application to the Planning Commission agenda. Final Construction Drawings for a Site Plan is hereby required and shall be prepared and stamped by licensed or certified professionals including architects, landscape architects, land planners, engineers, surveyors, transportation engineers, or other professionals deemed necessary by the Planning Director. The City	**Complies.**	*See plans on file with Planning*

may require plans prepared by any or all of the above-noted professionals. A Site Plan application shall also contain the following: i. locations, dimensions, floor plans, uses and heights of all proposed buildings and structures, including overhangs, porches, stairwells, and balconies, and the locations of all structures on adjoining properties; ii. access points, provisions for vehicular and pedestrian circulation on and off site, interconnection to adjacent sites, dimensions of such access and circulation, and pedestrian paths within 200 feet of the property boundary; iii. acceleration and deceleration lanes, and dimensions thereof, if required; iv. off-street parking and loading areas complying with the City's off-street parking requirements contained in Chapter 19.09 of this Title; v. proposed outdoor display areas; vi. screening and buffering provisions, including types and heights of existing and proposed buffering and fencing elements; vii. location and treatment of refuse collection areas, storage areas, mechanical equipment, and external structures; viii. location, type, and size of all business and on-site circulation signage; ix. tabulation of square footage devoted to various land uses, ground coverage by structures, and other impervious surfaces; x. type of construction of all structures, presence or absence of fire sprinkling, and location of existing and proposed fire hydrants; xi. Established Grade of building area.		
Final Hydraulic and Hydrological storm drainage report and calculations. Location of all existing and proposed secondary irrigation systems, both on site and on adjacent properties, including ditches, pipes, and culverts;	**N/A.**	*Reviewed by Engineering*
Final Traffic report: Said report shall comply with the standards outlined in the City's adopted Transportation Master Plan and shall include, but not be limited to, the following: i. an analysis of the average daily trips generated by the proposed project; ii. an analysis of the distribution of trips on City street systems; iii. a description of the type of traffic generated; and iv. recommendations on what mitigation measures should be implemented with the project to maintain a level of service for existing and proposed residents acceptable to the City.	**Complies.**	*See Traffic Impact Study*
Data table including: i. total project area ii. total number of lots, dwellings, and buildings iii. square footage of proposed building footprints and, if multiple stories, square footage by floor iv. number of proposed garage parking spaces v. number of proposed surface parking spaces vi. percentage of buildable land vii. acreage of sensitive lands and what percent sensitive lands comprise of total project area and of open space area viii. area and percentage of open space or landscaping ix. area to be dedicated as right-of-way (public and private)	**Complies.**	*See data table on cover page to civil drawings*

x. net density of dwellings by acre (sensitive lands must be subtracted from base acreage). xi. number of off-street parking spaces (e.g., number of proposed garage parking spaces, number of proposed surface parking spaces, etc.)		
Landscaping Plan: A landscaping plan, prepared and stamped by a licensed landscape architect, indicating the location, spacing, types, and sizes of landscaping elements and existing trees, and showing compliance with the City's off-street parking requirements, the City's design guidelines and policies, and the requirements of the appropriate zone.	**Complies.**	*Jeremy Ainsworth*
Lighting Plan: A lighting plan indicating the illumination of all interior areas and immediately adjoining streets showing the location, candle power, and type of lighting proposed, and in conformance with the City's lighting standards. An individual photometric plan is also required.	**Complies.**	*See sheet ES001*
Elevations: The elevations of all proposed buildings, fences, and other structures viewed from all sides indicating height of structures, the average finished grade of the site at the foundation area of all structures, percentage of building materials proposed, and color of all materials. A board showing building colors and materials is required.	**Complies.**	*See Elevations sheets*
Signage Plan: An overall signage plan shall be approved during the Site Plan approval process. All information to be provided for the sign approval shall be submitted concurrent with Site Plan application materials, consistent with the requirements in Section 19.18.	**Complies.**	*See elevations*
Fee: A fee set by resolution of the City Council shall accompany the application for any Site Plan review.	**Complies.**	*Fee paid at application*
Considerations Relating to Traffic Safety and Traffic Congestion: i. the effect of the site development plan on traffic conditions on adjacent street systems; ii. the layout of site with respect to location and dimensions of vehicular and pedestrian entrances, exits, driveways, and walkways; iii. the arrangement and adequacy of off-street parking facilities to prevent traffic congestion and compliance with the provisions of Chapter 19.09, off-street parking requirements; iv. the location, arrangement, and dimensions of truck loading and unloading facilities; v. the circulation patterns within the boundaries of the development; and vi. the surfacing and lighting of off-street parking facilities.	**Complies.**	*See plans on file with Planning*
Considerations Relating to Outdoor Advertising: Outdoor advertising shall comply with the provisions of Chapter 19.18.	**Complies.**	*Signage addressed in elevations*
Consideration Relating to Landscaping: i. the location, height, and materials of walls, fences, hedges, and screen plantings to ensure harmony with adjacent development, to provide buffer areas, or to conceal storage areas, utility installations, or other unsightly development; ii. the requirements of Chapter 19.06; iii. the planting of ground cover or other surfaces to prevent dust and erosion; and iv. the unnecessary destruction of existing healthy trees.	**Complies.**	*Evergreen hedges used along all areas where headlights would spill onto neighboring roads.*
Considerations Relating to Buildings and Site Layout: i. the general silhouette and mass, including location on the site, elevations, and relation to natural plan coverage, all in relationship to the character of the neighborhood;	**Complies.**	*See site plan and elevations*

ii. the exterior design in relation to adjoining structures in height, bulk, and area openings, breaks in facade facing the street, line and pitch of roofs, and the arrangement of structures on the parcel; iii. compliance with the City's Architectural design standards.		
The proposed project shall comply with the City's adopted Land Use Element of the General Plan, Land Use Ordinance, land development regulations, architectural guidelines, and all other adopted ordinances, regulations, policies, and standards.	**Shall Comply.**	*Some corrections needed if exception to interconnection not approved.* ***If exception approved, this application meets all code criteria.***
Trails Master Plan: Shows required trails	**Complies.**	*Trail is the sidewalk on the east*

19.16 Site and Architectural Design Standards

General Site Design Standards

Regulation	Compliance	Findings
Submittal Requirements. Scaled building elevations and perspectives (3D renderings) shall be submitted that indicate all colors, styles, materials, and other proposed building treatments. Photorealistic material and color boards shall also be submitted with the items required accompanying development application. An RYB Hexadecimal Color Code number shall be provided for all applicable elevation colors; however, natural materials shall be exempt and shall instead provide a photographic image of the proposed material.	**Complies.**	*See elevations*
Pedestrian Connectivity: All buildings and sites shall be designed to be pedestrian friendly by the use of connecting walkways.	**Complies.**	*Pedestrian connection to property to the north is provided by the pathway going by the trash enclosure at northeast end of property and down to sidewalk along Stagecoach Drive*
Safe pedestrian connections shall be provided to link between buildings with the public rights-of-way, as well as links within a development. Sidewalks shall also be provided to link the building to pedestrian facilities adjacent to the property, and when feasible between developments.	**Complies.**	*See site plan*
All developments shall provide pedestrian connections that lead to the building entrances of adjacent non-residential and residential sites and shall stub to adjacent undeveloped property to allow for future connections.	**Complies.**	*See site plan*
All pedestrian connections shall be shown on the related site plan or plat.	**Complies.**	*See site plan*
Parking Areas: On-site parking shall be located primarily to the sides or rear of the building. Variations may be approved by the Land Use Authority, subject to the following criteria: i. The use is a big box with outparcels or smaller commercial buildings helping to screen parking, or ii. At least 50% of the parking is located to the side or rear of the building, or iii. A safety issue is created by locating parking to the side or rear as verified and documented by the Saratoga Springs Police Department. For example, the parking will be entirely concealed from view by existing walls or buildings, or iv. That portion of development that lies within the Waterfront Buffer Overlay, or v. The development is Office, Warehouse/Flex space and when loading docks are not adjacent to a public right-of-way.	**Complies.**	*See site plan*

Exception: when a lot with Office, Warehouse/Flex space is adjacent to more than one public street, loading docks may face the lower classification of the streets.		
Parking lots shall be designed with a hierarchy of circulation: major access drives with no parking; major circulation drives with little or no parking; and then parking aisles for direct access to parking spaces.	**Complies.**	*See sheet C1.0*
Parking lots adjacent to, and visible from, public streets shall be screened from view through the use of earth berms, screen walls, landscape hedges or combinations thereof with a minimum height of 3' as measured from the parking surface. Within regional parks this requirement may be met through the use of intermittent planter beds rather than a berm, hedge, or screen wall; trees and shrubs may be clustered in the planter beds where necessary to avoid light spillage.	**Complies.**	*Evergreen hedges used along all areas where headlights would spill onto neighboring roads.*
Trash Enclosures, Storage Areas, and External Structures: Landscaping, fencing, berms, or other devices integral to overall site and building design shall screen trash enclosures, storage areas, and other external structures.		
Service yards, refuse and waste-removal areas, loading docks, truck parking areas and other utility areas shall be screened from view by the use of a combination of walls, fences, and dense planting. Screening shall block views to these areas from on-site as well as from public rights of way and adjacent properties. This does not apply to Municipal Buildings.	**Complies.**	*See Sheet LP-100*
All trash dumpsters shall be provided with solid enclosures. b. Enclosures shall be composed of 6' high solid masonry or decorative precast concrete walls, with opaque gates and self-latching mechanisms to keep gates closed when not in use. Bollards are required at the front of the masonry walls to protect the enclosure from trash collection vehicles. Gates shall be made of opaque metal for durability. Chain-link gates with or without opaque slats are not acceptable. Colors and materials shall be consistent with the main building or use.	**Complies.**	*See trash enclosure elevations on sheet A103*
Where trash enclosures, storage areas, or other external structures are adjacent to parking areas, a 3' landscaped buffer shall be provided that does not impede access into and out of vehicles.	**Complies.**	*See sheet LP-100*
These areas shall be well maintained and oriented away from public view. The consolidation of trash areas between buildings is encouraged. The use of modern disposal and recycling techniques is encouraged. This section shall not apply to community or public recycling bins or drop boxes; however, the location shall be determined by city Staff in accordance with the standards herein.	**Complies.**	*Located in the northeast corner but back away from the road a bit*
Utility Boxes: Dense vegetative buffers which include an evergreen variety of plant materials shall be placed where appropriate to screen all utility boxes and pedestals in order to remain attractive during the winter months.	**Complies.**	*See Landscape Plan*
Interconnection. Interconnection shall occur via pedestrian and vehicular connections. All parking and other vehicular use areas shall be interconnected with, or stubbed to, all adjacent non-residential developed and undeveloped properties, as designated on the land use map or the zoning map, in order to allow maximum off-street vehicular circulation. Walkways and trails shall be connected to adjacent sites and stubbed for future development. All residential site plans shall meet 19.12 Connectivity Standards.	**Complies.**	*Connection to the north provided by adding pathway by trash enclosure down to sidewalk*
Site Design Standards: Non-Residential Development		

Uses Within Buildings: All uses established in any commercial, office warehouse, business park, or industrial zone shall be conducted entirely within a fully enclosed approved building except those uses deemed by the City Council to be customarily and appropriately conducted in the open. Uses which qualify for this exception include vegetation nurseries, home improvement centers with lumber, outdoor cafes, outdoor retail display, car wash vacuums, auto dealerships, and similar uses.	**Complies.**	*Retail and take-out restaurant uses proposed that will be inside the buildings*
Access Requirements: a. Each roadway shall not be more than 40' in width, measured at right angles to the center line of the driveway except as increased by permissible curb return radii; and b. the entire flare of any return radii shall fall within the right-of-way.	**Complies.**	*26'*
Off-Street Truck Loading Space: Every structure involving the receipt or distribution by vehicles of materials or merchandise shall provide and maintain on the building's lot adequate space for standing, loading, and unloading of the vehicles in order to avoid undue interference with public use of streets, alleys, required parking stalls, or accessible stalls.	**Complies.**	*See north end by driveway entrance on sheet C1.0*
Screening of Storage & Loading Areas: To alleviate the unsightly appearance of loading facilities, these areas shall not be located on the side(s) of the building facing the public street(s). Such facilities shall be located interior to the site. This does not apply to Municipal Buildings	**N/A.**	
Trash areas shall be designed to include the screening of large items (e.g. skids and pallets) as well as the trash bin(s) that are needed for the business (unless storage is otherwise accommodated behind required screened storage areas).	**Complies.**	*See elevations for details*
Building Buffer: No building shall be closer than 5' from any private road, driveway, or parking space. The intent of this requirement is to provide for building foundation landscaping and to provide protection to the building. Exceptions may be made for any part of the building that may contain an approved drive-up window.	**Complies.**	*Not even close to the street*
General Architectural Design Standards		
General standards do not apply one-family and two-family dwellings unless governed under a DA.		
Building Articulation for Buildings Under 20,000 Square Feet (footprint): Building elevations exceeding 40' in length shall incorporate a minimum of one horizontal elevation shift or combination of vertical and horizontal elevation shifts that together equal at least five feet, stepping portions of the elevation to create shadow lines and changes in volumetric spaces, and a minimum of two of the following, all spaced at intervals of 20' of horizontal width: i. Addition of horizontal and vertical divisions by use of textures or materials. ii. Primary material change (i.e. change in material type, size, or color). iii. Addition of projections such as balconies, cornices, covered entrances, porte-cocheres, trellis', pergolas, arcades, and colonnades. Such trellis' and awnings extend outward from the underlying wall surface at least 36". iv. Variation in the rooflines by use of dormer windows, overhangs, arches, stepped roofs at a minimum of 12", gables or other similar devices.	**Complies.**	*See elevations*
Non-Residential Architectural Design Standards		

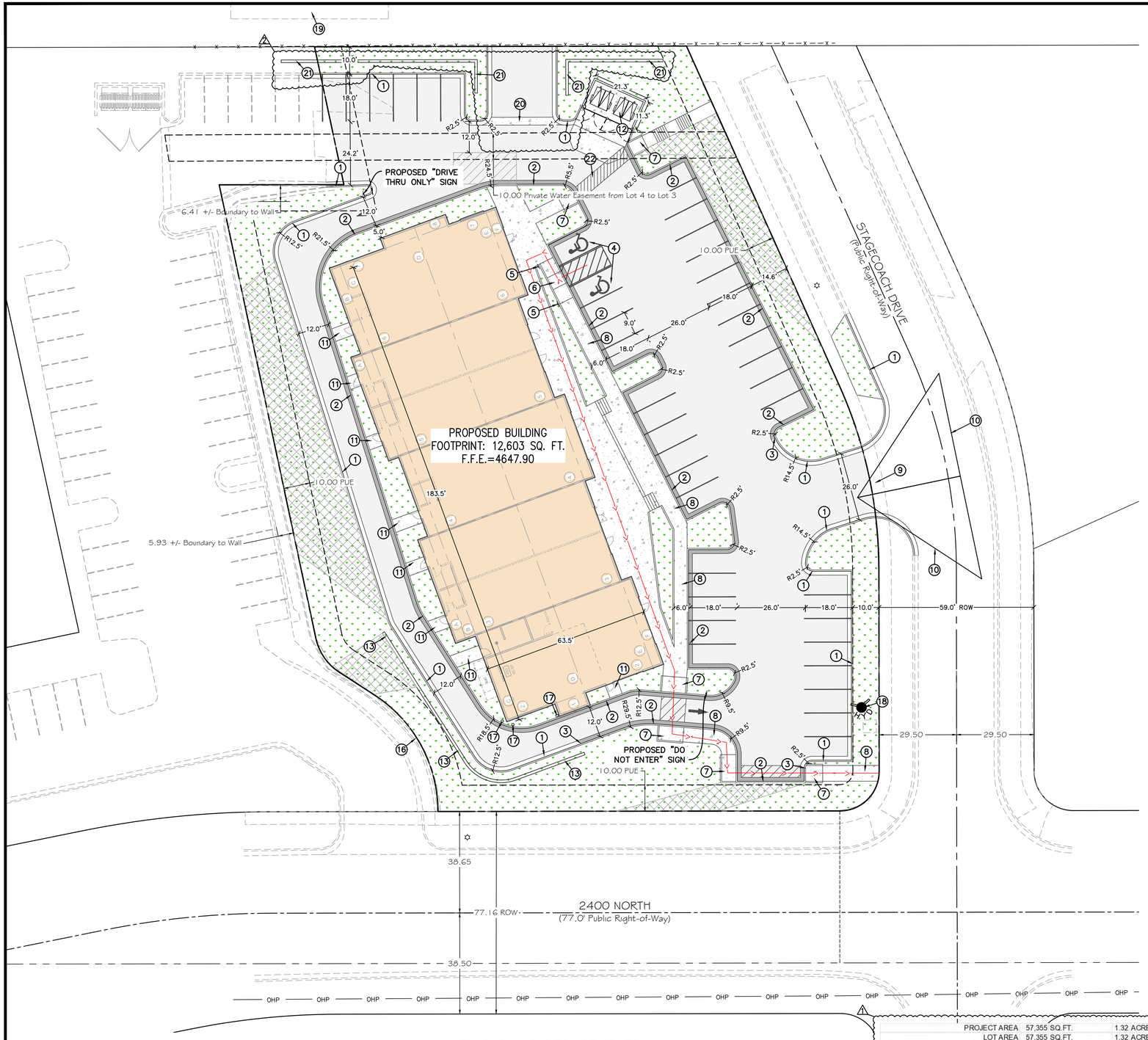
Four-Sided Architecture: All sides of a building that are open to public view (including views from adjacent residential dwellings or probable location of residential dwellings) shall receive equal architectural design consideration as the building front.	**Complies.**	*See elevations*
Color and Materials: Exterior Building Materials shall be considered any materials that make up the exterior envelope of the building and shall be limited to no more than 4 and no less than 2 types of materials per building, window and door openings excluded.	**Complies.**	*Three colors and three materials proposed. Black aluminum accent also proposed but doesn't count towards material percentages.*
Color of exterior building materials (excluding accent colors) shall be limited to no more than 4 and no less than 2 major colors per building. The roof shall not be considered a material or color.	**Complies.**	*Three colors and three materials proposed. Black aluminum accent also proposed but doesn't count towards material percentages.*
Bright colors, such as neon or fluorescent colors, bright orange or yellow, and primary colors, are only permitted as accent colors.	**Complies.**	*None proposed*
No more than 75% of any building elevation shall consist of any one material or color. No more than 75% of any building elevation shall consist of any 1 color. The roof shall not be considered a material or color. i. Windows, doors, and accent materials or colors shall be excluded from the percentage of calculations for overall materials and colors for each elevation. ii. No more than 50% of any building elevation shall consist of CMU, except in the Office Warehouse and Industrial zones, or iii. Office, Warehouse, Flex buildings in approved zones that utilize concrete tilt up construction are exempt from the maximum 75% of one material per elevation requirement but must follow all other architectural standards.	**Complies.**	*See percentages on elevations*
Prohibited Materials: Tiles. Full veneer brick and tiles exceeding ½" in thickness is permitted, however veneer tile is prohibited. Stucco stone patterns and stucco brick patterns. Wood as a primary exterior finish material. Plain, grey, unfinished CMU block except as an accent material.	**Complies.**	*Full brick proposed*
Stairways: All stairways to upper levels shall be located within the building unless otherwise approved by the Land Use Authority for secondary access to outdoor patio decks or other usable outdoor area.	**N/A.**	
Roof Drains: All roof drains, conduit and piping, maintenance stairs and ladders, and other related services shall be located on the interior of the building.	**Complies.**	*All roof drains are interior*
Exception: For all non-residential buildings with pitched roofs, exterior rain gutter drains, and downspouts are permitted where necessary for functional roof drainage. To minimize visual impact: i. All exterior drainage elements shall be designed using materials and colors that closely match the building's primary or accent colors. ii. Downspouts shall be integrated into the architectural design in a manner that reduces visibility.	**N/A.**	
Electrical Panels: To the extent possible, all electric panels and communication equipment should be located in an interior equipment room.	**Complies.**	*External panels shown and will be painted white to match the color of the wall it is placed on*
Street Orientation: All Retail or Commercial buildings shall have expansive windows, balconies, terraces, or other design features oriented to the street or adjacent public spaces.	**Complies.**	*Facing streets*
At least 35% of the first-floor elevation(s) of a building that is viewed from a public street shall include windows, and/or glass doors to minimize the expanse of blank walls and encourage a pedestrian	**Complies.**	*Both elevations facing public streets have more than 35% glass*

friendly atmosphere. For purposes of determining the glass area, the first floor shall be the first 10 feet from the finished floor. This standard does not apply to a single-story retail building of 50,000 square feet or greater provided a single primary tenant occupies the entire building square footage and additional architectural elements are used in place of windows and/or glass doors to include awnings or canopies, and must include roof line changes and horizontal articulation.		
Roof Treatment: Sloped roofs shall provide articulation and variations in order to break up the massiveness of the roof. Sloped roofs shall include eaves which are proportional to the roofs slope and scale of the building.	**N/A.**	*Flat roof*
Flat roofs shall be screened with parapets on all sides of the building. If no roof top equipment exists or is proposed, the parapet shall be a minimum of 12" in height above the roof.	**Complies.**	*Parapets larger than 12' and screen mechanical equipment on the roof*
All roofs on three-family and multi-family dwellings shall have a minimum pitch of 3/12 (25% slope). To provide architectural enhancement, residential structures are encouraged to have multiple pitch variations.	**N/A.**	
Roof mounted equipment shall not be visible from adjacent public and private streets as well as from adjacent properties, unless grade differences make visibility unavoidable.	**Complies.**	*Screening showed on elevations and screening does meet code*
Screening shall be solid and shall be consistent with the material and color of exterior finishes of the building through the use of at least two out of three of the exterior finishes of the building.	**Complies.**	*Matches the trim material and color*
Windows: Windows, other than rectangular windows, may be used as accents and trim. Untreated aluminum or metal window frames are prohibited.	**Complies.**	*Painted*
Awnings, Canopies, Trellises, Pergolas, and Similar Features: All such features must be attached to a vertical wall.	**Complies.**	*Attached to wall*
All such features shall project at least 4' from the building when located over a pedestrian traffic area and no less than 2' otherwise.	**Complies.**	*Over drive-thru window*
All such features shall maintain a minimum clearance above sidewalk grade of 8' to the bottom of the framework when located over a pedestrian traffic area.	**Complies.**	*10'*
Backlighting is not permitted.	**Complies.**	*Recessed cans*
Mechanical Equipment: All mechanical equipment shall be located or screened and other measures shall be taken so as to shield visibility of such equipment from any public or private streets.	**Complies.**	*See elevations*
Wing walls, screens, or other enclosures shall be shall be integrated into the building and landscaping of the site, whether located on the ground or roof.	**Complies.**	*Proposed screening is visually integrated into building and mounted to roof*
Rooftops of buildings shall be free of any mechanical equipment unless completely screened from all horizontal points of view.	**Complies.**	*Screening does meet code*
Screening materials shall conform to the color scheme and materials of the primary building.	**Complies.**	*Same color as the cornice*

19.18 Signs		
Regulation	**Compliance**	**Findings**
Site Plans require signage information (if tenant known, show location potential location size)	**Complies.**	*Provided on elevations*
Monument sign location meets code and sign details provided	**N/A.**	*None proposed*
Wall signs and potential locations and details	**Complies.**	*Provided on elevations*

Fiscal Impact	
Regulation	**Findings**
Is there any City maintained open space?	*No*
What is the anticipated cost to the City?	*$0*
When will City maintenance begin?	*N/A*

Exhibit 4: Site Plan with interconnection to the north (Option A)



As-Surveyed Legal Description

An entire tract of land described as Lot 4, The Hub at Saratoga Phase 1 recorded March 21, 2022 as Entry No. 34860:2022, Map No. 18236 in the Office of the Utah County Recorder and located in the Southwest Quarter of Section 2, Township 5 South, Range 1 West, Salt Lake Base and Meridian. and described as follows:

The above described entire tract of land contains 57,355 sq. ft. in area or 1.317 acres, more or less.

ADA NOTE: ALL APPLICABLE ELEMENTS OF SARATOGA SPRINGS CODE 19.09.07 WITH RESPECT TO ACCESSIBLE PARKING WILL BE ADHERED TO.

NOTE: A RIGHT-OF-WAY ENCROACHMENT PERMIT MUST BE OBTAINED FROM THE CITY OF SARATOGA SPRINGS PRIOR TO DOING ANY WORK IN THE EXISTING RIGHT-OF-WAY. APPLY FOR AN ENCROACHMENT PERMIT AT HTTPS://CITYWORKS.SARATOGASPRINGSCITY.COM/PUBLICACCESS/TEMPLATE/LOGIN.ASPX

DETENTION NOTE:
SEE DRAINAGE REPORT FOR ALL DRAINAGE CALCULATIONS.

COMPLIANCE NOTE: THIS PROJECT COMPLIES WITH THE CITY'S ADOPTED LAND USE ELEMENT OF THE GENERAL PLAN

N

0 20 40 60
Scale in Feet

SEE COVER SHEET FOR PROJECT LEGEND

SHEET LEGEND

- SENSITIVE LANDS AREA (SLOPES >30')
- TRUCK LOADING/UNLOADING AREA
- ADA ROUTE

SITE PLAN NOTES:

1. PROPOSED 24" CURB & GUTTER. SEE CITY DETAIL ST-2B ON SHEET C4.2.
2. PROPOSED 24" FALL-OUT CURB & GUTTER. SEE CITY DETAIL ST-2D ON SHEET C4.2.
3. PROVIDE A SMOOTH TRANSITION FROM CURB & GUTTER TO FALL-OUT CURB & GUTTER. MIN LENGTH 3'.
4. ALL HANDICAP STALLS SHALL HAVE SLOPES OF LESS THAN 2% IN ALL DIRECTIONS. SEE DETAIL 5/C4.0.
5. PROPOSED ADA SIGN. SEE DETAIL 6/4.0.
6. ADA RAMPS ARE TO BE INSTALLED PER CITY AND ADA STANDARDS AND SPECIFICATIONS. SEE DETAIL 2/C4.0.
7. ADA RAMPS ARE TO BE INSTALLED PER CITY AND ADA STANDARDS AND SPECIFICATIONS. SEE DETAIL 1/C4.0.
8. INSTALL 6' SIDEWALK PER SARATOGA SPRINGS STD. ST-1. SEE DETAIL SHEET 4.2.
9. EXISTING SIDEWALK TO BE REMOVED AND REPLACED WITH A NEW COMMERCIAL DRIVE APPROACH PER CITY STANDARD ST-4B. SEE DETAIL SHEET C4.2.
10. CLEAR SIGHT TRIANGLE.
11. PROPOSED CONCRETE LANDING PAD. SLOPES NOT TO EXCEED 2% IN ANY DIRECTION.
12. INSTALL TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR DETAILS.
13. PROPOSED BOULDER RETAINING WALL, DESIGN BY OTHERS. SEE SHEET C2.0 FOR ELEVATIONS.
12. EXISTING CURB & GUTTER.
15. EXISTING STREET LIGHT, TO REMAIN.
16. EXISTING RETAINING WALL, TO BE PROTECTED IN PLACE.
17. PROPOSED BOLLARD.
18. PROPOSED FIRE HYDRANT.
19. EXISTING CELL TOWER ENCLOSURE.
20. PROPOSED 3' CONCRETE WATERWAY, SEE DETAIL 7/C4.0.
21. PROPOSED RETAINING WALL. SEE SHEET C2.0 FOR GRADING AND STRUCTURAL PLANS FOR DETAILS.
22. PROPOSED PAINTED PEDESTRIAN CROSSING.

LOT AREAS:

		SQ. FT.	/	ACRES.	(PERCENT)
LOT		57,355	/	1.317	
	BUILDING FOOTPRINT	12,586	/	0.289	(21.94%)
	ASPHALT	19,372	/	0.445	(33.78%)
	LANDSCAPING	16,784	/	0.385	(29.26%)
	CONCRETE	8,612	/	0.198	(15.02%)

LOT LANDSCAPING AREAS:

	SQ. FT.	CITY REQ'T
TOTAL LANDSCAPING PROVIDED	16,784	20%
		29.3 % PROVIDED

LOT PARKING REQUIREMENTS:

	SQ. FT.	CITY REQ'T
RETAIL	12,586	50.3 (4/1000)
TOTAL REQUIRED		51
TOTAL PROVIDED		44
DRIVE THRU SPACES		3
ACCESSIBLE SPACES	2	(2 REQ'D 26 TO 50)

PROJECT AREA	57,355 SQ.FT.	1.32 ACRES	100.00 %
LOT AREA	57,355 SQ.FT.	1.32 ACRES	100.00 %
LOT IMPERVIOUS AREA	40,571 SQ.FT.	0.93 ACRES	70.74 %
LOT BUILDING AREA	12,586 SQ.FT.	0.29 ACRES	21.94 %
LOT LANDSCAPE AREA	16,784 SQ.FT.	0.39 ACRES	29.26 %
R.O.W. DEDICATION AREA	0 SQ.FT.	0.00 ACRES	0.00 %
SENSITIVE LANDS AREA	4,598 SQ.FT.	0.11 ACRES	8.02 %
SENSITIVE LANDS % OF OPEN SPACE	27.40 %		
NUMBER OF BUILDINGS	1		
NUMBER OF SURFACE PARKING	44		
NUMBER OF GARAGE PARKING	0		
NET DENSITY OF DWELLINGS	0.76 BUILDINGS/ACRE		
% OF BUILDABLE LAND	91.98 %		
PAVEMENT	19,696 SQ.FT.		
UNTREATED BASE COURSE	19,696 SQ.FT.		
GRANULAR BORROW	19,696 SQ.FT.		
CURB & GUTTER	1,646 LF		
SIDEWALK	315 LF		
ADA RAMPS	5 EACH		

NO.	REVISIONS	BY	DATE
1	CITY COMMENTS		SPC 09/23/25
2	CITY COMMENTS		SPC 10/08/25
3	CITY COMMENTS		SPC 11/13/25

DESIGNER: SDT PROJECT ENGINEER: SDT

CIVIL ENGINEERING + SURVEYING
10718 S BECKSTEAD LANE, SUITE 102
South Jordan, Utah - 801-949-6296

2429 STAGECOACH RETAIL
2429 NORTH STAGECOACH DRIVE, SARATOGA SPRINGS, UTAH 84045

SITE PLAN

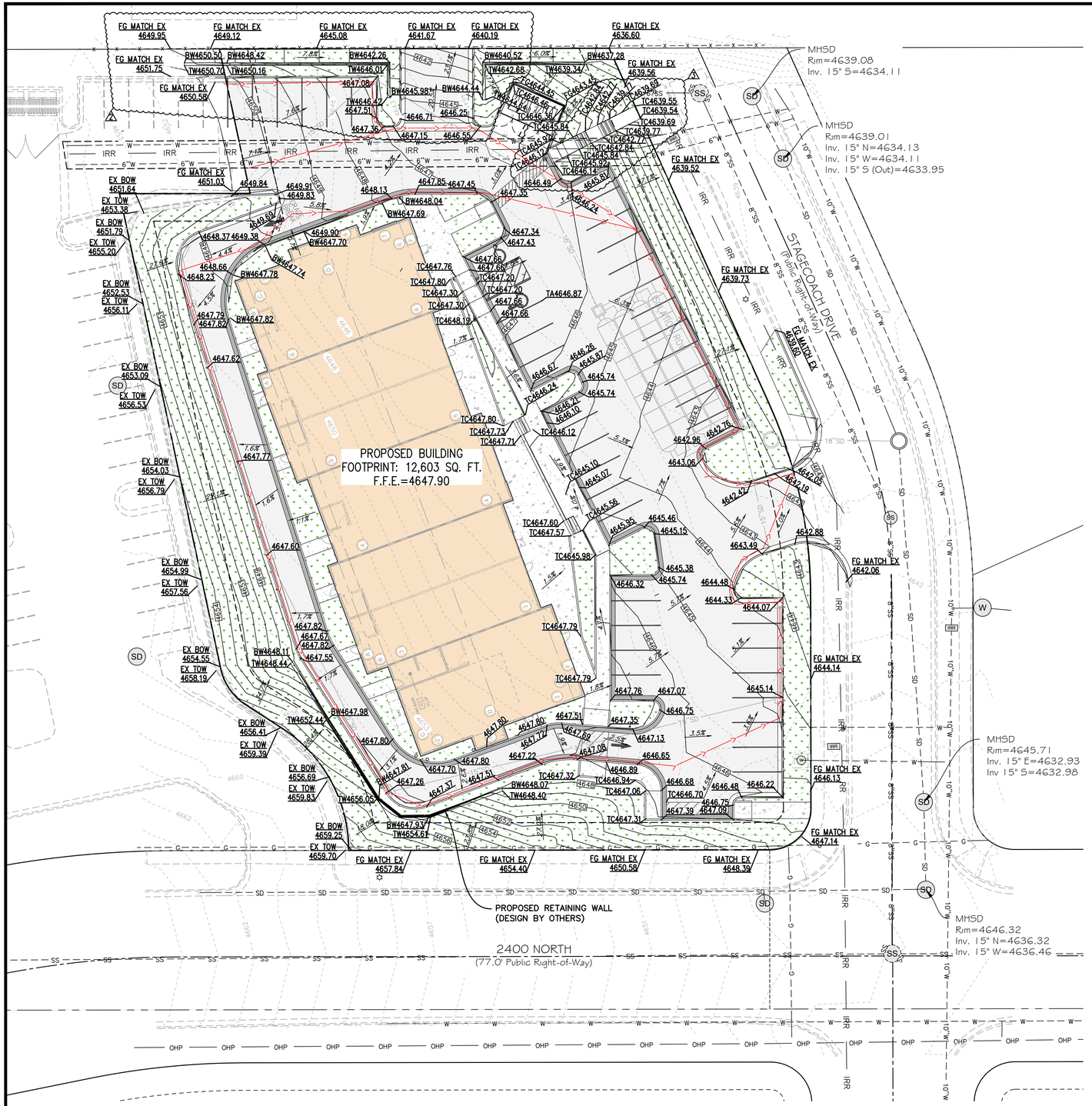
PROFESSIONAL ENGINEER
No. 8706815
COLBY CRAIG ANDERSON
STATE OF UTAH

Blue Stakes of UTAH 811
Bluestakes.org

SHEET NO.
C1.0

PROJECT ID	DATE:
E25-056	11/13/25
FILE NAME: PRJ-SCC	SCALE: 1"=20'

C1



NOTE:
1. ACCEPTED CONSTRUCTION DRAWINGS OR A GRADING PERMIT MUST BE OBTAINED FROM SARATOGA SPRINGS CITY PRIOR TO DISTURBING ANY VEGETATION OR MOVING ANY SOIL. CONTACT THE CITY ENGINEERING DEPT. AT 801-766-9793.
2. A RIGHT-OF-WAY ENCROACHMENT PERMIT MUST BE OBTAINED FROM THE CITY OF SARATOGA SPRINGS PRIOR TO DOING ANY WORK IN THE EXISTING RIGHT-OF-WAY. APPLY FOR AN ENCROACHMENT PERMIT AT HTTPS://CITYWORKS.SARATOGASPRINGSCITY.COM/PUBLICACCESS/TEMPLATE/LOGIN.ASPX
3. I HEREBY CERTIFY THAT THIS DESIGN FOR THE ONSITE DRAINAGE OF THIS DEVELOPMENT WAS PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF SARATOGA SPRINGS' STANDARD SPECIFICATIONS AND DRAWINGS, AND WAS DESIGNED TO COMPLY WITH THE PROVISIONS THEREOF. I UNDERSTAND THAT THE CITY ASSUMES NO RESPONSIBILITY OR LIABILITY WHATSOEVER FOR THIS DESIGN.

NOTE:
DISTURBANCE OF ANY SURVEY MONUMENTS WITH CONSTRUCTION ACTIVITY IS AT THE CONTRACTOR'S SOLE EXPENSE AND SHALL BE REMEDIED IN ACCORDANCE WITH APPLICABLE JURISDICTIONAL REQUIREMENTS.

STORM DRAIN NOTE:
ALL STORM DRAIN FACILITIES WILL CONFORM TO THE CITY'S CONSTRUCTION STANDARDS AND POLICIES.

1 SOILS NOTE:
ROUGHLY 10' OF CLAY WILL NEED TO BE EXCAVATED BENEATH PROPOSED STORMTECH CHAMBERS. SEE GEOTECHNICAL REPORT FOR DETAILS.

N

0 20 40 60
Scale in Feet

SEE COVER SHEET FOR PROJECT LEGEND

SHEET LEGEND

STORMWATER FLOW PATH

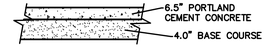
CUT	2,298 CU.YD.
FILL	3,440 CU.YD.
NET <CUT>	1,142 CU.YD.

Benchmark Info

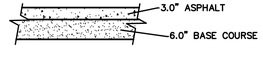
The Benchmark for the project is the South Quarter Corner of Section 2, T.5S. R.1W., SLB&M
Elevation= 4584.32'
Datum is NAVD 88 derived from UTAH TURN GPS System

1

STORM DRAIN QUANTITIES	
18" RCP	57 LF
15" ADS	601 LF
3'x3' SD BOX	2 EACH
2'x3' SD BOX	8 EACH
OUTLET STRUCTURE	1 EACH
TREATMENT STRUCTURE	1 EACH



CONCRETE PAVEMENT SECTION (DUMPSTER PAD)
N.T.S.



ASPHALT PAVEMENT SECTION (PARKING AREA)
N.T.S.

PAVEMENT SECTIONS ARE PER THE JULY 31, 2025 GEOTECHNICAL STUDY BY AGEC APPLIED GEOTECH (PROJECT NO 1250359). CONTRACTOR TO INSTALL ALL PAVEMENT PER THE GEOTECH REPORT.

NO.	REVISIONS	BY	DATE
1	CITY COMMENTS	SDT	09/23/25
2	CITY COMMENTS	SDT	10/08/25
3	CITY COMMENTS	SDT	11/13/25

DESIGNER: SDT PROJECT ENGINEER: SDT

CIVIL ENGINEERING +SURVEYING
10718 S BECKSTEAD LANE, SUITE 102
South Jordan, Utah - 801-949-6298

2429 STAGECOACH RETAIL
2429 NORTH STAGECOACH DRIVE, SARATOGA SPRINGS, UTAH 84045

GRADING PLAN

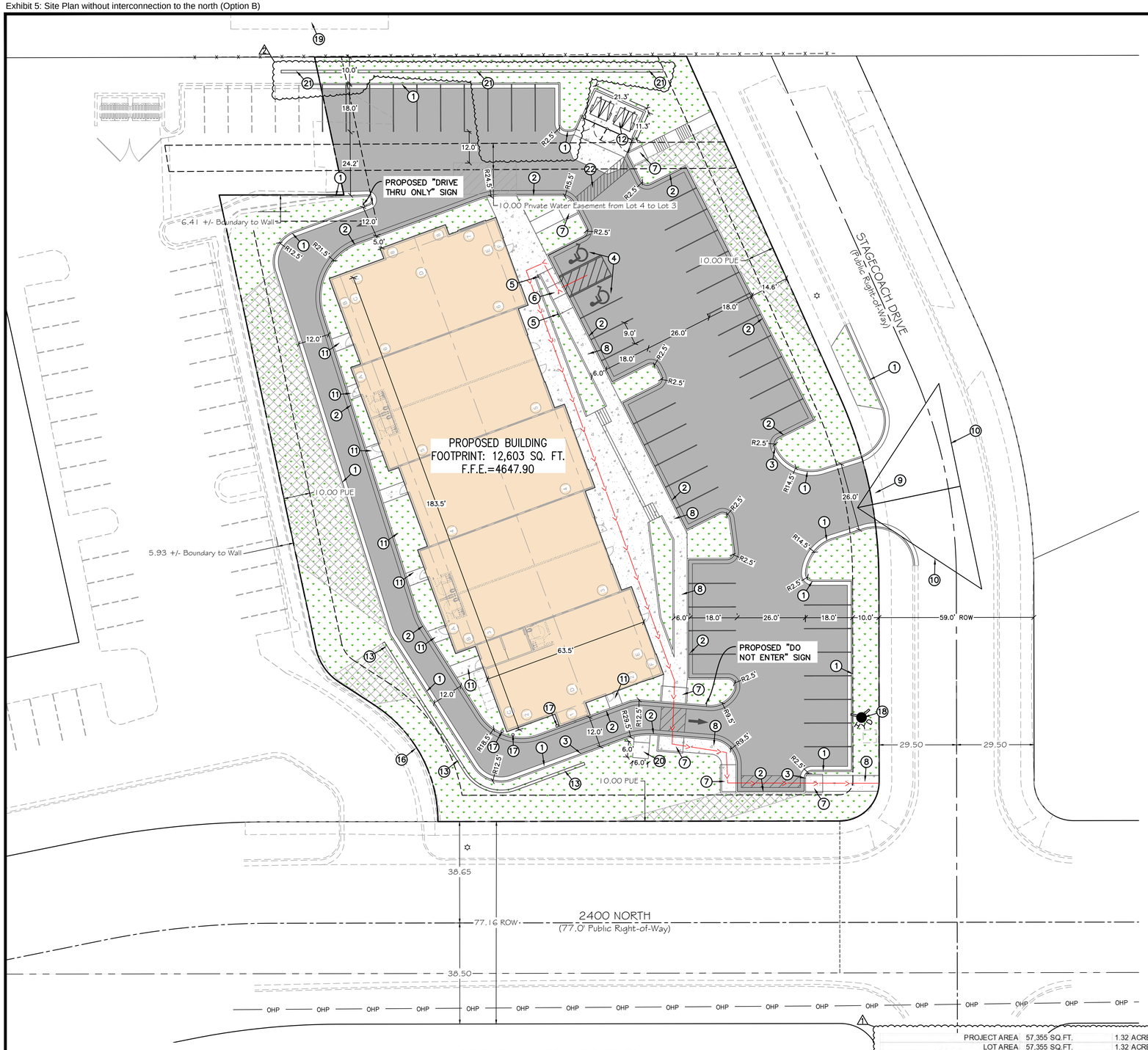
PROFESSIONAL ENGINEER
No. 8706815
COLBY CRAIG ANDERSON
STATE OF UTAH

Blue Stakes of UTAH 811
Bluestakes.org

SHEET NO.
C2.0

PROJECT ID	DATE:
E25-056	11/13/25
FILE NAME: PRJ-SCC	SCALE: 1"=20'

Exhibit 5: Site Plan without interconnection to the north (Option B)



As-Surveyed Legal Description

An entire tract of land described as Lot 4, The Hub at Saratoga Phase 1 recorded March 21, 2022 as Entry No. 34860:2022, Map No. 18236 in the Office of the Utah County Recorder and located in the Southwest Quarter of Section 2, Township 5 South, Range 1 West, Salt Lake Base and Meridian. and described as follows:

The above described entire tract of land contains 57,355 sq. ft. in area or 1.317 acres, more or less.

ADA NOTE: ALL APPLICABLE ELEMENTS OF SARATOGA SPRINGS CODE 19.09.07 WITH RESPECT TO ACCESSIBLE PARKING WILL BE ADHERED TO.

NOTE: A RIGHT-OF-WAY ENCROACHMENT PERMIT MUST BE OBTAINED FROM THE CITY OF SARATOGA SPRINGS PRIOR TO DOING ANY WORK IN THE EXISTING RIGHT-OF-WAY. APPLY FOR AN ENCROACHMENT PERMIT AT HTTPS://CITYWORKS.SARATOGASPRINGSCITY.COM/PUBLICACCESS/TEMPLATE/LOGIN.ASPX

DETENTION NOTE:
SEE DRAINAGE REPORT FOR ALL DRAINAGE CALCULATIONS.

COMPLIANCE NOTE: THIS PROJECT COMPLIES WITH THE CITY'S ADOPTED LAND USE ELEMENT OF THE GENERAL PLAN

N

0 20 40 60

Scale in Feet

SEE COVER SHEET FOR PROJECT LEGEND

SHEET LEGEND

- SENSITIVE LANDS AREA (SLOPES >30')
- TRUCK LOADING/UNLOADING AREA
- ADA ROUTE

SITE PLAN NOTES:

1. PROPOSED 24" CURB & GUTTER. SEE CITY DETAIL ST-2B ON SHEET C4.2.
2. PROPOSED 24" FALL-OUT CURB & GUTTER. SEE CITY DETAIL ST-2D ON SHEET C4.2.
3. PROVIDE A SMOOTH TRANSITION FROM CURB & GUTTER TO FALL-OUT CURB & GUTTER. MIN LENGTH 3'.
4. ALL HANDICAP STALLS SHALL HAVE SLOPES OF LESS THAN 2% IN ALL DIRECTIONS. SEE DETAIL 5/C4.0.
5. PROPOSED ADA SIGN. SEE DETAIL 6/4.0.
6. ADA RAMPS ARE TO BE INSTALLED PER CITY AND ADA STANDARDS AND SPECIFICATIONS. SEE DETAIL 2/C4.0.
7. ADA RAMPS ARE TO BE INSTALLED PER CITY AND ADA STANDARDS AND SPECIFICATIONS. SEE DETAIL 1/C4.0.
8. INSTALL 6' SIDEWALK PER SARATOGA SPRINGS STD. ST-1. SEE DETAIL SHEET 4.2.
9. EXISTING SIDEWALK TO BE REMOVED AND REPLACED WITH A NEW COMMERCIAL DRIVE APPROACH PER CITY STANDARD ST-4B. SEE DETAIL SHEET C4.2.
10. CLEAR SIGHT TRIANGLE.
11. PROPOSED CONCRETE LANDING PAD. SLOPES NOT TO EXCEED 2% IN ANY DIRECTION.
12. INSTALL TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR DETAILS.
13. PROPOSED BOULDER RETAINING WALL, DESIGN BY OTHERS. SEE SHEET C2.0 FOR ELEVATIONS.
12. EXISTING CURB & GUTTER.
15. EXISTING STREET LIGHT, TO REMAIN.
16. EXISTING RETAINING WALL, TO BE PROTECTED IN PLACE.
17. PROPOSED BOLLARD.
18. PROPOSED FIRE HYDRANT.
19. EXISTING CELL TOWER ENCLOSURE.
20. PROPOSED TRANSFORMER PAD, SEE ELECTRICAL PLANS FOR DETAILS.
21. PROPOSED RETAINING WALL. SEE SHEET C2.0 FOR GRADING AND STRUCTURAL PLANS FOR DETAILS.
22. PROPOSED PAINTED PEDESTRIAN CROSSING.

LOT AREAS:

	SQ. FT.	/	ACRES.	(PERCENT)
LOT	57,355	/	1.317	
BUILDING FOOTPRINT	12,586	/	0.289	(21.94%)
ASPHALT	19,398	/	0.445	(33.82%)
LANDSCAPING	16,850	/	0.387	(29.38%)
CONCRETE	8,521	/	0.196	(14.86%)

LOT LANDSCAPING AREAS:

	SQ. FT.	CITY REQ'T
TOTAL LANDSCAPING PROVIDED	16,850	20%

29.4 % PROVIDED

LOT PARKING REQUIREMENTS:

	SQ. FT.	CITY REQ'T
RETAIL	12,586	50.3 (4/1000)
TOTAL REQUIRED		51
TOTAL PROVIDED		53
DRIVE THRU SPACES		3
ACCESSIBLE SPACES	2	(3 REQ'D 51 TO 100)

PROJECT AREA	57,355 SQ.FT.	1.32 ACRES	100.00 %
LOT AREA	57,355 SQ.FT.	1.32 ACRES	100.00 %
LOT IMPERVIOUS AREA	40,571 SQ.FT.	0.93 ACRES	70.74 %
LOT BUILDING AREA	12,586 SQ.FT.	0.29 ACRES	21.94 %
LOT LANDSCAPE AREA	16,784 SQ.FT.	0.39 ACRES	29.26 %
R.O.W. DEDICATION AREA	0 SQ.FT.	0.00 ACRES	0.00 %
SENSITIVE LANDS AREA	4,598 SQ.FT.	0.11 ACRES	8.02 %
SENSITIVE LANDS % OF OPEN SPACE	27.40 %		
NUMBER OF BUILDINGS	1		
NUMBER OF SURFACE PARKING	44		
NUMBER OF GARAGE PARKING	0		
NET DENSITY OF DWELLINGS	0.76 BUILDINGS/ACRE		
% OF BUILDABLE LAND	91.98 %		
PAVEMENT	19,696 SQ.FT.		
UNTREATED BASE COURSE	19,696 SQ.FT.		
GRANULAR BORROW	19,696 SQ.FT.		
CURB & GUTTER	1,646 LF		
SIDEWALK	315 LF		
ADA RAMPS	5 EACH		

NO.	REVISIONS	BY	DATE
1	CITY COMMENTS		SPC 09/23/25
2	CITY COMMENTS		SPC 10/08/25
3	CITY COMMENTS		SPC 12/22/25

DESIGNER: SDT PROJECT ENGINEER: SDT

CIVIL ENGINEERING +SURVEYING
10718 S BECKSTEAD LANE, SUITE 102
South Jordan, Utah - 801-949-6296

2429 STAGECOACH RETAIL

2429 NORTH STAGECOACH DRIVE, SARATOGA SPRINGS, UTAH 84045

SITE PLAN

SHEET NO. C1.0

PROJECT ID: E25-056 | DATE: 12/22/25

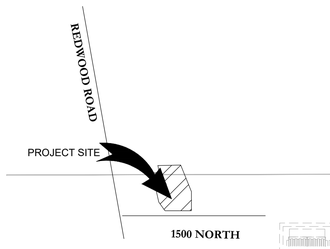
FILE NAME: PRJ-SCC | SCALE: 1"=20'

Blue Stakes of UTAH 811 Bluestakes.org

C1

Exhibit 6: Landscape and Irrigation Plans with interconnection to the north

VICINITY MAP



HARVEST VIEW PROPERTIES LLC
36:431:0028

EMPIRE REAL ESTATE HOLDINGS LLC
68:054:003

BOYD B BROWN
68:054:0012

BOYD B BROWN
68:054:0013

STAGECOACH DRIVE
(Public Right-of-Way)

Approximate Location of RMP Transformer

RMP TRANSFORMER

2400 NORTH
(77.0' Public Right-of-Way)

1500 NORTH STREET
(Public Right-of-Way)

ISSUE DATE	PROJECT NUMBER
12/19/2025	UT25136

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2	CITY COMMENTS	12-19-2025
3		
4		

PLAN INFORMATION

** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025

811 BLUE STAKES OF UTAH
UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

NORTH

0' 10' 20' 40' 80'
GRAPHIC SCALE: 1" = 20'

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

PKJ DESIGN GROUP
Landscape Architecture Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
6123121-5301
12/19/2025
ELECTRONIC SEAL
STATE OF UTAH

DRAWING INFO

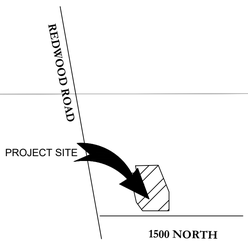
PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/19/2025

COLOR ILLUSTRATION

CITY PERMIT SET

LP-COLOR

VICINITY MAP



HARVEST VIEW PROPERTIES LLC
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EMPIRE REAL ESTATE HOLDINGS LLC
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STAGECOACH DRIVE
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NORTH

0' 10 20 40 80
GRAPHIC SCALE: 1" = 20

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8128121-5301
12/19/2025
ELECTRONIC SEAL
STATE OF UTAH

DRAWING INFO	
PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/19/2025

LANDSCAPE OVERALL PLAN

CITY PERMIT SET

LP-100

LANDSCAPE PLAN SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES LANDSCAPE PROCEDURES FOR THE PROJECT INCLUDING ALL LABOR, MATERIALS, AND INSTALLATION NECESSARY, BUT NOT LIMITED TO, THE FOLLOWING:

1. SITE CONDITIONS
2. GUARANTEES
3. MAINTENANCE
4. SOIL AMENDMENTS
5. FINE GRADING
6. LANDSCAPE EDGING
7. FURNISH AND INSTALLING PLANT
8. TURF PLANTING
9. WEED BARRIER

1.2 SITE CONDITIONS

A. EXAMINATION: BEFORE SUBMITTING A BID, EACH CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS; SHALL VISIT THE SITE OF THE WORK; SHALL FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS; AND SHALL INCLUDE IN THE BID THE COST OF ALL ITEMS REQUIRED BY THE CONTRACT DOCUMENTS ARE AT A VARIANCE WITH THE APPLICABLE LAWS, BUILDING CODES, RULES, REGULATIONS, OR CONTAIN OBVIOUS ERRONEOUS OR UNCOORDINATED INFORMATION, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE PROJECT REPRESENTATIVE AND THE NECESSARY CHANGES SHALL BE ACCOMPLISHED BY ADDENDUM.

B. PROTECTION: CONTRACTOR TO CONDUCT THE WORK IN SUCH A MANNER TO PROTECT ALL EXISTING UNDERGROUND UTILITIES OR STRUCTURES. CONTRACTOR TO REPAIR OR REPLACE ANY DAMAGED UTILITY OR STRUCTURE USING IDENTICAL MATERIALS TO MATCH EXISTING AT NO EXPENSE TO THE OWNER.

C. IRRIGATION SYSTEM: DO NOT BEGIN PLANTING UNTIL THE IRRIGATION SYSTEM IS COMPLETELY INSTALLED, IS ADJUSTED FOR FULL COVERAGE AND IS COMPLETELY OPERATIONAL.

1.3 PERMITS

A. BLUE STAKE/ DIG LINE: WHEN DIGGING IS REQUIRED, "BLUE STAKE" OR "DIG LINE" THE WORK SITE AND IDENTIFY THE APPROXIMATE LOCATION OF ALL KNOWN UNDERGROUND UTILITIES OR STRUCTURES.

1.4 PLANT DELIVERY, QUALITY, AND AVAILABILITY

A. UNAUTHORIZED SUBSTITUTIONS WILL NOT BE ACCEPTED. IF PROOF IS SUBMITTED THAT SPECIFIC PLANTS OR PLANT SIZES ARE UNOBTAINABLE, WRITTEN SUBSTITUTION REQUESTS WILL BE CONSIDERED FOR THE NEAREST EQUIVALENT PLANT OR SIZE. ALL SUBSTITUTION REQUESTS MUST BE MADE IN WRITING AND PREFERABLY BEFORE THE BID DUE DATE.

1.5 FINAL INSPECTION

A. ALL PLANTS WILL BE INSPECTED AT THE TIME OF FINAL INSPECTION PRIOR TO RECEIVING A LANDSCAPE SUBSTANTIAL COMPLETION FOR CONFORMANCE TO SPECIFIED PLANTING PROCEDURES, AND FOR GENERAL APPEARANCE AND VITALITY. ANY PLANT NOT APPROVED BY THE PROJECT REPRESENTATIVE WILL BE REJECTED AND REPLACED IMMEDIATELY.

1.6 LANDSCAPE SUBSTANTIAL COMPLETION

A. A SUBSTANTIAL COMPLETION CERTIFICATE WILL ONLY BE ISSUED BY THE PROJECT REPRESENTATIVE FOR "LANDSCAPE AND IRRIGATION" IN THEIR ENTIRETY. SUBSTANTIAL COMPLETION WILL NOT BE PROPORTIONED TO BE DESIGNATED AREAS OF A PROJECT.

1.7 MAINTENANCE

A. PLANT MATERIAL: THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL PLANTED MATERIALS IN A HEALTHY AND GROWING CONDITION FOR 30 DAYS AFTER RECEIVING A LANDSCAPE SUBSTANTIAL COMPLETION AT WHICH TIME THE GUARANTEE PERIOD COMMENCES. THIS MAINTENANCE IS TO INCLUDE MOWING, WEEDING, CULTIVATING, FERTILIZING, MONITORING WATER SCHEDULES, CONTROLLING INSECTS AND DISEASES, RE-GUYING AND STAKING, AND ALL OTHER OPERATIONS OF CARE NECESSARY FOR THE PROMOTION OF ROOT GROWTH AND PLANT LIFE SO THAT ALL PLANTS ARE IN A CONDITION SATISFACTORY AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR FAILURE TO MONITOR WATERING OPERATIONS AND SHALL REPLACE ANY AND ALL PLANT MATERIAL THAT IS LOST DUE TO IMPROPER APPLICATION OF WATER.

1.8 GUARANTEE

A. GUARANTEE: A GUARANTEE PERIOD OF ONE YEAR SHALL BEGIN FROM END OF MAINTENANCE PERIOD AND FINAL ACCEPTANCE FOR TREES, SHRUBS, AND GROUND COVERS. ALL PLANTS SHALL GROW AND BE HEALTHY FOR THE GUARANTEE PERIOD AND TREES SHALL LIVE AND GROW IN ACCEPTABLE UPRIGHT POSITION. ANY PLANT NOT ALIVE, IN POOR HEALTH, OR IN POOR CONDITION AT THE END OF THE GUARANTEE PERIOD WILL BE REPLACED IMMEDIATELY. ANY PLANT WILL ONLY NEED TO BE REPLACED ONCE DURING THE GUARANTEE PERIOD. CONTRACTOR TO PROVIDE DOCUMENTATION SHOWING WHERE EACH PLANT TO BE REPLACED IS LOCATED. ANY OUTSIDE FACTORS, SUCH AS VANDALISM OR LACK OF MAINTENANCE ON THE PART OF THE OWNER, SHALL NOT BE PART OF THE GUARANTEE

PART II - PRODUCTS

2.1 LANDSCAPE MATERIALS

A. TREE STAKING: ALL TREES SHALL BE STAKED FOR ONE YEAR WARRANTY PERIOD. ALL TREES NOT PLUMB SHALL BE REPLACED. STAKED TREES SHALL USE VINYL TREE TIES AND TREE STAKES TWO (2) INCH BY TWO (2) BY EIGHT (8) FOOT COMMON PINE STAKES USED AS SHOWN ON THE DETAILS.

B. TREE WRAP: TREE WRAP IS NOT TO BE USED.

C. MULCH/ROCK: SEE PLANS. ALL PLANTER BEDS TO RECEIVE A MINIMUM 3" LAYER FOR TREES, SHRUBS, AND PERENNIALS AND 1" FOR GROUNDCOVERS.

D. WEED BARRIER: DEWITT 5 OZ. WEED BARRIER FABRIC. MANUFACTURED BY DEWITT COMPANY, DEWITTCOMPANY.COM OR APPROVED EQUAL.

E. TREE, SHRUB, AND GRASS BACKFILL MIXTURE; BACKFILL MIXTURE TO BE 80% NATIVE SOIL AND 20% TOPSOIL, THOROUGHLY MIXED TOGETHER PRIOR TO PLACEMENT.

F. TOPSOIL: REQUIRED FOR TURF AREAS, PLANTER BEDS AND BACKFILL MIXTURE. ACCEPTABLE TOPSOIL SHALL MEET THE FOLLOWING STANDARDS:

a. PH: 5.5-7.5

b. EC (ELECTRICAL CONDUCTIVITY): < 2.0 MMHOS PER CENTIMETER

c. SAR (SODIUM ABSORPTION RATION): < 3.0

d. % OM (PERCENT ORGANIC MATTER): >1%

e. TEXTURE (PARTICLE SIZE PER USDA SOIL CLASSIFICATION): SAND <70%; CLAY < 30%; SILT < 70%, STONE FRAGMENTS (GRAVEL OR ANY SOIL PARTICLE GREATER THAN TWO (2) MM IN SIZE) < 5% BY VOLUME.

G. TURF SOD: ALL SOD SHALL BE 18 MONTH OLD AS SPECIFIED ON PLANS (OR APPROVED EQUAL) THAT HAS BEEN CUT FRESH THE MORNING OF INSTALLATION. ONLY SOD THAT HAS BEEN GROWN ON A COMMERCIAL SOD FARM SHALL BE USED. ONLY USE SOD FROM A SINGLE SOURCE.

H. LANDSCAPE CURB EDGING: SIX (6) INCHES BY FOUR (4) INCHES EXTRUDED CONCRETE CURB MADE UP OF THE FOLLOWING MATERIALS:

a. WASHED MORTAR SAND FREE OF ORGANIC MATERIAL.

b. PORTLAND CEMENT (SEE CONCRETE SPEC. BELOW FOR TYPE)

c. REINFORCED FIBER - SPECIFICALLY PRODUCED FOR COMPATIBILITY WITH AGGRESSIVE ALKALINE ENVIRONMENT OF PORTLAND CEMENT-BASED COMPOSITES.

d. ONLY POTABLE WATER FOR MIXING.

I. LANDSCAPE METAL EDGING: 5.5" ALUMINUM EDGING WITH 15" DOWELS INTO THE GROUND FOR STABILIZATION.

PART III - EXECUTION

3.1 GRADING

A. TOPSOIL PREPARATION: GRADE PLANTING AREAS ACCORDING TO THE GRADING PLAN. ELIMINATE UNEVEN AREAS AND LOW SPOTS. PROVIDE FOR PROPER GRADING AND DRAINAGE.

B. TOPSOIL PLACEMENT: SLOPE SURFACED AWAY FROM BUILDING AT TWO (2) PERCENT SLOPE WITH NO POCKETS OF STANDING WATER. ESTABLISH FINISH GRADES OF ONE (1) INCHES FOR PLANTERS BELOW GRADE OF ADJACENT PAVED SURFACED. PROVIDE NEAT, SMOOTH, AND UNIFORM FINISH GRADES. REMOVE SURPLUS SUB-SOIL AND TOPSOIL FROM THE SITE.

C. COMPACTION: COMPACTION UNDER HARD SURFACE AREAS (ASPHALT PATHS AND CONCRETE SURFACES) SHALL BE NINETY-FIVE (95) PERCENT. COMPACTION UNDER PLANTING AREAS SHALL BE BETWEEN EIGHTY-FIVE (85) AND NINETY (90) PERCENT.

3.2 TURF GRADING

A. THE SURFACE ON WHICH THE SOD IS TO BE LAID SHALL BE FIRM AND FREE FROM FOOTPRINTS, DEPRESSIONS, OR UNDULATIONS OF ANY KIND. THE SURFACE SHALL BE FREE OF ALL MATERIALS LARGER THAN 1/2" IN DIAMETER.

B. THE FINISH GRADE OF THE TOPSOIL ADJACENT TO ALL SIDEWALKS, MOW-STRIPS, ETC. PRIOR TO THE LAYING OF SOD, SHALL BE SET SUCH THAT THE CROWN OF THE GRASS SHALL BE AT THE SAME LEVEL AS THE ADJACENT CONCRETE OR HARD SURFACE. NO EXCEPTIONS.

3.3 PLANTING OPERATIONS

A. REVIEW THE EXACT LOCATIONS OF ALL TREES AND SHRUBS WITH THE PROJECT REPRESENTATIVE FOR APPROVAL PRIOR TO THE DIGGING OF ANY HOLES. PREPARE ALL HOLES ACCORDING TO THE DETAILS ON THE DRAWINGS.

B. WATER PLANTS IMMEDIATELY UPON ARRIVAL AT THE SITE. MAINTAIN IN MOIST CONDITION UNTIL PLANTED.

C. BEFORE PLANTING, LOCATE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. DO NOT PLACE PLANTS ON OR NEAR UTILITY LINES.

D. THE TREE PLANTING HOLE SHOULD BE THE SAME DEPTH AS THE ROOT BALL, AND TWO TIMES THE DIAMETER OF THE ROOT BALL.

E. TREES MUST BE PLACED ON UNDISTURBED SOIL AT THE BOTTOM OF THE PLANTING HOLE.

F. THE TREE HOLE DEPTH SHALL BE DETERMINED SO THAT THE TREE MAY BE SET SLIGHTLY HIGH OF FINISH GRADE, 1" TO 2" ABOVE THE BASE OF THE TRUNK FLARE, USING THE TOP OF THE ROOT BALL AS A GUIDE.

G. PLANT IMMEDIATELY AFTER REMOVAL OF CONTAINER FOR CONTAINER PLANTS.

H. SET TREE ON SOIL AND REMOVE ALL BURLAP, WIRE BASKETS, TWINE, WRAPPINGS, ETC. BEFORE BEGINNING AND BACKFILLING OPERATIONS. DO NOT USE PLANTING STOCK IF THE BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.

I. APPLY VITAMIN B-1 ROOT STIMULATOR AT THE RATE OF ONE (1) TABLESPOON PER GALLON.

J. UPON COMPLETION OF BACKFILLING OPERATION, THOROUGHLY WATER TREE TO COMPLETELY SETTLE THE SOIL AND FILL ANY VOIDS THAT MAY HAVE OCCURRED. USE A WATERING HOSE, NOT THE AREA IRRIGATION SYSTEM. IF ADDITIONAL PREPARED TOPSOIL MIXTURE NEEDS TO BE ADDED. IT SHOULD BE A COURSER MIX AS REQUIRED TO ESTABLISH FINISH GRADE AS INDICATED ON THE DRAWINGS.

K. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES. ALL CUTS, SCARS, AND BRUISES SHALL BE PROPERLY TREATED ACCORDING TO THE DIRECTION OF THE PROJECT REPRESENTATIVE. PROPER PRUNING TECHNIQUES SHALL BE USED. DO NOT LEAVE STUBS AND DO NOT CUT THE LEADER BRANCH. IMPROPER PRUNING SHALL BE CAUSE FOR REJECTION OF THE PLANT MATERIAL.

L. PREPARE A WATERING CIRCLE OF 2' DIAMETER AROUND THE TRUNK. FOR CONIFERS, EXTEND THE WATERING WELL TO THE DRIP LINE OF THE TREE CANOPY. PLACE MULCH AROUND THE PLANTED TREES.

4. TURF - SOD LAYING

A. TOP SOIL AMENDMENTS: PRIOR TO LAYING SOD, COMMERCIAL FERTILIZER SHALL BE APPLIED AND INCORPORATED INTO THE UPPER FOUR (4) INCHES OF THE TOPSOIL AT A RATE OF FOUR POUNDS OF NITROGEN PER ONE THOUSAND (1,000) SQUARE FEET. ADJUST FERTILIZATION MIXTURE AND RATE OF APPLICATION AS NEEDED TO MEET RECOMMENDATIONS GIVEN BY TOPSOIL ANALYSIS. INCLUDE OTHER AMENDMENTS AS REQUIRED.

B. FERTILIZATION: THREE WEEKS AFTER SOD PLACEMENT FERTILIZE THE TURF AT A RATE OF ½ POUND OF NITROGEN PER 1000 SQUARE FEET. USE FERTILIZER SPECIFIED ABOVE. ADJUST FERTILIZATION MIXTURE AND RATES TO MEET RECOMMENDATIONS GIVEN BY TOPSOIL ANALYSIS.

C. SOD AVAILABILITY AND CONDITION: SOD IS TO BE DELIVERED TO THE SITE IN GOOD CONDITION. IT IS TO BE INSPECTED UPON ARRIVAL AND INSTALLED WITHIN 24 HOURS. SOD IS TO BE MOIST AND COOL TO ENSURE THAT DECOMPOSITION HAS NOT BEGUN AND IS TO BE FREE OF PESTS, DISEASES, OR BLEMISHES. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE EXISTING CONDITIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FURNISHING AND LAYING ALL SOD REQUIRED ON THE PLANS. HE SHALL FURNISH NEW SOD AS SPECIFIED ABOVE AND LAY IT SO AS TOO COMPLETELY SATISFY THE INTENT AND MEANING OF THE PLANS AND SPECIFICATION AT NO EXTRA COST TO THE OWNER. IN THE CASE OF ANY DISCREPANCY IN THE AMOUNT OF SOD TO BE REMOVED OR AMOUNT TO BE USED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPORT SUCH TO THE PROJECT REPRESENTATIVE PRIOR TO COMMENCING THE WORK.

D. SOD LAYING: THE SURFACE UPON WHICH THE NEW SOD TO BE LAID WILL BE PREPARED AS SPECIFIED IN THE DETAIL AND BE LIGHTLY WATERED BEFORE LAYING. AREAS WHERE SOD IS TO BE LAID SHALL BE CUT TRIMMED, OR SHAPED TO RECEIVE FULL WIDTH SOD (MINIMUM TWELVE (12) INCHES). NO PARTIAL STRIP OR PIECES WILL BE ACCEPTED.

E. SOD SHALL BE TAMPED LIGHTLY AS EACH PIECE IS SET TO ENSURE THAT GOOD CONTACT IS MADE BETWEEN EDGES AND ALSO THE GROUND. IF VOIDS OR HOLES ARE DISCOVERED, THE SOD PIECE(S) IS (ARE) TO BE RAISED AND TOPSOIL IS TO BE USED TO FILL IN THE AREAS UNTIL LEVEL. SOD LAID ON ANY SLOPED AREAS SHALL BE ANCHORED WITH WOODEN DOWELS OR OTHER MATERIALS WHICH ARE ACCEPTED BY THE GRASS SOD INDUSTRY.

F. SOD SHALL BE ROLLED WITH A ROLLER THAT IS AT LEAST 50% FULL IMMEDIATELY AFTER INSTALLATION TO ENSURE THE FULL CONTACT WITH SOIL IS MADE.

G. APPLY WATER DIRECTLY AFTER LAYING SOD. RAINFALL IS NOT ACCEPTABLE.

H. WATERING OF THE SOD SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR BY WHATEVER MEANS NECESSARY TO ESTABLISH THE SOD IN AN ACCEPTABLE MANNER TO THE END OF THE MAINTENANCE PERIOD. IF AN IRRIGATION SYSTEM IS IN PLACE ON THE SITE, BUT FOR WHATEVER REASON, WATER IS NOT AVAILABLE IN THE SYSTEM. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO WATER THE SOD BY WHATEVER MEANS, UNTIL THE SOD IS ACCEPTED BY THE PROJECT REPRESENTATIVE.

I. PROTECTION OF THE NEWLY LAID SOD SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ACCEPTABLE VISUAL BARRIERS, TO INCLUDE BARRICADES SET APPROPRIATE DISTANCES WITH STRINGS OR TAPES BETWEEN BARRIERS, AS AN INDICATION OF NEW WORK. THE CONTRACTOR IS TO RESTORE ANY DAMAGED AREAS CAUSED BY OTHERS (INCLUDING VEHICULAR TRAFFIC), EROSION, ETC, UNTIL SUCH TIME AS THE LAWN IS ACCEPTED BY THE OWNER.

J. ALL SOD THAT HAS NOT BEEN LAID WITHIN 24 HOURS SHALL BE DEEMED UNACCEPTABLE AND WILL BE REMOVED FROM THE SITE.

3.5 WEED BARRIER

A. FOR THE HEALTH OF THE SOIL AND THE MICROORGANISMS, WEED BARRIER IS NOT RECOMMENDED. IF USE IS REQUIRED OR REQUESTED, DO NOT PLACE IN ANNUAL OR GRASS AREAS.

B. CUT WEED BARRIER BACK TO THE EDGE OF THE PLANT ROOTBALL.

C. OVERLAP ROWS OF FABRIC MIN. 6"

D. STABLE FABRIC EDGES AND OVERLAPS TO GROUND.

END OF SECTION

GENERAL LANDSCAPE NOTES

GRADING AND DRAINAGE REQUIREMENTS

- AS PER CODE, ALL GRADING IS TO SLOPE AWAY FROM ANY STRUCTURE. SURFACE OF THE GROUND WITHIN 10' FEET OF THE FOUNDATION SHOULD DRAIN AWAY FROM THE STRUCTURE WITH A MINIMUM FALL OF 6"
- AS PER CODE, FINISHED GRADE WILL NOT DRAIN ON NEIGHBORING PROPERTIES
- A MINIMUM OF 6" OF FOUNDATION WILL BE LEFT EXPOSED AT ALL CONDITIONS
- LANDSCAPE CONTRACTOR TO MAINTAIN OR IMPROVE FINAL GRADE AND PROPER DRAINAGE ESTABLISHED BY EXCAVATOR, INCLUDING BUT NOT LIMITED TO ANY MAINTENANCE, PRESERVATION, OR EXAGGERATION OF SLOPES, BERMS, AND SWALES.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY DAMAGED OR IMPROPER WATERFLOW OF ALL SWALES, BERMS, OR GRADE
- DEVICES FOR CHANNELIZING ROOF RUN-OFF SHOULD BE INSTALLED FOR COLLECTION AND DISCHARGE OF RAINWATER AT A MINIMUM OF 10' FROM THE FOUNDATION, OR BEYOND THE LIMITS OF FOUNDATION WALL BACKFILL; WHICHEVER DISTANCE IS GREATER

GENERAL LANDSCAPE NOTES

- LANDSCAPE CONTRACTOR SHALL HAVE ALL UTILITIES BLUE STAKED PRIOR TO DIGGING. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AT CONTRACTORS EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
- DURING THE BIDDING AND INSTALLATION PROCESS, THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES OF ALL MATERIALS. IF DISCREPANCIES EXIST, THE PLAN SHALL DICTATE QUANTITIES TO BE USED.
- ALL PLANT MATERIAL SHALL BE PLANTED ACCORDING TO ANSI STANDARDS WITH CONSIDERATION TO INDIVIDUAL SOIL AND SITE CONDITIONS, AND NURSERY CARE AND INSTALLATION INSTRUCTIONS.
- SELECTED PLANTS WILL BE ACCORDING TO THE PLANT LEGEND. IF SUBSTITUTIONS ARE NECESSARY, PROPOSED LANDSCAPE CHANGES MUST BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO LAYING SOD.
- SHOULD THE SITE REQUIRE ADDITIONAL TOPSOIL, REFER TO SOIL TEST WHEN MATCHING EXISTING SOIL. IF A MATCHING SOIL IS NOT LOCATABLE, A 6" DEPTH OF SANDY LOAM TOPSOIL (MIXED PRIOR TO SPREADING WITH 1% ORGANIC MATTER) CAN BE INCORPORATED INTO THE EXISTING SOIL USING THE FOLLOWING DIRECTIONS: SCARIFY TOP 6" OF EXISTING SUBSOIL AND INCORPORATE 3" OF NEW COMPOST ENRICHED TOPSOIL. SPREAD REMAINING TOPSOIL TO REACH FINISHED GRADE.
- EDGING, AS INDICATED ON PLAN, IS TO BE INSTALLED BETWEEN ALL LAWN AND PLANTER AREAS. ANY TREES LOCATED IN LAWN MUST HAVE A 4-0' TREE RING OF THE SAME EDGING.

LAWN/GRASS AREA

- SOD
  - ALL LAWN AREAS TO RECEIVE MIN. 6" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED HYDROSEEDING. FINE LEVEL ALL AREAS PRIOR TO LAYING SOD ALL LAWN AREAS SHALL BE IRRIGATED WITH 100% COVERAGE BY POP-UP SPRAY HEADS AND GEAR-DRIVEN ROTORS. ALL DECIDUOUS AND CONIFER TREES PLANTED WITHIN SOD AREAS SHALL HAVE A FOUR FOOT (4') DIAMETER TREE RING COVERED WITH CHOCOLATE BROWN BARK MULCH, NO SHREDDED FINES. SUBMIT SAMPLES TO BE APPROVED BY LANDSCAPE ARCHITECT AND OWNER BEFORE INSTALLATION.
- SEED
  - **SOIL:** TEST SOIL FOR ADEQUATE FERTILITY. ANY WEEDS CURRENTLY ON THE SITE SHALL BE REMOVED BY EITHER MECHANICAL MEANS SUCH AS HAND PULLING OR SPRAYING WITH AN HERBICIDE SUCH AS GLYPHOSATE MIXED WITH A SURFACTANT. HERBICIDES SHOULD BE APPLIED BY A CERTIFIED PESTICIDE APPLICATOR . COMPACTED SOIL SHALL BE SCARIFIED TO A DEPTH OF 18 INCHES BEFORE ADDING 6" OF WEED FREE TOPSOIL WITH HIGH ORGANIC MATTER. FINE LEVEL ALL AREAS PRIOR TO HYDROSEEDING AND SET THE GRADE FOR POSITIVE DRAINAGE. TOPSOIL SHOULD BE SOFT AT TIME OF APPLICATION. FERTILIZER IS TO BE ADDED WHEN HYDROSEEDING. REFER TO SOIL TEST RESULTS AND HYDROSEEDING CONTRACTOR FOR APPLICATION RATES.
  - **SEED**: USE SEED MIXES AS SPECIFIED BY LANDSCAPE ARCHITECT OF PURE LIVE SEED (PLS) ON A BASIS/ACRE. THE OPTIMUM TIME TO PANT IS IN NOVEMBER BEFORE THE FIRST SNOW. DO NOT SOW OVER HEAVY SNOWPACK. SEED WILL LAY DORMANT AND BE READY TO GERMINATE ONCE THE GROUND THAWS AND WARMS IN LATE WINTER. IF SEEDING IN LATE FALL IS NOT POSSIBLE, SEED BEFORE APRIL 1. CONTACT SUMMIT SEED: DARRELL@SUMMITSEEDING.COM 435-709-8003.
  - **APPLICATION**: HYDROSEEDING SHALL CONSIST OF SEED, TACKIFIER, WOOD FIBER MULCH AND FERTILIZER IN A WATER BASED SLURRY. TANK MOUNTED TRUCK SHALL HAVE CONTINUOUS AGITATION. THE PUMP ON THE TRUCK WILL FORCE THE SLURRY THROUGH A TOP-MOUNTED DISCHARGE NOZZLE (TOWER). USE 2000 POUNDS WOOD FIBER MULCH AND 50-100 POUNDS OF TACKIFIER PER ACRE.
  - **IRRIGATION**: ALL AREAS MUST BE KEPT MOST WITHOUT PUDDLES OR RUNOFF USING FREQUENT DAYTIME WATER CYCLES. ADJUST AND MONITOR SPRINKLERS AND CLOCK TO ACHIEVE PROPER IRRIGATION.

- IF PERMANENT IRRIGATION IS NOT PLANNED, TEMPORARY IRRIGATION IS REQUIRED AT THE FOLLOWING SCHEDULE: FOR 8 WEEKS SOIL SHALL REMAIN DAMP DURING ESTABLISHMENT PERIOD WITHOUT PUDDLING ON SOIL SURFACE. APPLY WATER APPROXIMATELY THREE TIMES A DAY FOR 5-7 MINUTES FOR EACH IRRIGATION EVENT DEPENDING ON TEMPERATURE AND TIME OF YEAR. A SPARSE DENSITY IS EXPECTED. CONTINUE TEMPORARY IRRIGATION FOR ONE YEAR EVENTUALLY REDUCING WATER APPLICATION TO ONCE A WEEK, THEN ONCE EVERY TWO WEEKS TO FINALLY ONCE A MONTH. MONITOR PROGRESS OF ESTABLISHMENT AND ADJUST SPRINKLERS ACCORDINGLY. THE GOAL IS TO CREATE A HEALTHY STAND OF GRASSES WITH LITTLE TO NO IRRIGATION.
  - **WEED CONTROL AND MAINTENANCE:** MANDATORY WEED CONTROL IS REQUIRED TO REDUCE COMPETITION AND WEED SEED PRODUCTION. WEEDS MUST BE KEPT UNDER CONTROL BY MECHANICALLY PULLING OR CHEMICALLY SPRAYING AS DIRECTED BY THE APPLICATOR. APPLY A BROADLEAF HERBICIDE BIANNUALLY AND ESTABLISH A CONSISTENT REGIMEN OF MOWING AND FERTILIZING TO PREVENT WEEDS FROM PRODUCING SEED. MOW ONCE IN THE SPRING AND ONCE IN THE FALL BEFORE FERTILIZATION. FERTILIZER OPTION IS SUSTAIN 4-6-4 DEPENDING ON SOIL FERTILITY. MOW SHORTER THAN 4 INCHES. BAG ALL CUTTINGS TO REMOVE WEED SEED FROM PROPERTY. KEEP WEEDS CUT DOWN AND DO NOT LET THEM GO TO SEED. WEED SEED PRODUCTION IS THE GAUGE FOR WHEN TO MOW, WHICH GENERALLY OCCURS IN APRIL OR MAY AS WELL AS EARLY FALL DEPENDING ON TEMPERATURE AND MOISTURE. THIS PROCEDURE WILL BE REQUIRED UNTIL A HEALTHY STAND OF GRASSES IS EVIDENT AND COMPETING WELL WITH WEEDS. EXPECT FROM 1 TO 3 YEARS.
  - **PROGANICS BIOTIC SOIL MEDIA**: WHERE CONDITIONS MAY PROHIBIT ADDING TOPSOIL, PROGANICS BIOTIC SOIL MEDIA SHOULD BE APPLIED BY HYDROSEEDER AT 3500 LBS/ACRE WITH SEED AND FERTILIZER PRIOR TO THE APPLICATION OF WOOD MULCH(2000 LBS/ACRE) COMBINED WITH TACKIFIER (50-100 LBS/ACRE.)
  - **ADDING FORBS**: SHRUBS AND PERENNIALS, BY SEED OR CONTAINER, CAN BE ADDED ONCE WEEDS ARE UNDER CONTROL AND HERBICIDE IS NO LONGER NEEDED. USUALLY 1-2 YEARS AFTER HYDROSEEDING.

MULCH

- ORGANIC
  - PLANTING AREAS TO BE FREE OF WEEDS AND RECEIVE MIN. 12" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED PLANTINGS. PROVIDE 3" DEPTH OF ORGANIC MULCH TOP DRESSING. KEEP MULCH AWAY FROM TOP OF ROOT BALL OF ALL PLANT MATERIAL.
  - IF REQUIRED BY CITY, INSTALL DEWITT 5OZ WEED BARRIER LANDSCAPE FABRIC UNDER ALL MULCH AREAS. KEEP WEED BARRIER 1 FOOT AWAY FROM EDGE OF ROOT BALL OF ALL PLANT MATERIAL. IF WEED BARRIER IS NOT REQUIRED OR INSTALLED, AT OWNER'S APPROVAL, USE TREFLAN 10 AS A PRE-EMERGENT. APPLY ACCORDING TO LABEL DIRECTIONS BY CERTIFIED PESTICIDE APPLICATOR AFTER PLANTING AND AFTER APPLYING MULCH.
  - IF USING TREFLAN 10 WITHOUT WEED BARRIER, THIS AREA WILL ALSO NEED AN YEARLY MANAGEMENT PROGRAM. SUBMIT PROGRAM TO OWNER.
  - ANNUAL PLANTING AREAS AS SHOWN ON PLAN TO RECEIVE 4" OF SOIL AID MATERIAL (ORGANIC MULCH). NO MULCH SHALL BE PLACED WITHIN 12" OF TREE TRUNK AND 6" WITHIN BASE OF SHRUBS AND PERENNIALS. DO NOT COVER LOW BRANCHES OF SHRUBS WITH ROCK.
- INORGANIC
  - ROCK MULCH PLANTING AREAS TO BE FREE OF WEEDS AND RECEIVE MIN. 12" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED PLANTINGS. WHERE PLANTING IS SPARSE (GREATER THAN 4' DISTANCE BETWEEN PLANTS OR 20' BETWEEN GROUPINGS), ADDITIONAL TOPSOIL IS NOT NECESSARY EXCEPT FOR BACKFILLING PLANTING HOLE. PREPARE A HOLE TWICE THE WIDTH OF THE CONTAINER, WATER IN PLANT, BACKFILL WITH A 4:1 RATIO OF SOIL TO COMPOST. TAMP LIGHTLY AND WATER AGAIN. KEEP ROCK 12" AWAY FROM TRUNK OF TREES AND 6" AWAY FROM BASE OF SHRUBS AND PERENNIALS. DO NOT COVER LOW BRANCHES OF SHRUBS WITH ROCK.
  - IF REQUIRED BY CITY, INSTALL DEWITT 5OZ WEED BARRIER LANDSCAPE FABRIC UNDER ALL ROCK AREAS. KEEP WEED BARRIER 1 FOOT AWAY FROM EDGE OF ROOT BALL OF ALL PLANT MATERIAL. IF WEED BARRIER IS NOT REQUIRED OR INSTALLED, AT OWNER'S APPROVAL, USE TREFLAN 10 AS A PRE-EMERGENT. APPLY ACCORDING TO LABEL DIRECTIONS BY CERTIFIED PESTICIDE APPLICATOR AFTER PLANTING AND AFTER APPLYING MULCH.
  - IF USING TREFLAN 10 WITHOUT WEED BARRIER, THIS AREA WILL ALSO NEED AN YEARLY MANAGEMENT PROGRAM. SUBMIT PROGRAM TO OWNER. UPON REQUEST, A PLANT GUIDE IS AVAILABLE WITH OUR RECOMMENDATIONS REGARDING WEED BARRIER, PLANT CARE AND MAINTENANCE.

GENERAL IRRIGATION NOTES

- A NEW UNDERGROUND, AUTOMATIC IRRIGATION SYSTEM IS TO BE INSTALLED BY CONTRACTOR IN ALL LANDSCAPED AREAS. LAWN AREAS TO RECEIVE AT LEAST 100% HEAD TO HEAD COVERAGE AND PLANTER AREAS TO RECEIVE A FULL DRIP SYSTEM TO EACH TREE AND SHRUB. POINT SOURCE DRIP OR IN-LINE DRIP TUBING TO BE SECURED AT CENTER OF ROOT BALL, NOT AGAINST TRUNK. SEE IRRIGATION PLAN.

INSTALLER RESPONSIBILITIES AND LIABILITIES

- THESE PLANS ARE FOR BASIC DESIGN LAYOUT AND INFORMATION. LANDSCAPE CONTRACTOR IS REQUIRED TO USE TRADE KNOWLEDGE FOR IMPLEMENTATION. OWNER ASSUMES NO LIABILITIES FOR INADEQUATE ENGINEERING CALCULATIONS, MANUFACTURER PRODUCT DEFECTS, INSTALLATION OF ANY LANDSCAPING AND COMPONENTS, OR TIME EXECUTION.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE AND LIABLE FOR INSTALLATION OF ALL LANDSCAPING AND IRRIGATION SYSTEMS INCLUDING CODE REQUIREMENTS, TIME EXECUTIONS, INSTALLED PRODUCTS AND MATERIALS.

SITE MATERIALS LEGEND

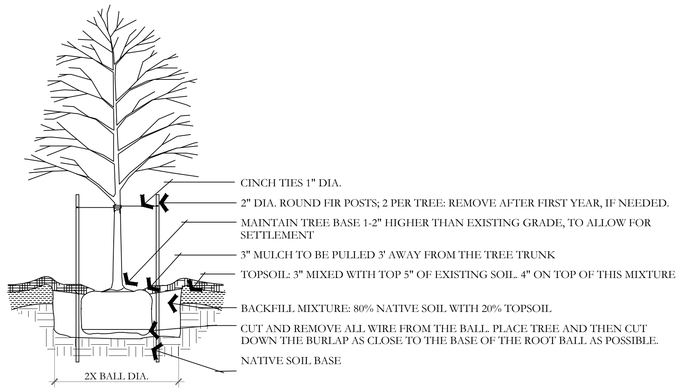
(NOTE: SITE MATERIALS QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN CASE OF DISCREPANCY, THE DRAWING SHALL TAKE PRECEDENCE.)

1 LANDSCAPE

	L-1.5	2" COPPER CANYON CRUSHED ROC OR APPROVED EQUAL. SUBMIT SAMPLES FOR LANDSCAPE ARCHITECT AND OWNER APPROVAL. PROVIDE 5" DEPTH OF ROCK MULCH TOP DRESSING. SEE INORGANIC MULCH LANDSCAPE NOTES FOR ADDITIONAL INFORMATION. SHEET LP-101.	11,186 sf
	L-1.8	2-4" TAN CRUSHED ROCK. SUBMIT SAMPLES FOR LANDSCAPE ARCHITECT AND OWNER APPROVAL. PROVIDE 4" DEPTH OF ROCK MULCH TOP DRESSING. SEE INORGANIC MULCH LANDSCAPE NOTES FOR ADDITIONAL INFORMATION. SHEET LP-101.	9,068 sf

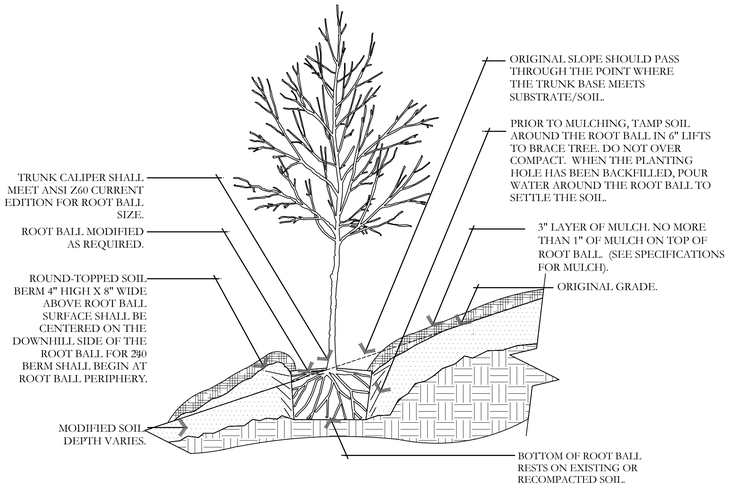
2 HARDSCAPE

	2-01	BOULDERS- DECORATIVE 3 FOOT ROUND. SUBMIT COLOR SAMPLES FOR ARCHITECT AND OWNER APPROVAL. SEE PLACEMENT INSTRUCTIONS ON DETAIL SHEET LP-501..	17
	2-05	5" DEEP STEE



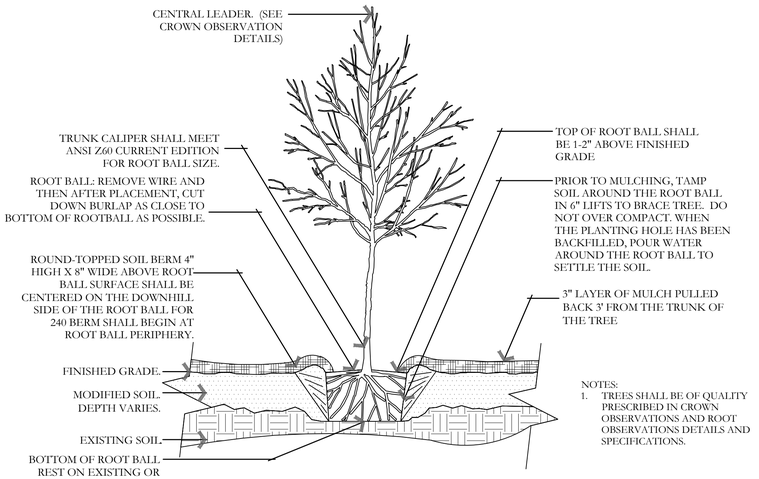
A DECIDUOUS TREE PLANTING

NOT TO SCALE



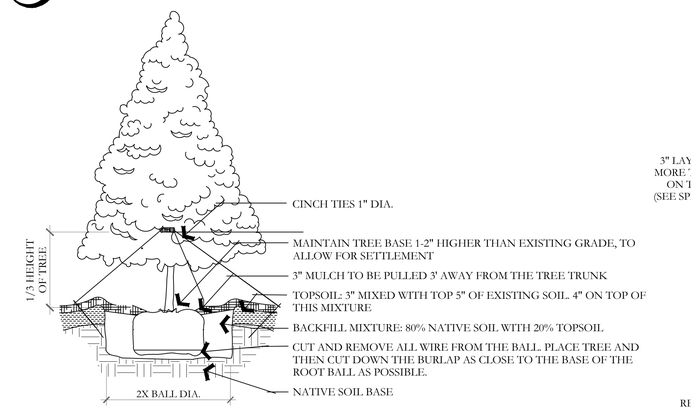
B TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



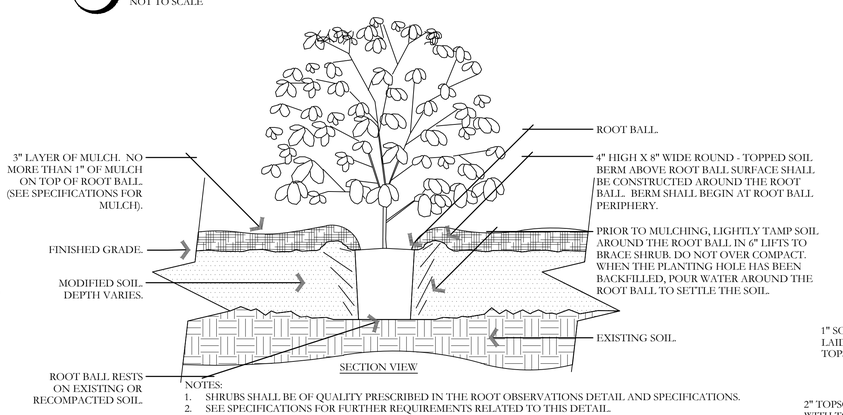
C TREE W/ BERM (EXISTING SOIL MODIFIED)

NOT TO SCALE



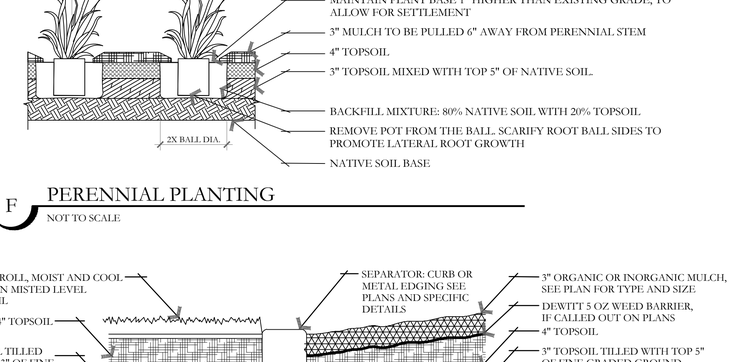
D EVERGREEN TREE PLANTING

NOT TO SCALE



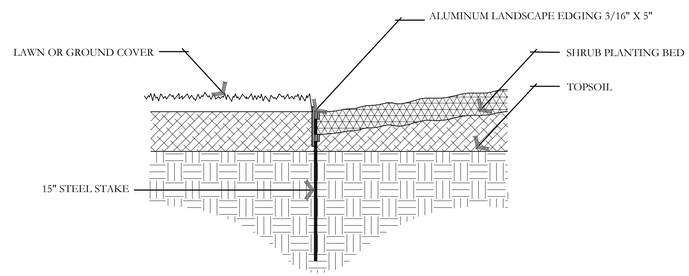
E SHRUB - MODIFIED SOIL

NOT TO SCALE



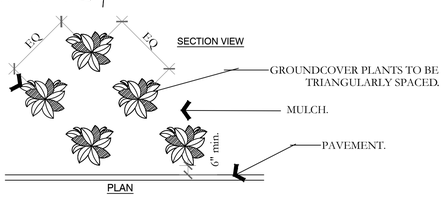
F PERENNIAL PLANTING

NOT TO SCALE



G METAL EDGING DETAIL

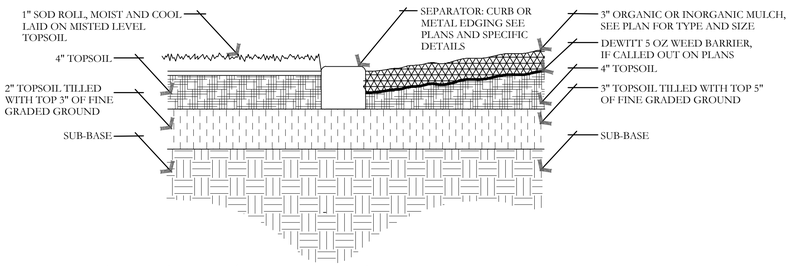
NOT TO SCALE



NOTES:
1- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION. THAT GROW
2- SMALL ROOTS AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
3- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

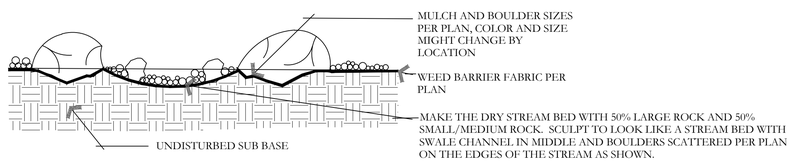
H PERENNIAL/GROUNDCOVER PLANTING

NOT TO SCALE



I SOD LAYING/MULCH DETAIL

NOT TO SCALE



J BOULDER AND DRY STREAM BED DETAIL

NOT TO SCALE

ISSUE DATE	PROJECT NUMBER	PLAN INFORMATION	PROJECT INFORMATION	DEVELOPER / PROPERTY OWNER / CLIENT	LANDSCAPE ARCHITECT / PLANNER	LICENSE STAMP	DRAWING INFO
12/9/2025	UT25136	** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025	STAGECOACH RETAIL 2429 N. STAGECOACH DR. SARATOGA SPRINGS, UTAH	CIR CIVIL ENGINEERING 10718 S. BECKSTEAD LANE, STE. 102 SOUTH JORDAN, UT 84095 801-949-6296	PKJ DESIGN GROUP Landscape Architecture & Planning & Visualization 3450 N. TRIUMPH BLVD. SUITE 102 LEHI, UTAH 84043 (801) 995-2217 www.pkjdesigngroup.com	LICENSED LANDSCAPE ARCHITECT JEREMY ANDREW ASHWORTH 812121-5301 12/9/2025 ELECTRONIC SEAL STATE OF UTAH	PM: JTA DRAWN: ACP CHECKED: KBA PLOT DATE: 12/9/2025

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2		
3		
4		

811 BLUE STAKES OF UTAH
UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

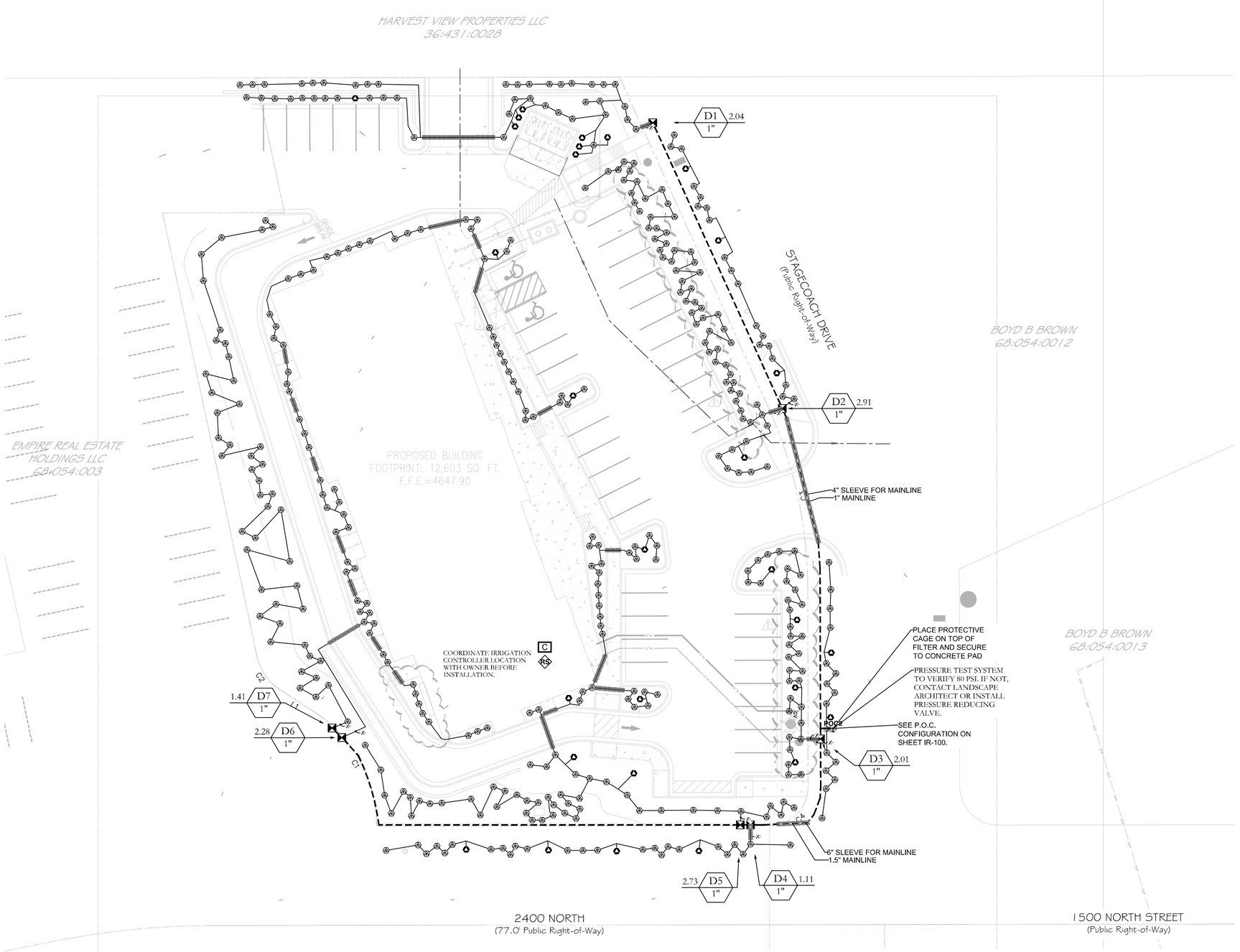
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LANDSCAPE DETAILS

CITY PERMIT SET

LP-501



IRRIGATION LEGEND

(NOTE: PLANT QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN CASE OF DISCREPANCY, TUE DRAWING SHALL TAKE PRECEDENCE.) IF YOU NEED HELP WITH A WATER AUDIT CONSULTATION, OR A PLANT MAINTENANCE SCHEDULE, CONTACT PKJ@PKJDESIGNGROUP.COM)

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird XCZ-100-IVMQ(2) 1" Wide Flow IVM Drip Control Kit for Commercial Applications. 1in. Ball Valve with 1in. PESBIVM Smart Valve w/ factory installed IVM-SOL 0.3-20 gpm and 1in. Pressure Regulating 40psi Quick-Check Basket Filter 0.3-20 gpm	7
	Rain Bird XFS-09-18 Drip Ring(SHRUB)	396
	Rain Bird XFS-09-18 Drip Ring(TREE)	29

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird 44-RC 1" 1in. Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, and 2-Piece Body.	1
	Shut Off Valve	1
M	Rain Bird EFB-CP-PRS-D 1-1/2" 2in. Brass Master Valve, that is Contamination Proof w/Self-Flushing Filter Screen. Globe Configuration, Reclaimed Water Compatible, and Purple Handle Cover Designates Non-Potable Water Use. With Pressure Regulator.	1
C	Rain Bird ESPLXIVM 60 Station, 2-Wire Controller w/ Smart Valve Technology. (1) ESPLXIVM 60-Station, Indoor/Outdoor, Plastic Wall-Mount Cabinet. System Requirements: Rain Bird LXIVM-XXX Integrated Valve Modules & 2-Wire Devices. Use Paige Electric Cable P7072D & Rain Bird WC20 Dry Splices ONLY. Ground System w/ (X) LXIVMSD Surge Device in Rain Bird Round Valve Boxes. Install Per Manufacturers Recommendations.	1
RS	Rain Bird WRZ-RC Wireless Rain Sensor Combo, includes 1 receiver and 1 rain sensor transmitter.	1
FS	Rain Bird FS-200-B 2in. Flow Sensor, Brass Model. Suggested Operating Range 10 GPM to 100 GPM. Size for Flow Not According to Pipe Size. Rain Bird Compatible Controllers: ESP-LXIVM(P) | LXD | LXME2(P) | ME3, or Controllers Accepting Custom K-Factor and Offset. Install in Rain Bird Valve Box.	1
POC2	Point of Connection 2"	1
	Irrigation Lateral Line: PVC Schedule 40 3/4"	2,927 lf
	Irrigation Mainline: PVC Schedule 40	501.5 lf
	Pipe Sleeve: PVC Class 200 SDR 21 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.	240.8 lf

Valve Callout
- Valve Number
- Valve Flow
- Valve Size

P.O.C. CONFIGURATION

(NOTE: PRESSURE TEST SYSTEM TO VERIFY 80 PSI. IF NOT, CONTACT LANDSCAPE ARCHITECT OR INSTALL PRESSURE REDUCING VALVE.)

POC SOURCE DATA
SHUTOFF VALVE
F AMIAD SCREEN FILTER
M MASTER VALVE
FS 1" FLOW SENSOR
QUICK COUPLER

ISSUE DATE	PROJECT NUMBER
12/9/2025	UT25136

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2		
3		
4		

PLAN INFORMATION

** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025

811 BLUE STAKES OF UTAH
UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

NORTH

0' 10' 20' 40' 80'

GRAPHIC SCALE: 1" = 20'

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

PKJ DESIGN GROUP
Landscape Architecture Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8139747-5301
12/9/2025
STATE OF UTAH

DRAWING INFO	
PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/9/2025

IRRIGATION OVERALL PLAN

CITY PERMIT SET

IR-100

IRRIGATION PLAN SPECIFICATIONS

IRRIGATION SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

Work to be done includes all labor, materials, equipment and services required to complete the Project irrigation system as indicated on the Construction Drawings, and as specified herein. Includes but is not limited to: Furnishing and installing underground and above ground sprinkler system complete with any accessories necessary for proper function and operation of the system. All plant material on the Project shall be irrigated. Remove and dispose of any existing sprinkler system components which are disturbed during the construction process and are not to be saved. Restoration of any altered or damaged existing landscape to original state and condition.

1.2 SYSTEM DESCRIPTION

A. Design of irrigation components: Locations of irrigation components on Construction Drawings may be approximate. Piping, sleeving and/or other components shown on Construction drawings may be shown schematically for graphic clarity and demonstration of component groupings and separations. All irrigation components shall be placed in landscaped areas, with the exception of pope and wire in sleeving under hardscapes. Actual routing of pipe, wire or other components may be altered due to site conditions not accounted for in the design process.

B. Construction requirements: Actual placement may vary as required to achieve a minimum of 100% coverage without overspray onto hardscape, buildings or other features.

C. Layout of Irrigation Components: During layout and staking, consult with Owner Approved Representative (hereafter referred to as OAR) to verify proper placement of irrigation components, and to provide Contractor recommendations for changes where revisions may be advisable. Small or minor adjustments to system layout are permissible to avoid existing field obstructions such as utility boxes or street light poles. Contractor shall place remote control valves in groups as practical to economize on quantity of manifold isolation valves. Quick coupler valves shall be placed with manifold groups and protected by manifold isolation valves. Quick coupler valves are shown on Construction Documents in approximate locations.

1.3 DEFINITIONS

A. Water Supply: Secondary water piping and components, furnished and installed by others to provide irrigation water to this Project, including but not limited to filter, saddles, nipples, spools, shut off valves, corporation stop valves, water meters, pressure regulation valves, and piping upstream of (or prior to) the Point of Connection.

B. Point of Connection: Location where the Contractor shall tie into the water supply. May require filter, saddle, nipples, spools, isolation valves or Stop and Waste valve for landscape irrigation needs and use.

C. Main Line Piping: Pressurized piping downstream of the Point of Connection to provide water to remote control valves and quick couplers. Normally under constant pressure.

D. Lateral Line Piping: Circuit piping downstream of remote control valves to provide water to sprinkler heads, drip systems or bubblers.

1.4 REFERENCES

A. The following standards will apply to the work of this Section:

a. ASTM-American Society for Testing and Materials

b. IA - The Irrigation Association: Main BMP Document, Landscape Irrigation Scheduling and Water Management Document.

1.5 SUBMITTALS

A. At least thirty (30) days prior to ordering of any materials, the Contractor shall provide manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system. Submittals shall be in three ring binders or other similar bound form. Provide five copies of submittals to OAR for distribution. Place cover or index sheet indicating order in submittal document. No material shall be ordered, delivered or any work preceded in the field until the required submittals have need reviewed in its entirety and stamped approved. Delivered material shall match the approved samples.

B. Operation and Maintenance Manual:

a. At least thirty (30) days prior to final inspection, the Contractor shall provide Operation and Maintenance manual to OAR, containing:

i. Manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system.

ii. Parts list for each operating element of the system

iii. Manufacturer printed literature on operation and maintenance of operating elements of the system.

iv. Section listing instructions for overall system operation and maintenance. Include directions for Spring Start-up and Winterization.

b. Project Record Copy

i. Maintain at project site one copy of all project documents clearly marked "Project Record Copy". Mark any deviation in material installation on Construction drawings. Maintain and update drawing at least weekly. Project Record Copy to be available to OAR on demand.

ii. Completed Project As Built Drawings

1. Prior to final inspection, prepare and submit to OAR accurate as-built drawings
2. Show detail and dimension changes made during installation. Show significant details and dimensions that were not shown in original Contract Documents.
3. Field dimension locations of sleeving, points of connection, main line piping, wiring runs not contained in main line pipe trenches, valves and valve boxes, quick coupler valves.
4. Dimensions are to be taken from permanent constructed surfaces, features, or finished edges located at or above finished grade.
5. Controller Map: upon completion of system, place in each controller a color coded copy of the area that controller services: indicating zone number, type of plant material and location on project that zone services. Laminate map with heat shrink clear plastic.

1.6 QUALITY ASSURANCE

A. Acceptance: Do not install work in this section prior to acceptance by OAR.

B. Regulatory Requirements: All work and materials shall be according to any and all rules, regulations or codes, whether they are State or Local laws and ordinances. Contract documents, drawings or specifications may not be construed or interpreted to permit work or materials not conforming to the above codes.

C. Adequate Water Supply: Water supply to this Project exists, installed by others. Connections to these supply lines shall be by this Contractor. Verify that proper connection is available to supply line and is of adequate size. Verify that secondary connection components may be installed if necessary. Perform static pressure test prior to commencement of work. Notify OAR in writing of problems encountered prior to proceeding.

D. Workmanship and Materials:

a. It is the intent of this specification that all material herein specified and shown on the construction documents shall be of the highest quality available and meeting the requirements specified.

b. All work shall be performed in accordance with the best standards of practice relating to the trade.

E. Contractor Qualifications:

a. Contractor shall provide document or resume including at least the following items:

i. That Contractor has been installing sprinklers on commercial projects for five previous consecutive years.

ii. Contractor is licensed to perform Landscape and Irrigation construction in the State of this Project.

iii. Contractor is bondable for the work to be performed.

iv. References of five projects of similar size and scope completed within the last five years. Three of the projects listed shall be local.

v. Listing of suppliers where materials will be obtained for use on this Project.

vi. Project site Foreman or Supervisor has at least five consecutive years of commercial irrigation installation experience. This person shall be a current Certified Irrigation Contractor in good standing as set forth by the Irrigation Association. This person shall be on Project site at least 75% of each working day.

vii. Evidence that Contractor currently employs workers in sufficient quantities to complete Project within time limits that are established by the Contract.

viii. All General laborers or workers on the Project shall be previously trained and familiar with sprinkler installation and have a minimum of one-year experience. Those workers performing tasks related to PVC pipe shall have certificates designated below.

1.7 DELIVERY STORAGE HANDLING

A. During delivery, installation and storage of materials for Project, all materials shall be protected from contamination, damage, vandalism, and prolonged exposure to sunlight. All material stored at Project site shall be neatly organized in a compact arrangement and storage shall not disrupt Project Owner or other trades on Project site. All material to be installed shall be handled by Contractor with care to avoid breakage or damage. Damaged materials attributed to Contractor shall be replaced with new at Contractor's expense.

1.8 SEQUENCING

A. Perform site survey, research utility records, contact utility location services. The Contractor shall familiarize himself with all hazards and utilities prior to work commencement. Install sleeving prior to installation of concrete, paving or other permanent site elements. Irrigation system Point of Connection components, backflow prevention and pressure regulation devices shall be installed and operational prior to all downstream components. All main lines shall be thoroughly flushed of all debris prior to installation of any sprinkler heads.

1.9 WARRANTY

A. Contractor shall provide one year Warranty. Warranty shall cover all materials, workmanship and labor. Warranty shall include filling and or repairing depressions or replacing turf or other plantings due to settlement of irrigation trenches or irrigation system elements. Valve boxes, sprinklers or other components settled from original finish grade shall be restored to proper grade. Irrigation system shall have been adjusted to provide proper, adequate coverage of irrigated areas.

1.10 OWNER'S INSTRUCTION

A. After system is installed, inspected, and approved, instruct Owner's Representatives in complete operation and maintenance procedures. Coordinate instruction with references to previously submitted Operation and Maintenance Manual.

1.11 MAINTENANCE

A. Furnish the following items to Owner's Representative:

a. Two quick coupler keys with hose swivels.

b. One of each type or size of quick coupler valve and remote control valve. Five percent of total quantities used of each sprinkler and sprinkler nozzle.

B. Provide the following services:

a. Winterize entire irrigation system installed under this contract. Winterize by 'blow-out' method using compressed air. Compressor shall be capable of minimum of 175 CFM. This operation shall occur at the end of first growing season after need for plant irrigation but prior to freezing. Compressor shall be capable of evacuating system of all water pressure regulation devices. Compressor shall be regulated to not more than 60 PSI. Start up system the following spring after danger of freezing has passed. Contractor shall train Owner's Representative in proper start-up and winterization procedure.

PART 2 - PRODUCTS

2.1 GENERAL NOTES

A. Contractor shall provide materials to be used on this Project. Contractor shall not remove any material purchased for this Project from the Project Site, nor mix Project materials with other Contractor owned materials. Owner retains right to purchase and provide project material.

2.2 POINT OF CONNECTION

A. The Contractor shall connect onto existing irrigation or water main line as needed for Poin(s) of Connection. Contractor shall install new main line as indicated.

2.3 CONNECTION ASSEMBLY

A. Secondary water shall be used on this Project. Install filter and RPZ as needed.

2.4 CONTROL SYSTEM

A. Power supply to the irrigation controller shall be provided for by this Contract.

B. Controller shall be as specified in the drawings. Controller shall be surge protected.

a. Installation of wall-mount/ground pedestal timer controllers: Irrigation contractor shall be responsible for this task. Power configuration for wall-mount/ground pedestal timer controllers shall be 120 VAC unless otherwise noted.

b. Locate Controller(s) in general location shown on Construction drawings. Coordinate power supply and breaker allocation with electrical contractor. Contractor shall be responsible for all power connections to Controllers, whether they are wall mount or pedestal mount. Contractor shall coordinate with electrical or other Project trades as needed to facilitate installation of power to controllers.

C. Wires connecting the remote control valves to the irrigation controller are single conductors, type PE. Wire construction shall incorporate a solid copper conductor and polyethylene (PE) insulation with a minimum thickness of 0.045 inches. The wires shall be UL listed for direct burial in irrigation systems and be rated at a minimum of 30 VAC. Paige Electric Co., LP specification number P7079D.

a. A minimum of 24" of additional wire shall be left at each valve, each splice box and at each controller.

b. Common wire shall be white in color, 12 gauge. Control wire shall be red in color, 14 gauge. Spare/extra wire (3 ft.) shall be looped within each valve box of the grouping it is to service.

D. RCV wire splicing connectors shall be 3M brand DBY or DBR. Wire splicing between controller and valves shall be avoided if at all possible. Any wire splices shall be contained within a valve box. Splices within a valve box that contains no control valves shall be stamped 'WIRE SPLICE' or 'WS' on box lid.

2.5 SLEEVING

A. Contractor shall be responsible to protect existing underground utilities and components. Sleeving minimum size shall be 2". Sleeving 2" through 4" in size shall be S/40 PVC solvent weld. Sleeving 6" and larger shall be CL 200 PVC gasketed. Sleeve diameter shall be at least two times the diameter of the pipe within the sleeve. Sleeves shall be extended 6" minimum beyond walk or edge of pavement. Wire or cable shall not be installed in the same sleeve as piping, but shall be installed in separate sleeves. Sleeve ends on sleeve sizes 4" and larger shall be capped with integral corresponding sized PVC slip cap, pressure fit, until used, to prevent contamination. Sleeves shall be installed at appropriate depths for main line pipe or lateral pipe.

2.6 MAIN LINE PIPE

A. All main line pipe 4" and larger shall be Class 200 gasketed bell end. All main line pipe 3" in size and smaller shall be Schedule 40 PVC solvent weld bell end.

a. Maximum flows allowed through main line pipe shall be:

3/4"	8 GPM
1"	12 GPM
1-1/2"	30 GPM
2"	53 GPM
2-1/2"	75 GPM
3"	110 GPM
4"	180 GPM

b. Main line pipe shall be buried with 24" cover

2.7 MAIN LINE FITTINGS

A. All main line fittings 3" and larger shall be gasketed ductile iron material. All ductile iron fittings having change of direction shall have proper concrete thrust block installed. All main line fittings smaller than 3" in size shall be Schedule 80 PVC.

2.8 ISOLATION VALVES

A. Isolation valves 3" and larger shall be Waterous brand model 2500 cast iron gate valve, resilient wedge, push on type, with 2" square operating nut. Place sleeve of 6" or larger pipe over top of valve vertically and then extend to grade. Place 10" round valve box over sleeve at grade.

B. Isolation valves 2-1/2" and smaller shall be Apollo brand 70 series brass ball valves, contained in a Carson Standard size valve box. Valves shall be installed with S/80 PVC TOE Nipples on both sides of the valve. Valve shall be placed so that the handle is vertical toward the top of the valve box in the 'off' position.

2.9 MANIFOLDS

A. Action Manifold fittings shall be used to create unions on both sides of each control valve, allowing the valve to be removed from the box without cutting piping. Valves shall be located in boxes with ample space surrounding them to allow access for maintenance and repair. Where practical, group remote control valves in close proximity, and protect each grouping with a manifold isolation valve as shown in details. Manifold Main Line (or Sub-Main Line) and all manifold components and isolation valves shall be at least as large as the largest diameter lateral served by the respective manifold.

2.10 REMOTE CONTROL VALVES

A. Remote control valves shall be as specified on the drawings. Remote control valves shall be located separately and individually in separate control boxes.

2.11 MANUAL CONTROL VALVES

A. Quick coupler valve shall be attached to the manifold sub-main line using a Lasco G17S212 swing joint assembly with snap-lock outlet and brass stabilizer elbow. Quick coupler valve shall be placed within a Carson 10" round valve box. Top of quick coupler valve cover shall allow for complete installation of valve box lid, but also allow for insertion and operation of key. Base of quick coupler valve and top of quick coupler swing joint shall be encased in ¾" gravel. Contractor shall not place quick coupler valves further than 200 feet apart, to allow for spot watering or supplemental irrigation of new plant material. Quick coupler valve at POC shall not be eliminated or relocated.

2.12 LATERAL LINE PIPE

A. All lateral piping shall be Schedule 40 PVC, solvent weld, and bell end. Lateral pipe shall be buried with 12-18" of cover typically. Lateral pipe shall be ¾", 1", 1 ¼", 1 ½" or 2" in size as indicated on Construction Drawings.

2.13 LATERAL LINE FITTINGS

A. All lateral line fittings shall be S/40 PVC

2.14 SPRAY SPRINKLERS

A. Spray head sprinklers shall be as specified on the drawings. Nozzles shall be as specified on the drawings.

2.15 VALVE BOXES

A. Rainbird valve boxes shall be used on this project. Sizes are as directed in these Specifications, detail sheets or plan sheets. Valve boxes shall be centered over the control valve or element they cover. Valve box shall be sized large enough to allow ample room for services access, removal or replacement of valve or element. Valve box shall be set to flush to finish grade of topsoil or barked areas. Contractor shall provide extensions or stack additional valve boxes as necessary to bring valve box pit to proper grade.

2.16 IMPORT BACKFILL

A. All main line pipe, lateral line pipe and other irrigation elements shall be bedded and backfilled with clean soil, free of rocks 1" and larger. Contractor shall furnish and install additional backfill material as necessary due to rocky conditions. Trenches and other elements shall be compacted and/or water settled to eliminate settling. Debris from trenching operations un-usable for fill shall be removed from project and disposed of properly by Contractor.

2.17 OTHER PRODUCTS

A. Substitution of equivalent products is subject to the OAR's approval and must be designated as accepted in writing.

a. The Contractor shall provide materials to make the system complete and operational.

PART 3 - EXECUTION

3.1 PREPARATION

A. Contractor shall repair or replace work damaged by irrigation system installation. If damaged work is new, repair or replacement shall be performed by the original installer of that work. The existing landscape of this Project shall remain in place. Contractor shall protect and work around existing plant material. Coordination of trench and valve locations shall be laid out for the OAR prior to any excavation occurring. Plant material deemed damaged by the OAR shall be replaced with new plant material at Contractor's expense. Contractor shall not cut existing tree roots larger than 2" to install this Project. Route pipe, wire and irrigation elements around tree canopy drip line to minimize damage to tree roots. Contractor shall have no part of existing system used by other portions of site landscape without water for more than 24 hours at a time.

3.2 TRENCHING AND BACKFILLING

A. Pulling of pipe shall not be permitted on this project. Over excavate trenches both in width and depth. Ensure base of trench is rock or debris free to protect pipe and wire. Grade trench base to ensure flat, even support of piping. Backfill with clean soil or import material. Contractor shall backfill no less than 2" around entire pipe with clean, rock free fill. Main line piping and fittings shall not be backfilled until OAR has inspected and pipe has passed pressure testing. Perform balance of backfill operation to eliminate any settling.

3.3 SLEEVING

A. Sleeve all piping and wiring that pass under paving or hardscape features. Wiring shall be placed in separate sleeving from piping. Sleeves shall be positioned relative to structures or obstructions to allow for pipe or wire within to be removed if necessary.

3.4 GRADES AND DRAINAGE

A. Place irrigation pipe and other elements at uniform grades. Winterization shall be by evacuation with compressed air. Automatic drains shall not be installed on this Project. Manual drains shall only be installed at POC where designated on Construction Drawings.

3.5 PVC PIPE

A. Install pipe to allow for expansion and contraction as recommended by pipe manufacturer.

B. Install main line pipes with 18" of cover, lateral line pipes with 12" of cover.

C. Drawings show diagrammatic or conceptual location of piping - Contractor shall install piping to minimize change of direction, avoid placement under large trees or large shrubs, avoid placement under hardscape features.

D. Plastic pipe shall be cut squarely. Burrs shall be removed. Spigot ends of pipes 3" and larger shall be beveled.

E. Pipe shall not be glued unless ambient temperature is at least 50 degrees F. Pipe shall not be glued in rainy conditions unless properly tented. All solvent weld joints shall be assembled using IPS 711 glue and P70 primer according to manufacturer's specification, no exceptions. All workers performing glue operations shall provide evidence of certification. Glued main line pipe shall cure a minimum of 24 hours prior to being energized. Lateral lines shall cure a minimum of 2 hours prior to being energized and shall not remain under constant pressure unless cured for 24 hours.

F. Appropriate thrust blocking shall be performed on fittings 3" and larger. All threaded joints shall be wrapped with Teflon tape or paste unless directed by product manufacturer or sealing by o-ring.

3.6 CONTROLLERS

A. All grounding for pedestal controllers shall be as directed by controller manufacturer and ASIC guidelines, not to exceed a resistance reading of 5 OHMs.

B. Locate controllers in protected, inconspicuous places, when possible. Coordinate location of pedestal controllers with Landscape Architect to minimize visibility.

C. Coordinate location of wall mount controllers with building or electrical Contractor to facilitate electrical service and future maintenance needs. Wall mount shall be securely fastened to surface. If exterior mounted, wall mount controllers shall have electrical service wire and field control wire in separate, appropriate sized weatherproof electrical conduit, PVC pipe shall not be used.

D. Wiring under hardscape surfaces shall be placed continuously in conduit. Contractor shall be responsible to coordinate sleeving needs for conduit or sweeps elbows from exterior to interior of building.

E. Pedestal controllers shall be placed upon VIT-Strong Box Quick Pad as per manufacturer's recommendations. Controllers shall be oriented such that Owner's Representative maintenance personnel may access easily and perform field system tests efficiently.

F. Place Standard valve box at base of controller or nearby to allow for three to five feet of slack field control wire to be placed at each controller. This Contractor shall provide conduit access if needed for Electrical Contractor. Electrical supply and installation, as well as hook-up to controller shall be by this Contractor.

G. Electrical contractor is in charge of providing 1.5" conduit from controller to outside landscape area. Provide power and room for controller. Provide ethernet to hardwire power into the controller.

3.7 VALVES

A. Isolation valves, remote control valves, and quick coupler valves shall be installed according to manufacturer recommendation and Contract Specifications and Details.

B. Valve boxes shall be set over valves so that all parts of the valve can be reached for service.

C. Valve box and lid shall be set to be flush with finished grade. Only one remote control valve may be installed in a valve box. Place a minimum of 4" of ¼" washed gravel beneath valve box for drainage. Bottom of remote control valve shall be a minimum of 2" above gravel.

3.8 SPRINKLER HEADS

A. No sprinkler shall be located closer than 6" to walls, fences, or buildings.

B. Heads adjacent to walks, curbs, or paths shall be located at grade and 2" away from hardscape.

C. Control valves shall be opened. Then fully flush lateral line pipe and swing joints prior to installation of sprinklers.

D. Spray heads shall be installed and flushed again prior to installation of nozzles.

E. Contractor shall be responsible for adjustment if necessary due to grade changes during landscape construction.

3.9 FIELD QUALITY CONTROL

A. Main line pipes shall not be backfilled or accepted until the system has been tested for 2 hours at 100 psi.

B. Main line pressure test shall include all pipe and components from the point of connection to the upstream side of remote control valves. Test shall include all manifold components under constant pressure. Piping may be tested in sections that can be isolated.

C. Contractor shall provide pressurized water pump to increase or boost pressure where existing static pressure is less than 100 psi.

D. Schedule testing with OAR 48 hours in advance for approval.

E. Leaks or defects shall promptly be repaired or rectified at the Contractors expense and retested until able to pass testing.

F. Grounding resistance at pedestal controller shall also be tested and shall not exceed 5 OHMs.

3.10 ADJUSTMENT

A. Sprinkler heads shall be adjusted to proper height when installed. Changes in grade or adjustment of head height after installation shall be considered a part of the original contract and at Contractor's expense.

B. Adjust all sprinkler heads for arc, radius, proper trim and distribution to cover all landscaped areas that are to be irrigated.

C. Adjust sprinklers so they do not water buildings, structures, or other hardscape features.

D. Adjust run times of station to meet needs of plant material the station services.

3.11 CLEANING

A. Contractor shall be responsible for cleanliness of jobsite. Work areas shall be swept cleanly and picked up daily.

B. Open trenches or hazards shall be protected with yellow caution tape.

C. Contractor is responsible for removal and disposal of offsite trash and debris generated as a result of this Project.

D. OAR shall perform periodic as well as a final cleanliness inspection.

E. Contractor shall leave Project in at least a 'broom clean' condition.

END OF SECTION

WATERING SCHEDULE

90 Day Establishment Period Irrigation Schedule

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		45 MIN.		45 MIN.		45 MIN.		Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.		2 HOURS			2 HOURS			precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	2 GAL/HR.		2 HOURS						

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event. Shrubs to be watered so soil is moist 6" below root ball. Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress.

Regular Irrigation Schedule: Begin Spring Watering May 15 (Turf irrigation event once every 5-7 days; Shrubs 2-4 times/month)

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.						Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	No Water								

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions

Regular Irrigation Schedule: Begin Summer Watering June 15 (Turf irrigation event once every 2-3 days; Shrubs 1 time/week)

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.		60 MIN.		60 MIN.		Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	2 GAL/HR.			1 HOUR					

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions
Reference Utah DNR weekly watering guide: https://conservewater.utah.gov/weekly-lawn-watering-guide/

Regular Irrigation Schedule: Begin Fall Watering September 1-End Fall Watering October 15 (Turf irrigation event once every 5-7 days; Shrubs 2-4 time/month)

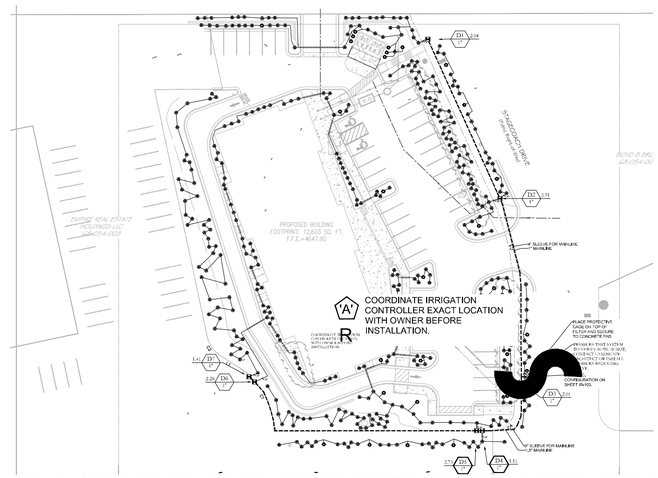
Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.						Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	No Water								

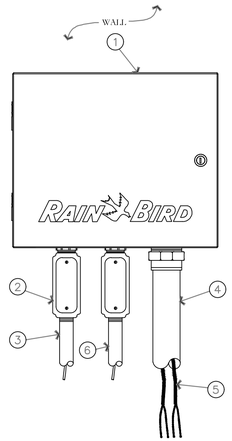
Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions

IRRIGATION NOTES

1. BEFORE WORK IS TO COMMENCE, BLUE STAKES/DIG LINE IS TO BE CALLED AND NOTIFIED. IF ANY DAMAGE TO UTILITIES HAPPEN DURING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR IT AT THEIR EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS IN ACCORDANCE WITH CITY AND/OR COUNTY CODES AND COMPLY WITH SPECIFICATIONS AND DRAWINGS.
3. INVESTIGATE TO MAKE SURE THAT THE IRRIGATION SYSTEM IS, IN FACT, BEING CONNECTED TO A SECONDARY SYSTEM. IF IT IS NOT CONNECTED TO SECONDARY, CONTACT THE OWNER AND LANDSCAPE ARCHITECT TO COORDINATE A CULINARY SYSTEM AND REQUIRED COMPONENTS. A FUNCTIONING AMIAD FILTER IS TO BE USED AT THE POINT OF CONNECTION.
4. VERIFY THAT THE POINT OF CONNECTION IS IN THE CORRECT LOCATION BEFORE INSTALLATION. ALL CONNECTIONS ON THIS PROJECT ARE TO SECONDARY WATER AND SHOULD BE NOTED AS SUCH; THEREFORE, ALL PARTS MUST MEET WATER STANDARDS THAT PERTAIN TO SECONDARY WATER USE PURPLE VALVE BOXES FOR SECONDARY WATER SYSTEMS.
5. ON OCCASION AND FOR GRAPHIC PURPOSES ONLY, THE IRRIGATION SYSTEM MIGHT BE SHOWN IN HARDSCAPE AREAS. THIS IRRIGATION IS TO BE PLACED IN LANDSCAPED AREAS ON THE PROPERTY SITE.
6. CONTRACTOR SHALL USE ONLY COMMERCIAL GRADE IRRIGATION PRODUCTS. THIS INCLUDES PIPE TO BE SCHEDULE 40 PVC OR BETTER. NO POLY PIPE IS TO BE USED. FITTINGS UP TO 1 1/2" MUST BE SCHEDULE 40 OR BETTER. FITTINGS LARGER THAN 1 1/2" SHALL BE SCHEDULE 80 OR BETTER. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACCURATE COUNTS AND QUANTITIES OF ALL IRRIGATION MATERIALS FOR BIDDING AND INSTALLATION.
7. MAIN LINES SHALL BE A MINIMUM OF 24" DEEP AND LATERAL LINES A MINIMUM OF 12" DEEP. NO ROCK GREATER THAN 1/2" DIAMETER SHALL BE ALLOWED IN TRENCHES. TRENCHING BACKFILL MATERIAL SHALL BE COMPACTED TO PROPER FINISHED GRADE.
8. NO IRRIGATION MAIN LINE MAY BE LOCATED WITHIN 5 FEET OF ANY STRUCTURE.
9. TO AVOID PIPE DAMAGE, ADJUST LOCATION OF PIPE TO NOT BE DIRECTLY UNDER PLANT MATERIALS. VALVE BOXES ARE PREFERRED TO BE IN PLANTER BEDS INSTEAD OF THE LAWN. SYSTEM IS TO BE WINTERIZED IN THE LATE FALL.
10. PLAN INDICATES 100% OR BETTER HEAD TO HEAD COVERAGE. SHOULD CONTRACTOR FIND DISCREPANCIES DUE TO NECESSARY FIELD ADJUSTMENTS, CONTACT LANDSCAPE ARCHITECT FOR IRRIGATION CORRECTION.
11. DRIP IRRIGATION TO BE INSTALLED PER DETAILS. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS. TUBING SHOULD REST TOWARD OUTER EDGE OF FOOTBALL AND NOT AGAINST TRUNK OF PLANT.
12. A QUICK COUPLER SHALL BE INSTALLED AT POINT OF CONNECTION TO ALLOW BLOW OUT OF SYSTEM BY AIR COMPRESSOR AT END OF EACH SEASON.
13. INSTALL SLEEVES FOR ALL PIPES AND WIRE CONDUIT THAT ARE PLACED UNDER PAVEMENT AND SIDEWALKS. SLEEVES SHALL BE 2 SIZES LARGER THAN PIPE BEING PLACED INTERNALLY. WIRE CONDUIT SHALL BE INSTALLED IN CLASS 200 PIPE. AT ANY DIRECTIONAL CHANGE THAT OCCURS, A JUNCTION BOX IS TO PLACED.
14. CONDUITS CAN NOT BE SHARED BY WATER AND ELECTRICAL LINES. ALL WIRE TO BE PUT IN PVC CONDUIT. ALL WIRE CONNECTIONS TO BE PLACED IN A VALVE BOX. ALL WIRE CONNECTIONS TO USE WATERPROOF WIRE CONNECTORS WITH AT LEAST 3' OF EXTRA WIRE. PROVIDE PLENTY OF EXTRA WIRE AT EVERY DIRECTIONAL CHANGE. INSULATED 14 GAUGE COPPER TO BE USED FOR ALL CONTROL WIRES AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.
15. CONTRACTOR TO INSTALL LIGHTNING ARRESTOR AND GROUNDING RODS ON SITE PER MANUFACTURER'S RECOMMENDATIONS, SEE DETAILS.
16. CONTRACTOR TO SEPARATE SYSTEM (CONTROLLER, VALVES, AND DIFFERENT COLORED WIRE) FROM CITY MAINTAINED PROPERTY AND HOA/OWNER MAINTAINED PROPERTY.
17. DUCT TAPE ALL SLEEVES TO PREVENT SOIL OR OTHER DEBRIS ENTERING PIPE. IDENTIFY ALL SLEEVES BY WOOD OR PVC STAKES AND SPRAY PAINT WITH MARKING PAINT. REMOVE STAKES ONCE IRRIGATION SYSTEM IS COMPLETE.
18. TO PREVENT EROSION AND LOW POINT DRAINAGE CONTRACTOR SHALL INSTALL CHECK VALVES
19. LOCATE SPRAY HEADS NO CLOSER THAN 6" FROM WALLS, FENCES OR BUILDINGS AND 2" AWAY FROM WALKS, PATHS OR CURBS.
20. PRESSURE TEST MAINLINE FOR LEAKS PRIOR TO BACKFILLING. CONTACT LANDSCAPE ARCHITECT/OWNER AT THIS TIME FOR COMPLIANCE.
21. CONTRACTOR TO CONSULT WITH OWNER ON EXACT LOCATION OF CONTROLLER. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR AND OWNER FOR THE POWER SUPPLY. INSTALL ALL PER MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL INSTALL A RAIN SENSOR WITH THE CONTROLLER UNLESS OTHERWISE DIRECTED BY OWNER OR LANDSCAPE ARCHITECT.
22. WHEN PIPE SIZE IS LARGER THAN 3" MAKE SURE THAT THRUST BLOCKS ARE USED.
23. LATURAL LINES SHALL BE NO SMALLER THAN 3/4". LANDSCAPE CONTRACTOR TO ENSURE THE FOLLOWING PIPE SIZES DO NOT EXCEED THE SUGGESTED GPM LISTED BELOW:

I	3/4"	8 GPM
II	1"	12 GPM
III	1-1/2"	30 GPM
IV	2"	53 GPM
V	2-1/2"	75 GPM
VI	3"	110 GPM
VII	4"	180 GPM


'A'
COORDINATE IRRIGATION CONTROLLER EXACT LOCATION WITH OWNER BEFORE INSTALLATION.
PROPOSED BUILDING FOOTPRINT: 12,803 SQ. FT. F.F.E.=4647.90
EXISTING LOT LINE
EXISTING CURB
EXISTING ASPHALT
PROPOSED ASPHALT
PROPOSED CONCRETE
EXISTING CONCRETE
EXISTING BUILDING
PROPOSED BUILDING
PROPOSED LANDSCAPING
EXISTING LANDSCAPING
EXISTING TREE
PROPOSED TREE
EXISTING SIGN
PROPOSED SIGN
EXISTING LIGHT POLE
PROPOSED LIGHT POLE
EXISTING FIRE HYDRANT
PROPOSED FIRE HYDRANT
EXISTING POWER POLE
EXISTING TRANSFORMER
EXISTING GAS METER
EXISTING GAS VALVE
EXISTING WATER METER
EXISTING WATER VALVE
EXISTING SEWER MANHOLE
EXISTING STORM DRAIN MANHOLE
EXISTING STORM DRAIN INLET
EXISTING STORM DRAIN CLEANOUT
EXISTING SEWER CLEANOUT
EXISTING FIRE DEPARTMENT CONNECTION
EXISTING MAIL BOX
EXISTING TRAFFIC SIGNAL BOX
EXISTING TRAFFIC SIGNAL POLE
EXISTING TRAFFIC SIGNAL CONTROLLER
EXISTING TRAFFIC SIGNAL CONDUIT
EXISTING TRAFFIC SIGNAL CAMERA
EXISTING TRAFFIC SIGNAL PEDESTRIAN BUTTON
EXISTING TRAFFIC SIGNAL PEDESTRIAN SIGNAL
EXISTING TRAFFIC SIGNAL VEHICLE SIGNAL
EXISTING TRAFFIC SIGNAL LOOP
EXISTING TRAFFIC SIGNAL CABINET
EXISTING TRAFFIC SIGNAL SIGN
EXISTING TRAFFIC SIGNAL MAST ARM
EXISTING TRAFFIC SIGNAL SPAN WIRE
EXISTING TRAFFIC SIGNAL SPAN POLE
EXISTING TRAFFIC SIGNAL SPAN WIRE ANCHOR
EXISTING TRAFFIC SIGNAL SPAN WIRE ANCHOR POLE



1. TWO-WIRE CONTROLLER: RAIN BIRD ESP-LXIVM/PRO IN LXMM METAL CABINET WITH OUTSIDE WALL MOUNT. INSTALL CONTROLLER AND CABINET ON WALL PER MANUFACTURER'S RECOMMENDATIONS.
2. JUNCTION BOX
3. 1-INCH CONDUIT AND FITTINGS FOR POWER SUPPLY WIRE
4. 2-INCH CONDUIT AND FITTINGS FOR TWO-WIRE CABLE
5. MAXICABLE TWO-WIRE PATH TO FIELD DEVICES, USE A DIFFERENT CABLE JACKET COLOR FOR EACH PATH.
6. 1-INCH CONDUIT AND FITTINGS FOR GROUND WIRE. ONLY FOR OUTDOOR INSTALLATIONS.

NOTES:
1. ESP-LXIVM CONTROLLER IS AVAILABLE IN TWO MODELS. THE LXIVM WITH 60 STATIONS AND THE LMIVM-PRO WITH 240 STATIONS. REFER TO THE CHART BELOW FOR DIFFERENCES BETWEEN THE TWO MODELS.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS. IF CONTROLLER IS MOUNTED INDOORS, USE POWER SUPPLY GROUND.

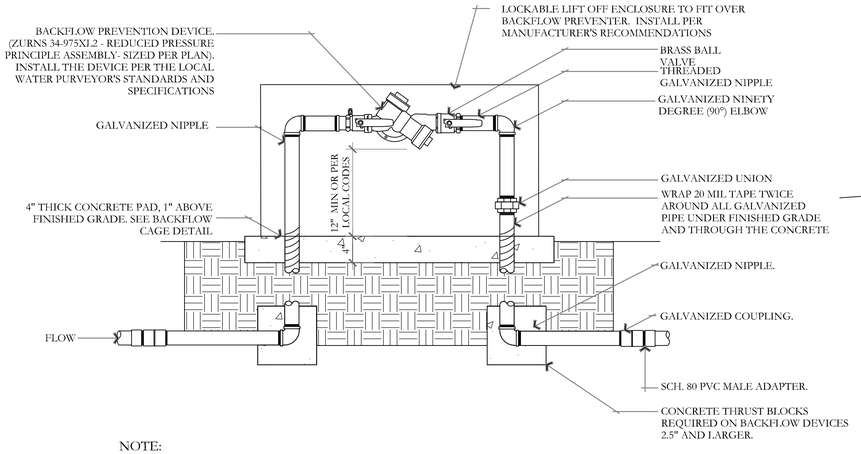
KEY SPECIFICATIONS

FEATURE / MODEL	MAX PROGRAMS	STATIONS	MAX SIMULSTATIONS	MASTER VALVES	FLOW SENSORS	WEATHER SENSORS
LX-IVM	10	60	8	5	5	4
LX-IVM PRO	40	240	16	10	10	8

A ESP-LXIVM/PRO TWO-WIRE CONTROLLER IN METAL CABINET

NOT TO SCALE

PKJ DESIGN GROUP

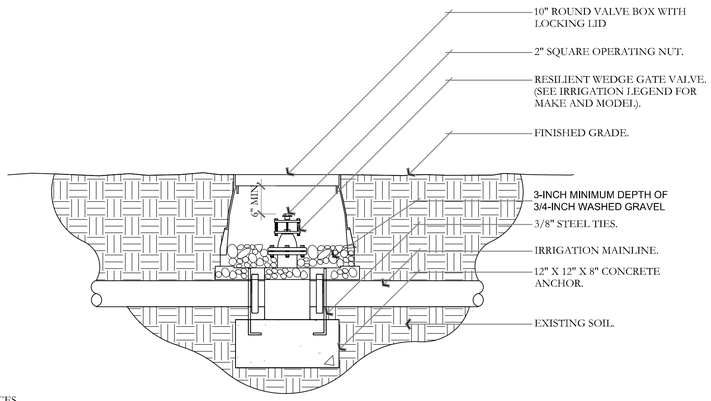


NOTE:
1. GALVANIZED NIPPLE SHALL EXTEND 12" PAST THE EDGE OF THE CONCRETE FOOTING.
2. SCH. 80 PVC MALE ADAPTER SHALL BE USED IN CONNECTION FROM GALVANIZE TO THE MAINLINE.
3. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE LANDSCAPE METER.
4. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED IN PLANTING AREA UNLESS APPROVED BY OWNER'S REPRESENTATIVE.
5. SEE DETAIL FOR BACKFLOW CAGE INSTALLATION.
6. ALL ASSEMBLY PARTS (THREADED NIPPLES, FITTINGS, ETC.) SHALL BE GALVANIZED OR BRASS PER LOCAL CODES AND REQUIREMENTS.
7. ALL BACKFLOW PREVENTION DEVICES SHALL HAVE FREEZE BLANKET INCLUDED UPON INSTALLATION.
8. ALL GALVANIZED CONNECTIONS SHALL TO BE MADE USING PIPE THREAD SEALANT. ALL SCH. 80 PVC TO GALVANIZED CONNECTIONS TO BE MADE USING TEFLON TAPE.

B BACKFLOW PREVENTION DETAIL

NOT TO SCALE

PKJ DESIGN GROUP



NOTES:
1. INSTALL GATE VALVE PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. VALVE BOX SHALL BE WRAPPED WITH MINIMUM 3 MIL. THICK PLASTIC AND SECURE IT TO VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
3. VALVE BOX SHALL BE LOCATED IN PLANTING AREA.

C GATE VALVE AND ANCHOR DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

D TYPICAL SLEEVING DETAIL

NOT TO SCALE

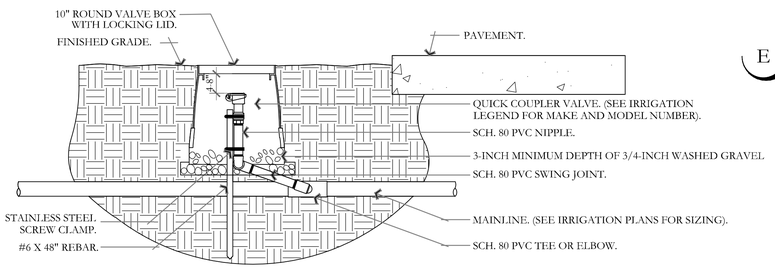
PKJ DESIGN GROUP

NOTES:
1. SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2. DIRECT BURIAL CONTROL WIRES SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT IF REQUIRED.
3. 2-WIRE IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
4. DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

E IRRIGATION TRENCHING DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

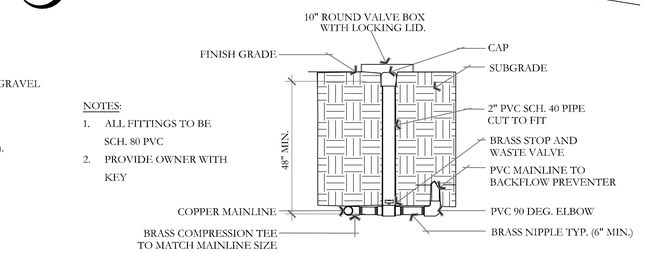


NOTES:
1. ALL THREADED CONNECTIONS SHALL BE INSTALLED USING TEFLON TAPE.
2. VALVE BOX SHALL BE WRAPPED WITH A MINIMUM 3 MIL THICK PLASTIC AND SECURED TO THE VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
3. ALL QUICK COUPLERS SHALL BE INSTALLED A MINIMUM OF 18" OFF OF THE MAINLINE.
4. VALVE BOXES SHALL BE LOCATED IN PLANTING AREAS.

G QUICK COUPLER DETAIL

NOT TO SCALE

PKJ DESIGN GROUP



NOTES:
1. ALL FITTINGS TO BE SCH. 80 PVC
2. PROVIDE OWNER WITH KEY

H STOP AND WASTE VALVE ASSEMBLY DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

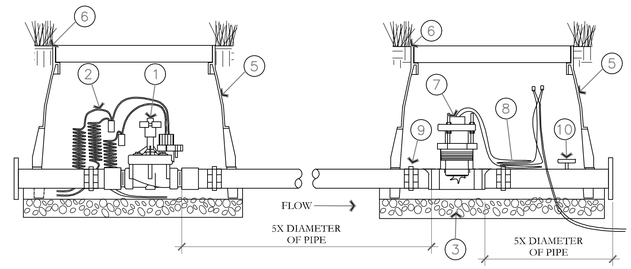
NOTES:
1. ALL FITTINGS TO BE SCH. 80 PVC
2. PROVIDE OWNER WITH KEY

F MANUAL DRAIN DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

1. NORMALLY CLOSED MASTER VALVE(S)
2. 36-INCH LENGTH OF COILED WIRE TO SATELLITE CONTROLLER SPARE STATION
3. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
5. VALVE BOX WITH COVER - RAINBIRD JUMBO BOX
6. FINISH GRADE
7. RAIN BIRD FS SERIES FLOW SENSOR(S). SEE COVER SHEET FOR SIZE
8. 36-INCH LENGTH OF COILED MAXI-CABLE TO FLOW SENSING
9. PVC PIPE UNION
10. BRASS BALL VALVE



I MASTER VALVE AND FLOW SENSOR DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

ISSUE DATE	PROJECT NUMBER	PLAN INFORMATION	PROJECT INFORMATION	DEVELOPER / PROPERTY OWNER / CLIENT	LANDSCAPE ARCHITECT / PLANNER	LICENSE STAMP	DRAWING INFO
12/9/2025	UT25136	** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025	STAGECOACH RETAIL 2429 N. STAGECOACH DR. SARATOGA SPRINGS, UTAH	CIR CIVIL ENGINEERING 10718 S. BECKSTEAD LANE, STE. 102 SOUTH JORDAN, UT 84095 801-949-6296	PKJ DESIGN GROUP Landscape Architecture / Planning & Visualization 3450 N. TRIUMPH BLVD. SUITE 102 LEHI, UTAH 84043 (801) 995-2217 www.pkjdesigngroup.com	LICENSED LANDSCAPE ARCHITECT JEREMY AINSWORTH 8129271-5301 12/9/2025 ELECTRONIC SEAL STATE OF UTAH	PM: JTA DRAWN: ACP CHECKED: KBA PLOT DATE: 12/9/2025

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1	CITY COMMENTS	11-18-2025
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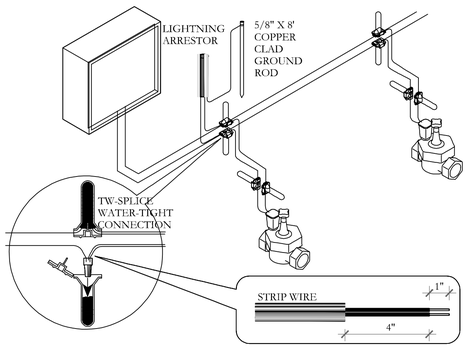
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IRRIGATION DETAILS

CITY PERMIT SET

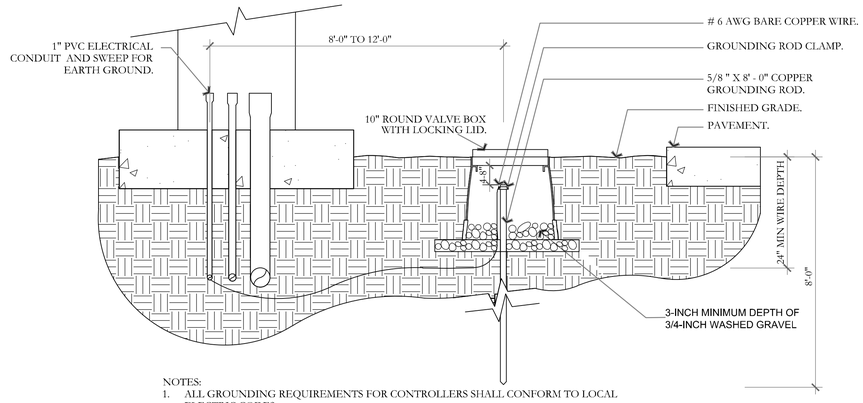
IR-501



J 2-WIRE CONNECTION DETAIL

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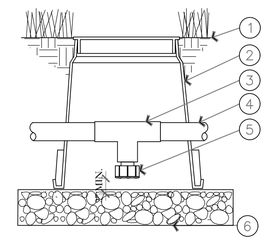


NOTES:
1. ALL GROUNDING REQUIREMENTS FOR CONTROLLERS SHALL CONFORM TO LOCAL ELECTRIC CODES.
2. GROUNDING ROD SHALL NOT BE LOCATED IN THE SAME TRENCH AS THE IRRIGATION MAINLINES OR LATERAL LINES.
3. VALVE BOX SHALL BE WRAPPED WITH A MINIMUM 3 MIL THICK PLASTIC AND SECURED TO THE VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
4. INSTALL GROUNDING ROD PER THE CONTROLLER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

K GROUNDING ROD DETAIL

NOT TO SCALE

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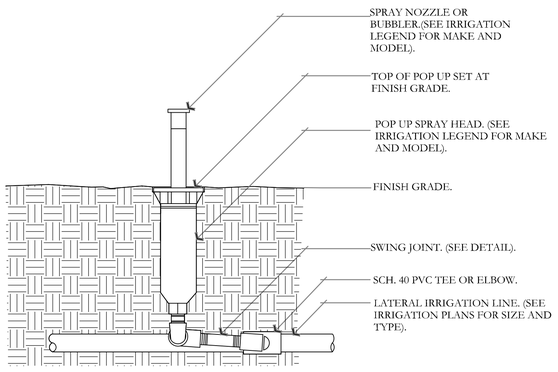


1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-6RND
3. PVC SCH 40 TEE
4. PVC LATERAL PIPE
5. FILTERED DRAIN VALVE: RAIN BIRD 16A-FDV-075
6. 6-INCH MINIMUM DEPTH OF 3/4" WASHED GRAVEL

L MANUAL LINE DRAIN VALVE DETAIL

NOT TO SCALE

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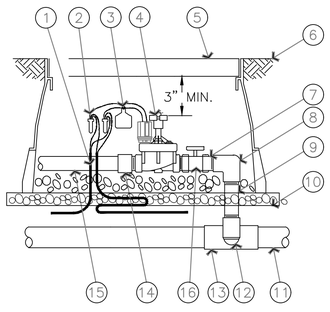


NOTE:
1. 4" POP UPS SHALL BE USED IN TURF AREAS.
2. CONTRACTOR SHALL SETTLE SOIL AROUND THE POP UP AFTER INSTALLATION.
3. ALL POP UP SPRAY HEADS SHALL HAVE CHECK VALVES.
4. ALL SCH. 40 PVC TO SCH. 80 PVC CONNECTIONS SHALL BE MADE USING TEFLON TAPE.

O POP UP-SPRAY HEAD DETAIL

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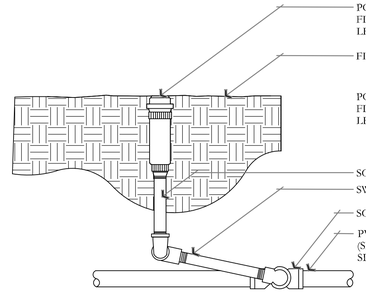


1. 36-INCH LENGTH OF 2-WIRE CABLE
2. WATERPROOF CONNECTION RAIN BIRD WC20 (TWO REQUIRED)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE: RAIN BIRD PEB/PESB/PESB-R WITH IVM-SOL
5. VALVE BOX WITH COVER: RAIN BIRD VB-STD
6. FINISH GRADE/TOP OF MULCH
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL `
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
11. PVC MAINLINE PIPE SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
12. PVC SCH 40 TEE OR ELL
13. PVC SCH 40 MALE ADAPTER
14. PVC LATERAL PIPE
15. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
16. BRASS BALL VALVE

M ELECTRIC REMOTE-CONTROL VALVE PEB OR PESB SERIES WITH IVM-SOL

NOT TO SCALE

PKJ DESIGN GROUP



NOTES:
1. ALL THREADED CONNECTION POINTS BETWEEN SCH. 40 PVC AND SCH. 80 PVC FITTING SHALL BE INSTALLED USING TEFLON TAPE.
2. CONTRACTOR SHALL COMPACT SOIL AROUND ROTOR AND RISER PRIOR TO PLANTING, PLUGGING, SEEDING, OR LAYING OF SOD.

N ROTOR HEAD DETAIL

NOT TO SCALE

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12/9/2025	UT25136

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1	CITY COMMENTS	11-18-2025
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PLAN INFORMATION

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PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

PKJ DESIGN GROUP
Landscape Architecture / Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY ANDWORTH
8128121-5301
12/9/2025
ELECTRONIC SEAL
STATE OF UTAH

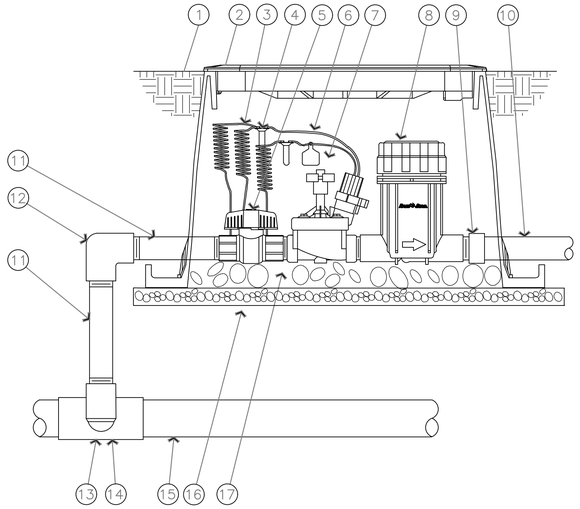
DRAWING INFO

PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/9/2025

IRRIGATION DETAILS

CITY PERMIT SET

IR-502

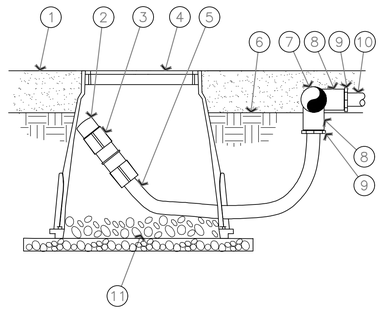


1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
5. 1-INCH BALL VALVE (INCLUDED IN XCZ-PRB-100-COM KIT)
6. ID TAG
7. REMOTE CONTROL VALVE: RAIN BIRD PESB (INCLUCED IN XCZ-PRB-100-COM KIT)
8. PRESSURE REGULATING AND FLOW INDICATING BASKET FILTER: RAIN BIRD XCZ-100-FLOW
9. PVC SCH 40 FEMALE ADAPTOR
10. LATERAL PIPE
11. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 40 ELL
13. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
17. PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN XCZ-PRB-100-COM KIT)

P DRIP CONTROL ZONE KIT DETAIL

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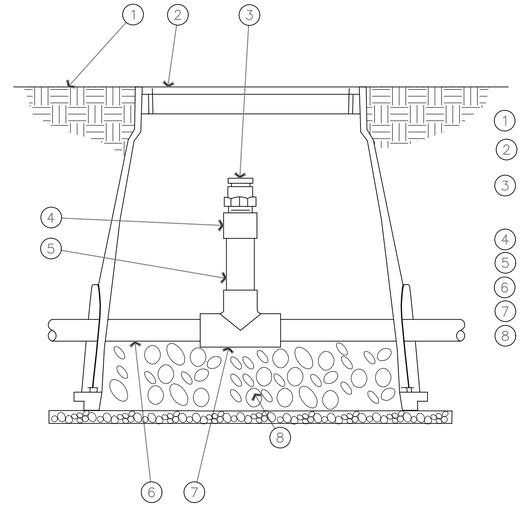
1. MULCH
2. FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS: POTABLE:RAIN BIRD MDCFCAP
3. EASY FIT COUPLING: RAIN BIRD MDCFCOUP
4. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
5. ½" POLYETHYLENE TUBING: RAIN BIRD XF BLANK TUBING
6. FINISH GRADE
7. PVC EXHAUST HEADER
8. PVC SCH 40 TEE OR EL
9. BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
10. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFCV DRIPLINE
11. 3-INCH MINIMUM DEPTH OF 3/4 " WASHED GRAVEL

NOTE:
1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

Q ON-SURFACE DRIPLINE FLUSH POINT DETAIL

NOT TO SCALE

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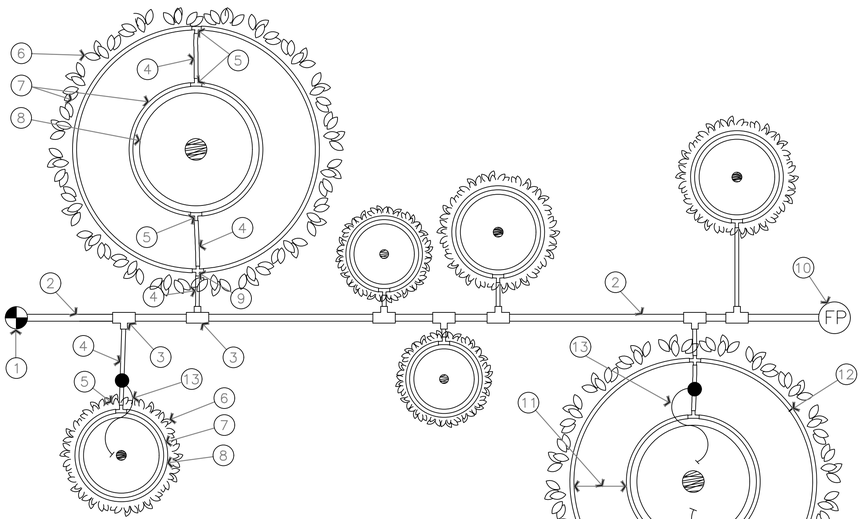


1. FINISH GRADE
2. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
3. ¼" AIR RELIEF VALVE: RAIN BIRD ARV050 TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
4. PVC SCH 40 FEMALE ADAPTER
5. PVC SCH 80 RISER
6. PVC HEADER PIPE
7. PVC SCH 40 TEE
8. 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL

R AIR RELIEF VALVE DETAIL

NOT TO SCALE

PKJ DESIGN GROUP



1. RAIN BIRD CONTROL ZONE KIT (SIZED TO ACCOMIDATE LATERAL FLOW DEMAND)
2. PVC DRIP LATERAL PIPE
3. PVC SCH 40 TEE OR EL (TYPICAL)
4. ½" POLYETHYLENE TUBING: RAIN BIRD XF SERIES- S FOR COPPER SHEILD (TYPICAL)
5. BARB X BARB INSERT TEE: RAIN BIRD XFF-TEE (TYPICAL)
6. PROJECTED CANOPY LINE OF TREE OR SHRUB (TYPICAL)
7. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFCV SERIES PLACE AS SHOWN (LENGTH AS REQUIRED, TYPICAL)
8. ROOT BALL (TYPICAL)
9. BARB X BARB INSERT CROSS: RAIN BIRD XFD-CROSS (TYPICAL)
10. DRIPLINE FLUSH POINT (SEE RAIN BIRD DETAIL: "XFCV DRIPLINE FLUSH POINT WITH BALL VALVE")
11. SPACING PER SPECIFICATION
12. TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (QUANTITY AS REQUIRED, SEE NOTES 2-3 BELOW)
13. POINT SOURCE EMITTERS FOR ESTABLISHMENT PERIOD. REMOVE AFTER ESTABLISHMENT PERIOD.

NOTES:
1. INSTALL MULTIPLE RINGS AS REQUIRED TO PROVIDE IRRIGATION COVERAGE FROM ROOT BALL TO PROJECTED TREE CANOPY. REFER TO RAIN BIRD DESIGN GUIDELINES AND SPECIFICATIONS FOR RECOMMENDED SPACING BETWEEN RINGS.
2. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
3. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.

S ON-SURFACE DRIPLINE TREE/SHRUB DETAIL

NOT TO SCALE

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PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

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3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8128121-5301
12/9/2025
STATE OF UTAH

DRAWING INFO

PM: JTA
DRAWN: ACP
CHECKED: KBA
PLOT DATE:

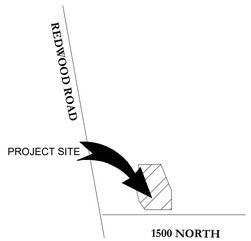
IRRIGATION DETAILS

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IR-503

Exhibit 7: Landscape and Irrigation Plans without interconnection to the north

VICINITY MAP





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12/23/2025	UT25136	** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025	STAGECOACH RETAIL 2429 N. STAGECOACH DR. SARATOGA SPRINGS, UTAH	CIR CIVIL ENGINEERING 10718 S. BECKSTEAD LANE, STE. 102 SOUTH JORDAN, UT 84095 801-949-6296	PKJ DESIGN GROUP Landscape Architecture / Planning & Visualization 3450 N. TRIUMPH BLVD. SUITE 102 LEHI, UTAH 84043 (801) 995-2217 www.pkjdesigngroup.com	JESSE ACP ANDREATH 12-23-25 5301 LICENSED LANDSCAPE ARCHITECT STATE OF UTAH 12/23/2025	PM: JTA DRAWN: ACP CHECKED: KBA PLOT DATE: 12/23/2025

NO.	REVISION	DATE
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3	CITY COMMENTS	12-22-2025
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NORTH

0' 10' 20' 40' 80'
GRAPHIC SCALE: 1" = 20'

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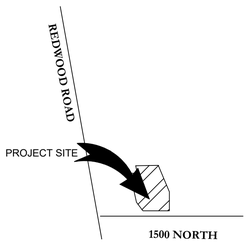
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COLOR ILLUSTRATION

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LP-COLOR

VICINITY MAP





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NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2	CITY COMMENTS	12-19-2025
3	CITY COMMENTS	12-22-2025
4		

PLAN INFORMATION

** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025

811 BLUE STAKES OF UTAH
UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

NORTH

0' 10 20 40 80

GRAPHIC SCALE: 1" = 20

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

PKJ DESIGN GROUP
Landscape Architecture & Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8138727-5301
12/23/2025
RENEWAL DATE
STATE OF UTAH

DRAWING INFO	
PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/23/2025

LANDSCAPE OVERALL PLAN

CITY PERMIT SET

LP-100

LANDSCAPE PLAN SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES LANDSCAPE PROCEDURES FOR THE PROJECT INCLUDING ALL LABOR, MATERIALS, AND INSTALLATION NECESSARY, BUT NOT LIMITED TO, THE FOLLOWING:

1. SITE CONDITIONS
2. GUARANTEES
3. MAINTENANCE
4. SOIL AMENDMENTS
5. FINE GRADING
6. LANDSCAPE EDGING
7. FURNISH AND INSTALLING PLANT
8. TURF PLANTING
9. WEED BARRIER

1.2 SITE CONDITIONS

A. EXAMINATION: BEFORE SUBMITTING A BID, EACH CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS; SHALL VISIT THE SITE OF THE WORK; SHALL FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS; AND SHALL INCLUDE IN THE BID THE COST OF ALL ITEMS REQUIRED BY THE CONTRACT DOCUMENTS ARE AT A VARIANCE WITH THE APPLICABLE LAWS, BUILDING CODES, RULES, REGULATIONS, OR CONTAIN OBVIOUS ERRONEOUS OR UNCOORDINATED INFORMATION, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE PROJECT REPRESENTATIVE AND THE NECESSARY CHANGES SHALL BE ACCOMPLISHED BY ADDENDUM.

B. PROTECTION: CONTRACTOR TO CONDUCT THE WORK IN SUCH A MANNER TO PROTECT ALL EXISTING UNDERGROUND UTILITIES OR STRUCTURES. CONTRACTOR TO REPAIR OR REPLACE ANY DAMAGED UTILITY OR STRUCTURE USING IDENTICAL MATERIALS TO MATCH EXISTING AT NO EXPENSE TO THE OWNER.

C. IRRIGATION SYSTEM: DO NOT BEGIN PLANTING UNTIL THE IRRIGATION SYSTEM IS COMPLETELY INSTALLED, IS ADJUSTED FOR FULL COVERAGE AND IS COMPLETELY OPERATIONAL.

1.3 PERMITS

A. BLUE STAKE/ DIG LINE: WHEN DIGGING IS REQUIRED, "BLUE STAKE" OR "DIG LINE" THE WORK SITE AND IDENTIFY THE APPROXIMATE LOCATION OF ALL KNOWN UNDERGROUND UTILITIES OR STRUCTURES.

1.4 PLANT DELIVERY, QUALITY, AND AVAILABILITY

A. UNAUTHORIZED SUBSTITUTIONS WILL NOT BE ACCEPTED. IF PROOF IS SUBMITTED THAT SPECIFIC PLANTS OR PLANT SIZES ARE UNOBTAINABLE, WRITTEN SUBSTITUTION REQUESTS WILL BE CONSIDERED FOR THE NEAREST EQUIVALENT PLANT OR SIZE. ALL SUBSTITUTION REQUESTS MUST BE MADE IN WRITING AND PREFERABLY BEFORE THE BID DUE DATE.

1.5 FINAL INSPECTION

A. ALL PLANTS WILL BE INSPECTED AT THE TIME OF FINAL INSPECTION PRIOR TO RECEIVING A LANDSCAPE SUBSTANTIAL COMPLETION FOR CONFORMANCE TO SPECIFIED PLANTING PROCEDURES, AND FOR GENERAL APPEARANCE AND VITALITY. ANY PLANT NOT APPROVED BY THE PROJECT REPRESENTATIVE WILL BE REJECTED AND REPLACED IMMEDIATELY.

1.6 LANDSCAPE SUBSTANTIAL COMPLETION

A. A SUBSTANTIAL COMPLETION CERTIFICATE WILL ONLY BE ISSUED BY THE PROJECT REPRESENTATIVE FOR "LANDSCAPE AND IRRIGATION" IN THEIR ENTIRETY. SUBSTANTIAL COMPLETION WILL NOT BE PROPORTIONED TO BE DESIGNATED AREAS OF A PROJECT.

1.7 MAINTENANCE

A. PLANT MATERIAL: THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL PLANTED MATERIALS IN A HEALTHY AND GROWING CONDITION FOR 30 DAYS AFTER RECEIVING A LANDSCAPE SUBSTANTIAL COMPLETION AT WHICH TIME THE GUARANTEE PERIOD COMMENCES. THIS MAINTENANCE IS TO INCLUDE MOWING, WEEDING, CULTIVATING, FERTILIZING, MONITORING WATER SCHEDULES, CONTROLLING INSECTS AND DISEASES, RE-GUYING AND STAKING, AND ALL OTHER OPERATIONS OF CARE NECESSARY FOR THE PROMOTION OF ROOT GROWTH AND PLANT LIFE SO THAT ALL PLANTS ARE IN A CONDITION SATISFACTORY AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR FAILURE TO MONITOR WATERING OPERATIONS AND SHALL REPLACE ANY AND ALL PLANT MATERIAL THAT IS LOST DUE TO IMPROPER APPLICATION OF WATER.

1.8 GUARANTEE

A. GUARANTEE: A GUARANTEE PERIOD OF ONE YEAR SHALL BEGIN FROM END OF MAINTENANCE PERIOD AND FINAL ACCEPTANCE FOR TREES, SHRUBS, AND GROUND COVERS. ALL PLANTS SHALL GROW AND BE HEALTHY FOR THE GUARANTEE PERIOD AND TREES SHALL LIVE AND GROW IN ACCEPTABLE UPRIGHT POSITION. ANY PLANT NOT ALIVE, IN POOR HEALTH, OR IN POOR CONDITION AT THE END OF THE GUARANTEE PERIOD WILL BE REPLACED IMMEDIATELY. ANY PLANT WILL ONLY NEED TO BE REPLACED ONCE DURING THE GUARANTEE PERIOD. CONTRACTOR TO PROVIDE DOCUMENTATION SHOWING WHERE EACH PLANT TO BE REPLACED IS LOCATED. ANY OUTSIDE FACTORS, SUCH AS VANDALISM OR LACK OF MAINTENANCE ON THE PART OF THE OWNER, SHALL NOT BE PART OF THE GUARANTEE

PART II - PRODUCTS

2.1 LANDSCAPE MATERIALS

A. TREE STAKING: ALL TREES SHALL BE STAKED FOR ONE YEAR WARRANTY PERIOD. ALL TREES NOT PLUMB SHALL BE REPLACED. STAKED TREES SHALL USE VINYL TREE TIES AND TREE STAKES TWO (2) INCH BY TWO (2) BY EIGHT (8) FOOT COMMON PINE STAKES USED AS SHOWN ON THE DETAILS.

B. TREE WRAP: TREE WRAP IS NOT TO BE USED.

C. MULCH/ROCK: SEE PLANS. ALL PLANTER BEDS TO RECEIVE A MINIMUM 3" LAYER FOR TREES, SHRUBS, AND PERENNIALS AND 1" FOR GROUNDCOVERS.

D. WEED BARRIER: DEWITT 5 OZ. WEED BARRIER FABRIC. MANUFACTURED BY DEWITT COMPANY, DEWITTCOMPANY.COM OR APPROVED EQUAL.

E. TREE, SHRUB, AND GRASS BACKFILL MIXTURE; BACKFILL MIXTURE TO BE 80% NATIVE SOIL AND 20% TOPSOIL, THOROUGHLY MIXED TOGETHER PRIOR TO PLACEMENT.

F. TOPSOIL: REQUIRED FOR TURF AREAS, PLANTER BEDS AND BACKFILL MIXTURE. ACCEPTABLE TOPSOIL SHALL MEET THE FOLLOWING STANDARDS:

a. PH: 5.5-7.5

b. EC (ELECTRICAL CONDUCTIVITY): < 2.0 MMHOS PER CENTIMETER

c. SAR (SODIUM ABSORPTION RATION): < 3.0

d. % OM (PERCENT ORGANIC MATTER): >1%

e. TEXTURE (PARTICLE SIZE PER USDA SOIL CLASSIFICATION): SAND <70%; CLAY < 30%; SILT < 70%, STONE FRAGMENTS (GRAVEL OR ANY SOIL PARTICLE GREATER THAN TWO (2) MM IN SIZE) < 5% BY VOLUME.

G. TURF SOD: ALL SOD SHALL BE 18 MONTH OLD AS SPECIFIED ON PLANS (OR APPROVED EQUAL) THAT HAS BEEN CUT FRESH THE MORNING OF INSTALLATION. ONLY SOD THAT HAS BEEN GROWN ON A COMMERCIAL SOD FARM SHALL BE USED. ONLY USE SOD FROM A SINGLE SOURCE.

H. LANDSCAPE CURB EDGING: SIX (6) INCHES BY FOUR (4) INCHES EXTRUDED CONCRETE CURB MADE UP OF THE FOLLOWING MATERIALS:

a. WASHED MORTAR SAND FREE OF ORGANIC MATERIAL.

b. PORTLAND CEMENT (SEE CONCRETE SPEC. BELOW FOR TYPE)

c. REINFORCED FIBER - SPECIFICALLY PRODUCED FOR COMPATIBILITY WITH AGGRESSIVE ALKALINE ENVIRONMENT OF PORTLAND CEMENT-BASED COMPOSITES.

d. ONLY POTABLE WATER FOR MIXING.

I. LANDSCAPE METAL EDGING: 5.5" ALUMINUM EDGING WITH 15" DOWELS INTO THE GROUND FOR STABILIZATION.

PART III - EXECUTION

3.1 GRADING

A. TOPSOIL PREPARATION: GRADE PLANTING AREAS ACCORDING TO THE GRADING PLAN. ELIMINATE UNEVEN AREAS AND LOW SPOTS. PROVIDE FOR PROPER GRADING AND DRAINAGE.

B. TOPSOIL PLACEMENT: SLOPE SURFACED AWAY FROM BUILDING AT TWO (2) PERCENT SLOPE WITH NO POCKETS OF STANDING WATER. ESTABLISH FINISH GRADES OF ONE (1) INCHES FOR PLANTERS BELOW GRADE OF ADJACENT PAVED SURFACED. PROVIDE NEAT, SMOOTH, AND UNIFORM FINISH GRADES. REMOVE SURPLUS SUB-SOIL AND TOPSOIL FROM THE SITE.

C. COMPACTION: COMPACTION UNDER HARD SURFACE AREAS (ASPHALT PATHS AND CONCRETE SURFACES) SHALL BE NINETY-FIVE (95) PERCENT. COMPACTION UNDER PLANTING AREAS SHALL BE BETWEEN EIGHTY-FIVE (85) AND NINETY (90) PERCENT.

3.2 TURF GRADING

A. THE SURFACE ON WHICH THE SOD IS TO BE LAID SHALL BE FIRM AND FREE FROM FOOTPRINTS, DEPRESSIONS, OR UNDULATIONS OF ANY KIND. THE SURFACE SHALL BE FREE OF ALL MATERIALS LARGER THAN 1/2" IN DIAMETER.

B. THE FINISH GRADE OF THE TOPSOIL ADJACENT TO ALL SIDEWALKS, MOW-STRIPS, ETC. PRIOR TO THE LAYING OF SOD, SHALL BE SET SUCH THAT THE CROWN OF THE GRASS SHALL BE AT THE SAME LEVEL AS THE ADJACENT CONCRETE OR HARD SURFACE. NO EXCEPTIONS.

3.3 PLANTING OPERATIONS

A. REVIEW THE EXACT LOCATIONS OF ALL TREES AND SHRUBS WITH THE PROJECT REPRESENTATIVE FOR APPROVAL PRIOR TO THE DIGGING OF ANY HOLES. PREPARE ALL HOLES ACCORDING TO THE DETAILS ON THE DRAWINGS.

B. WATER PLANTS IMMEDIATELY UPON ARRIVAL AT THE SITE. MAINTAIN IN MOIST CONDITION UNTIL PLANTED.

C. BEFORE PLANTING, LOCATE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. DO NOT PLACE PLANTS ON OR NEAR UTILITY LINES.

D. THE TREE PLANTING HOLE SHOULD BE THE SAME DEPTH AS THE ROOT BALL, AND TWO TIMES THE DIAMETER OF THE ROOT BALL.

E. TREES MUST BE PLACED ON UNDISTURBED SOIL AT THE BOTTOM OF THE PLANTING HOLE.

F. THE TREE HOLE DEPTH SHALL BE DETERMINED SO THAT THE TREE MAY BE SET SLIGHTLY HIGH OF FINISH GRADE, 1" TO 2" ABOVE THE BASE OF THE TRUNK FLARE, USING THE TOP OF THE ROOT BALL AS A GUIDE.

G. PLANT IMMEDIATELY AFTER REMOVAL OF CONTAINER FOR CONTAINER PLANTS.

H. SET TREE ON SOIL AND REMOVE ALL BURLAP, WIRE BASKETS, TWINE, WRAPPINGS, ETC. BEFORE BEGINNING AND BACKFILLING OPERATIONS. DO NOT USE PLANTING STOCK IF THE BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.

I. APPLY VITAMIN B-1 ROOT STIMULATOR AT THE RATE OF ONE (1) TABLESPOON PER GALLON.

J. UPON COMPLETION OF BACKFILLING OPERATION, THOROUGHLY WATER TREE TO COMPLETELY SETTLE THE SOIL AND FILL ANY VOIDS THAT MAY HAVE OCCURRED. USE A WATERING HOSE, NOT THE AREA IRRIGATION SYSTEM. IF ADDITIONAL PREPARED TOPSOIL MIXTURE NEEDS TO BE ADDED. IT SHOULD BE A COURSER MIX AS REQUIRED TO ESTABLISH FINISH GRADE AS INDICATED ON THE DRAWINGS.

K. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES. ALL CUTS, SCARS, AND BRUISES SHALL BE PROPERLY TREATED ACCORDING TO THE DIRECTION OF THE PROJECT REPRESENTATIVE. PROPER PRUNING TECHNIQUES SHALL BE USED. DO NOT LEAVE STUBS AND DO NOT CUT THE LEADER BRANCH. IMPROPER PRUNING SHALL BE CAUSE FOR REJECTION OF THE PLANT MATERIAL.

L. PREPARE A WATERING CIRCLE OF 2' DIAMETER AROUND THE TRUNK. FOR CONIFERS, EXTEND THE WATERING WELL TO THE DRIP LINE OF THE TREE CANOPY. PLACE MULCH AROUND THE PLANTED TREES.

4. TURF - SOD LAYING

A. TOP SOIL AMENDMENTS: PRIOR TO LAYING SOD, COMMERCIAL FERTILIZER SHALL BE APPLIED AND INCORPORATED INTO THE UPPER FOUR (4) INCHES OF THE TOPSOIL AT A RATE OF FOUR POUNDS OF NITROGEN PER ONE THOUSAND (1,000) SQUARE FEET. ADJUST FERTILIZATION MIXTURE AND RATE OF APPLICATION AS NEEDED TO MEET RECOMMENDATIONS GIVEN BY TOPSOIL ANALYSIS. INCLUDE OTHER AMENDMENTS AS REQUIRED.

B. FERTILIZATION: THREE WEEKS AFTER SOD PLACEMENT FERTILIZE THE TURF AT A RATE OF ½ POUND OF NITROGEN PER 1000 SQUARE FEET. USE FERTILIZER SPECIFIED ABOVE. ADJUST FERTILIZATION MIXTURE AND RATES TO MEET RECOMMENDATIONS GIVEN BY TOPSOIL ANALYSIS.

C. SOD AVAILABILITY AND CONDITION: SOD IS TO BE DELIVERED TO THE SITE IN GOOD CONDITION. IT IS TO BE INSPECTED UPON ARRIVAL AND INSTALLED WITHIN 24 HOURS. SOD IS TO BE MOIST AND COOL TO ENSURE THAT DECOMPOSITION HAS NOT BEGUN AND IS TO BE FREE OF PESTS, DISEASES, OR BLEMISHES. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE EXISTING CONDITIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FURNISHING AND LAYING ALL SOD REQUIRED ON THE PLANS. HE SHALL FURNISH NEW SOD AS SPECIFIED ABOVE AND LAY IT SO AS TOO COMPLETELY SATISFY THE INTENT AND MEANING OF THE PLANS AND SPECIFICATION AT NO EXTRA COST TO THE OWNER. IN THE CASE OF ANY DISCREPANCY IN THE AMOUNT OF SOD TO BE REMOVED OR AMOUNT TO BE USED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPORT SUCH TO THE PROJECT REPRESENTATIVE PRIOR TO COMMENCING THE WORK.

D. SOD LAYING: THE SURFACE UPON WHICH THE NEW SOD TO BE LAID WILL BE PREPARED AS SPECIFIED IN THE DETAIL AND BE LIGHTLY WATERED BEFORE LAYING. AREAS WHERE SOD IS TO BE LAID SHALL BE CUT TRIMMED, OR SHAPED TO RECEIVE FULL WIDTH SOD (MINIMUM TWELVE (12) INCHES). NO PARTIAL STRIP OR PIECES WILL BE ACCEPTED.

E. SOD SHALL BE TAMPED LIGHTLY AS EACH PIECE IS SET TO ENSURE THAT GOOD CONTACT IS MADE BETWEEN EDGES AND ALSO THE GROUND. IF VOIDS OR HOLES ARE DISCOVERED, THE SOD PIECE(S) IS (ARE) TO BE RAISED AND TOPSOIL IS TO BE USED TO FILL IN THE AREAS UNTIL LEVEL. SOD LAID ON ANY SLOPED AREAS SHALL BE ANCHORED WITH WOODEN DOWELS OR OTHER MATERIALS WHICH ARE ACCEPTED BY THE GRASS SOD INDUSTRY.

F. SOD SHALL BE ROLLED WITH A ROLLER THAT IS AT LEAST 50% FULL IMMEDIATELY AFTER INSTALLATION TO ENSURE THE FULL CONTACT WITH SOIL IS MADE.

G. APPLY WATER DIRECTLY AFTER LAYING SOD. RAINFALL IS NOT ACCEPTABLE.

H. WATERING OF THE SOD SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR BY WHATEVER MEANS NECESSARY TO ESTABLISH THE SOD IN AN ACCEPTABLE MANNER TO THE END OF THE MAINTENANCE PERIOD. IF AN IRRIGATION SYSTEM IS IN PLACE ON THE SITE, BUT FOR WHATEVER REASON, WATER IS NOT AVAILABLE IN THE SYSTEM. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO WATER THE SOD BY WHATEVER MEANS, UNTIL THE SOD IS ACCEPTED BY THE PROJECT REPRESENTATIVE.

I. PROTECTION OF THE NEWLY LAID SOD SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ACCEPTABLE VISUAL BARRIERS, TO INCLUDE BARRICADES SET APPROPRIATE DISTANCES WITH STRINGS OR TAPES BETWEEN BARRIERS, AS AN INDICATION OF NEW WORK. THE CONTRACTOR IS TO RESTORE ANY DAMAGED AREAS CAUSED BY OTHERS (INCLUDING VEHICULAR TRAFFIC), EROSION, ETC, UNTIL SUCH TIME AS THE LAWN IS ACCEPTED BY THE OWNER.

J. ALL SOD THAT HAS NOT BEEN LAID WITHIN 24 HOURS SHALL BE DEEMED UNACCEPTABLE AND WILL BE REMOVED FROM THE SITE.

3.5 WEED BARRIER

A. FOR THE HEALTH OF THE SOIL AND THE MICROORGANISMS, WEED BARRIER IS NOT RECOMMENDED. IF USE IS REQUIRED OR REQUESTED, DO NOT PLACE IN ANNUAL OR GRASS AREAS.

B. CUT WEED BARRIER BACK TO THE EDGE OF THE PLANT ROOTBALL.

C. OVERLAP ROWS OF FABRIC MIN. 6"

D. STABLE FABRIC EDGES AND OVERLAPS TO GROUND.

END OF SECTION

GENERAL LANDSCAPE NOTES

GRADING AND DRAINAGE REQUIREMENTS

- AS PER CODE, ALL GRADING IS TO SLOPE AWAY FROM ANY STRUCTURE. SURFACE OF THE GROUND WITHIN 10' FEET OF THE FOUNDATION SHOULD DRAIN AWAY FROM THE STRUCTURE WITH A MINIMUM FALL OF 6"
- AS PER CODE, FINISHED GRADE WILL NOT DRAIN ON NEIGHBORING PROPERTIES
- A MINIMUM OF 6" OF FOUNDATION WILL BE LEFT EXPOSED AT ALL CONDITIONS
- LANDSCAPE CONTRACTOR TO MAINTAIN OR IMPROVE FINAL GRADE AND PROPER DRAINAGE ESTABLISHED BY EXCAVATOR, INCLUDING BUT NOT LIMITED TO ANY MAINTENANCE, PRESERVATION, OR EXAGGERATION OF SLOPES, BERMS, AND SWALES.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY DAMAGED OR IMPROPER WATERFLOW OF ALL SWALES, BERMS, OR GRADE
- DEVICES FOR CHANNELIZING ROOF RUN-OFF SHOULD BE INSTALLED FOR COLLECTION AND DISCHARGE OF RAINWATER AT A MINIMUM OF 10' FROM THE FOUNDATION, OR BEYOND THE LIMITS OF FOUNDATION WALL BACKFILL; WHICHEVER DISTANCE IS GREATER

GENERAL LANDSCAPE NOTES

- LANDSCAPE CONTRACTOR SHALL HAVE ALL UTILITIES BLUE STAKED PRIOR TO DIGGING. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AT CONTRACTORS EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
- DURING THE BIDDING AND INSTALLATION PROCESS, THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES OF ALL MATERIALS. IF DISCREPANCIES EXIST, THE PLAN SHALL DICTATE QUANTITIES TO BE USED.
- ALL PLANT MATERIAL SHALL BE PLANTED ACCORDING TO ANSI STANDARDS WITH CONSIDERATION TO INDIVIDUAL SOIL AND SITE CONDITIONS, AND NURSERY CARE AND INSTALLATION INSTRUCTIONS.
- SELECTED PLANTS WILL BE ACCORDING TO THE PLANT LEGEND. IF SUBSTITUTIONS ARE NECESSARY, PROPOSED LANDSCAPE CHANGES MUST BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO LAYING SOD.
- SHOULD THE SITE REQUIRE ADDITIONAL TOPSOIL, REFER TO SOIL TEST WHEN MATCHING EXISTING SOIL. IF A MATCHING SOIL IS NOT LOCATABLE, A 6" DEPTH OF SANDY LOAM TOPSOIL (MIXED PRIOR TO SPREADING WITH 1% ORGANIC MATTER) CAN BE INCORPORATED INTO THE EXISTING SOIL USING THE FOLLOWING DIRECTIONS: SCARIFY TOP 6" OF EXISTING SUBSOIL AND INCORPORATE 3" OF NEW COMPOST ENRICHED TOPSOIL. SPREAD REMAINING TOPSOIL TO REACH FINISHED GRADE.
- EDGING, AS INDICATED ON PLAN, IS TO BE INSTALLED BETWEEN ALL LAWN AND PLANTER AREAS. ANY TREES LOCATED IN LAWN MUST HAVE A 4-6' TREE RING OF THE SAME EDGING.

LAWN/GRASS AREA

- SOD
  - ALL LAWN AREAS TO RECEIVE MIN. 6" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED HYDROSEEDING. FINE LEVEL ALL AREAS PRIOR TO LAYING SOD ALL LAWN AREAS SHALL BE IRRIGATED WITH 100% COVERAGE BY POP-UP SPRAY HEADS AND GEAR-DRIVEN ROTORS. ALL DECIDUOUS AND CONIFER TREES PLANTED WITHIN SOD AREAS SHALL HAVE A FOUR FOOT (4') DIAMETER TREE RING COVERED WITH CHOCOLATE BROWN BARK MULCH, NO SHREDDED FINES. SUBMIT SAMPLES TO BE APPROVED BY LANDSCAPE ARCHITECT AND OWNER BEFORE INSTALLATION.
- SEED
  - **SOIL:** TEST SOIL FOR ADEQUATE FERTILITY. ANY WEEDS CURRENTLY ON THE SITE SHALL BE REMOVED BY EITHER MECHANICAL MEANS SUCH AS HAND PULLING OR SPRAYING WITH AN HERBICIDE SUCH AS GLYPHOSATE MIXED WITH A SURFACTANT. HERBICIDES SHOULD BE APPLIED BY A CERTIFIED PESTICIDE APPLICATOR . COMPACTED SOIL SHALL BE SCARIFIED TO A DEPTH OF 18 INCHES BEFORE ADDING 6" OF WEED FREE TOPSOIL WITH HIGH ORGANIC MATTER. FINE LEVEL ALL AREAS PRIOR TO HYDROSEEDING AND SET THE GRADE FOR POSITIVE DRAINAGE. TOPSOIL SHOULD BE SOFT AT TIME OF APPLICATION. FERTILIZER IS TO BE ADDED WHEN HYDROSEEDING. REFER TO SOIL TEST RESULTS AND HYDROSEEDING CONTRACTOR FOR APPLICATION RATES.
  - **SEED**: USE SEED MIXES AS SPECIFIED BY LANDSCAPE ARCHITECT OF PURE LIVE SEED (PLS) ON A BASIS/ACRE. THE OPTIMUM TIME TO PANT IS IN NOVEMBER BEFORE THE FIRST SNOW. DO NOT SOW OVER HEAVY SNOWPACK. SEED WILL LAY DORMANT AND BE READY TO GERMINATE ONCE THE GROUND THAWS AND WARMS IN LATE WINTER. IF SEEDING IN LATE FALL IS NOT POSSIBLE, SEED BEFORE APRIL 1. CONTACT SUMMIT SEED: DARRELL@SUMMITSEEDING.COM 435-709-8003.
  - **APPLICATION**: HYDROSEEDING SHALL CONSIST OF SEED, TACKIFIER, WOOD FIBER MULCH AND FERTILIZER IN A WATER BASED SLURRY. TANK MOUNTED TRUCK SHALL HAVE CONTINUOUS AGITATION. THE PUMP ON THE TRUCK WILL FORCE THE SLURRY THROUGH A TOP-MOUNTED DISCHARGE NOZZLE (TOWER). USE 2000 POUNDS WOOD FIBER MULCH AND 50-100 POUNDS OF TACKIFIER PER ACRE.
  - **IRRIGATION**: ALL AREAS MUST BE KEPT MOST WITHOUT PUDDLES OR RUNOFF USING FREQUENT DAYTIME WATER CYCLES. ADJUST AND MONITOR SPRINKLERS AND CLOCK TO ACHIEVE PROPER IRRIGATION.

- IF PERMANENT IRRIGATION IS NOT PLANNED, TEMPORARY IRRIGATION IS REQUIRED AT THE FOLLOWING SCHEDULE: FOR 8 WEEKS SOIL SHALL REMAIN DAMP DURING ESTABLISHMENT PERIOD WITHOUT PUDDLING ON SOIL SURFACE. APPLY WATER APPROXIMATELY THREE TIMES A DAY FOR 5-7 MINUTES FOR EACH IRRIGATION EVENT DEPENDING ON TEMPERATURE AND TIME OF YEAR. A SPARSE DENSITY IS EXPECTED. CONTINUE TEMPORARY IRRIGATION FOR ONE YEAR EVENTUALLY REDUCING WATER APPLICATION TO ONCE A WEEK, THEN ONCE EVERY TWO WEEKS TO FINALLY ONCE A MONTH. MONITOR PROGRESS OF ESTABLISHMENT AND ADJUST SPRINKLERS ACCORDINGLY. THE GOAL IS TO CREATE A HEALTHY STAND OF GRASSES WITH LITTLE TO NO IRRIGATION.
  - **WEED CONTROL AND MAINTENANCE:** MANDATORY WEED CONTROL IS REQUIRED TO REDUCE COMPETITION AND WEED SEED PRODUCTION. WEEDS MUST BE KEPT UNDER CONTROL BY MECHANICALLY PULLING OR CHEMICALLY SPRAYING AS DIRECTED BY THE APPLICATOR. APPLY A BROADLEAF HERBICIDE BIANNUALLY AND ESTABLISH A CONSISTENT REGIMEN OF MOWING AND FERTILIZING TO PREVENT WEEDS FROM PRODUCING SEED. MOW ONCE IN THE SPRING AND ONCE IN THE FALL BEFORE FERTILIZATION. FERTILIZER OPTION IS SUSTAIN 4-6-4 DEPENDING ON SOIL FERTILITY. DO NOT MOW SHORTER THAN 4 INCHES. BAG ALL CUTTINGS TO REMOVE WEED SEED FROM PROPERTY. KEEP WEEDS CUT DOWN AND DO NOT LET THEM GO TO SEED. WEED SEED PRODUCTION IS THE GAUGE FOR WHEN TO MOW, WHICH GENERALLY OCCURS IN APRIL OR MAY AS WELL AS EARLY FALL DEPENDING ON TEMPERATURE AND MOISTURE. THIS PROCEDURE WILL BE REQUIRED UNTIL A HEALTHY STAND OF GRASSES IS EVIDENT AND COMPETING WELL WITH WEEDS. EXPECT FROM 1 TO 3 YEARS.
  - **PROGANICS BIOTIC SOIL MEDIA**: WHERE CONDITIONS MAY PROHIBIT ADDING TOPSOIL, PROGANICS BIOTIC SOIL MEDIA SHOULD BE APPLIED BY HYDROSEEDER AT 3500 LBS/ACRE WITH SEED AND FERTILIZER PRIOR TO THE APPLICATION OF WOOD MULCH(2000 LBS/ACRE) COMBINED WITH TACKIFIER (50-100 LBS/ACRE.)
  - **ADDING FORBS**: SHRUBS AND PERENNIALS, BY SEED OR CONTAINER, CAN BE ADDED ONCE WEEDS ARE UNDER CONTROL AND HERBICIDE IS NO LONGER NEEDED. USUALLY 1-2 YEARS AFTER HYDROSEEDING.

MULCH

- ORGANIC
  - PLANTING AREAS TO BE FREE OF WEEDS AND RECEIVE MIN. 12" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED PLANTINGS. PROVIDE 3" DEPTH OF ORGANIC MULCH TOP DRESSING. KEEP MULCH AWAY FROM TOP OF ROOT BALL OF ALL PLANT MATERIAL.
  - IF REQUIRED BY CITY, INSTALL DEWITT 5OZ WEED BARRIER LANDSCAPE FABRIC UNDER ALL MULCH AREAS. KEEP WEED BARRIER 1 FOOT AWAY FROM EDGE OF ROOT BALL OF ALL PLANT MATERIAL. IF WEED BARRIER IS NOT REQUIRED OR INSTALLED, AT OWNER'S APPROVAL, USE TREFLAN 10 AS A PRE-EMERGENT. APPLY ACCORDING TO LABEL DIRECTIONS BY CERTIFIED PESTICIDE APPLICATOR AFTER PLANTING AND AFTER APPLYING MULCH.
  - IF USING TREFLAN 10 WITHOUT WEED BARRIER, THIS AREA WILL ALSO NEED AN YEARLY MANAGEMENT PROGRAM. SUBMIT PROGRAM TO OWNER.
  - ANNUAL PLANTING AREAS AS SHOWN ON PLAN TO RECEIVE 4" OF SOIL AID MATERIAL (ORGANIC MULCH). NO MULCH SHALL BE PLACED WITHIN 12" OF TREE TRUNK AND 6" WITHIN BASE OF SHRUBS AND PERENNIALS. DO NOT COVER LOW BRANCHES OF SHRUBS WITH ROCK.
- INORGANIC
  - ROCK MULCH PLANTING AREAS TO BE FREE OF WEEDS AND RECEIVE MIN. 12" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED PLANTINGS. WHERE PLANTING IS SPARSE (GREATER THAN 4' DISTANCE BETWEEN PLANTS OR 20' BETWEEN GROUPINGS), ADDITIONAL TOPSOIL IS NOT NECESSARY EXCEPT FOR BACKFILLING PLANTING HOLE. PREPARE A HOLE TWICE THE WIDTH OF THE CONTAINER, WATER IN PLANT, BACKFILL WITH A 4:1 RATIO OF SOIL TO COMPOST. TAMP LIGHTLY AND WATER AGAIN. KEEP ROCK 12" AWAY FROM TRUNK OF TREES AND 6" AWAY FROM BASE OF SHRUBS AND PERENNIALS. DO NOT COVER LOW BRANCHES OF SHRUBS WITH ROCK.
  - IF REQUIRED BY CITY, INSTALL DEWITT 5OZ WEED BARRIER LANDSCAPE FABRIC UNDER ALL ROCK AREAS. KEEP WEED BARRIER 1 FOOT AWAY FROM EDGE OF ROOT BALL OF ALL PLANT MATERIAL. IF WEED BARRIER IS NOT REQUIRED OR INSTALLED, AT OWNER'S APPROVAL, USE TREFLAN 10 AS A PRE-EMERGENT. APPLY ACCORDING TO LABEL DIRECTIONS BY CERTIFIED PESTICIDE APPLICATOR AFTER PLANTING AND AFTER APPLYING MULCH.
  - IF USING TREFLAN 10 WITHOUT WEED BARRIER, THIS AREA WILL ALSO NEED AN YEARLY MANAGEMENT PROGRAM. SUBMIT PROGRAM TO OWNER. UPON REQUEST, A PLANT GUIDE IS AVAILABLE WITH OUR RECOMMENDATIONS REGARDING WEED BARRIER, PLANT CARE AND MAINTENANCE.

GENERAL IRRIGATION NOTES

- A NEW UNDERGROUND, AUTOMATIC IRRIGATION SYSTEM IS TO BE INSTALLED BY CONTRACTOR IN ALL LANDSCAPED AREAS. LAWN AREAS TO RECEIVE AT LEAST 100% HEAD TO HEAD COVERAGE AND PLANTER AREAS TO RECEIVE A FULL DRIP SYSTEM TO EACH TREE AND SHRUB. POINT SOURCE DRIP OR IN-LINE DRIP TUBING TO BE SECURED AT CENTER OF ROOT BALL, NOT AGAINST TRUNK. SEE IRRIGATION PLAN.

INSTALLER RESPONSIBILITIES AND LIABILITIES

- THESE PLANS ARE FOR BASIC DESIGN LAYOUT AND INFORMATION. LANDSCAPE CONTRACTOR IS REQUIRED TO USE TRADE KNOWLEDGE FOR IMPLEMENTATION. OWNER ASSUMES NO LIABILITIES FOR INADEQUATE ENGINEERING CALCULATIONS, MANUFACTURER PRODUCT DEFECTS, INSTALLATION OF ANY LANDSCAPING AND COMPONENTS, OR TIME EXECUTION.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE AND LIABLE FOR INSTALLATION OF ALL LANDSCAPING AND IRRIGATION SYSTEMS INCLUDING CODE REQUIREMENTS, TIME EXECUTIONS, INSTALLED PRODUCTS AND MATERIALS.

SITE MATERIALS LEGEND

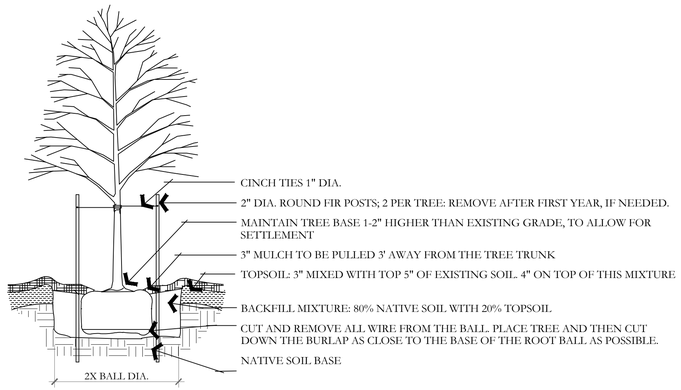
(NOTE: SITE MATERIALS QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN CASE OF DISCREPANCY, THE DRAWING SHALL TAKE PRECEDENCE.)

1 LANDSCAPE

	1-15	2" COPPER CANYON CRUSHED ROC OR APPROVED EQUAL. SUBMIT SAMPLES FOR LANDSCAPE ARCHITECT AND OWNER APPROVAL. PROVIDE 5" DEPTH OF ROCK MULCH TOP DRESSING. SEE INORGANIC MULCH LANDSCAPE NOTES FOR ADDITIONAL INFORMATION. SHEET LP-101.	11,267 sf
	1-18	2-4" TAN CRUSHED ROCK. SUBMIT SAMPLES FOR LANDSCAPE ARCHITECT AND OWNER APPROVAL. PROVIDE 4" DEPTH OF ROCK MULCH TOP DRESSING. SEE INORGANIC MULCH LANDSCAPE NOTES FOR ADDITIONAL INFORMATION. SHEET LP-101.	9,101 sf

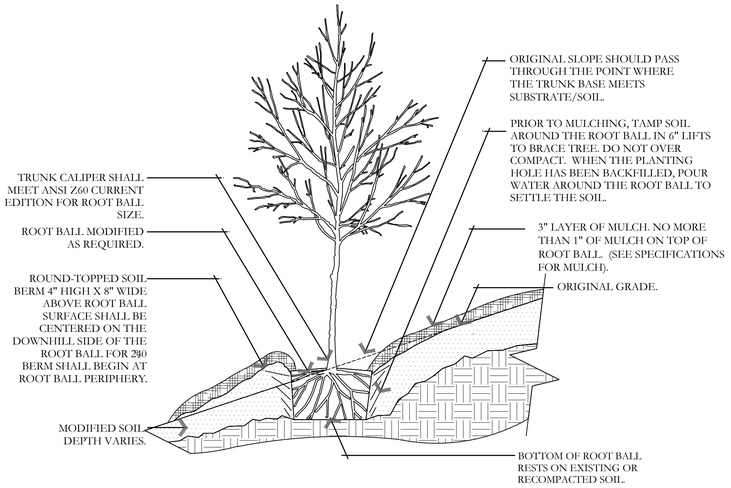
2 HARDSCAPE

	2-01	BOULDERS- DECORATIVE 3 FOOT ROUND. SUBMIT COLOR SAMPLES FOR ARCHITECT AND OWNER APPROVAL. SEE PLACEMENT INSTRUCTIONS ON DETAIL SHEET LP-501..	17
—— ——	2-05	5"



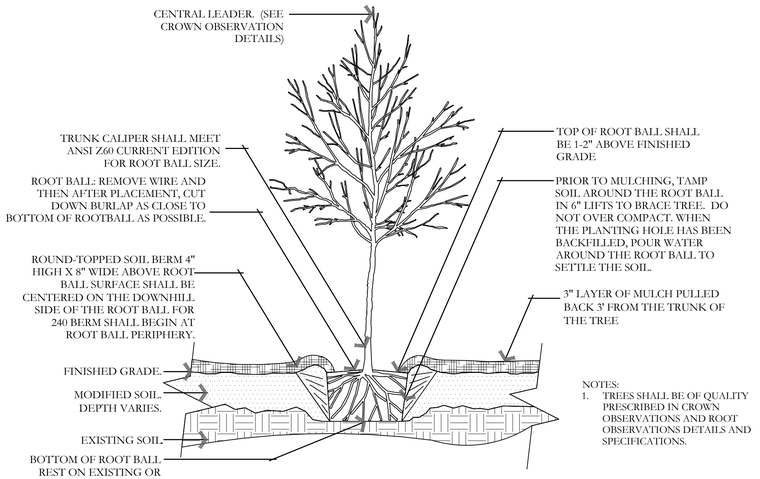
A DECIDUOUS TREE PLANTING

NOT TO SCALE



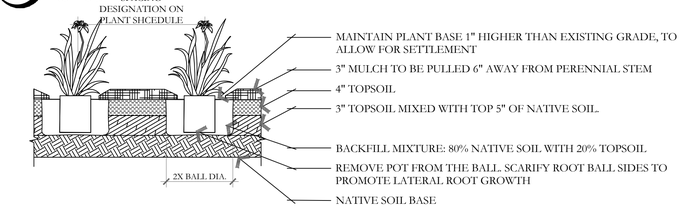
B TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



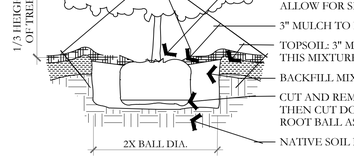
C TREE W/ BERM (EXISTING SOIL MODIFIED)

NOT TO SCALE



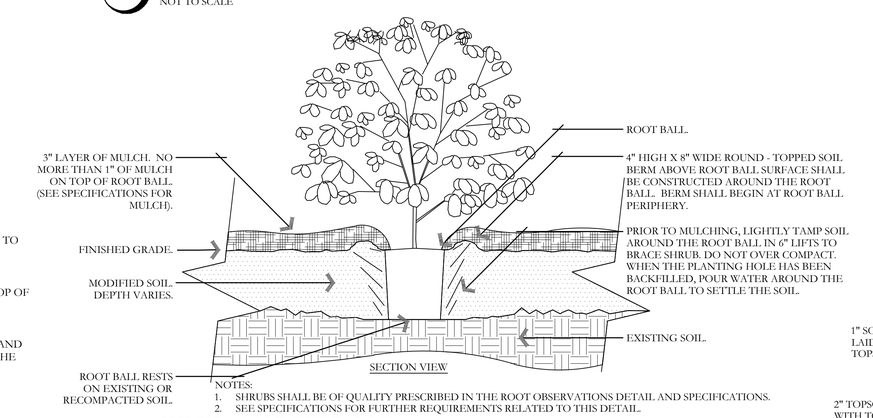
F PERENNIAL PLANTING

NOT TO SCALE



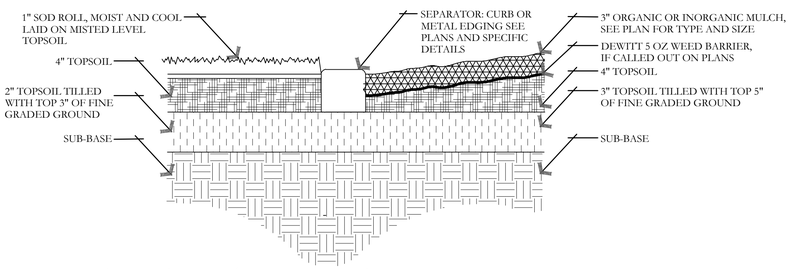
D EVERGREEN TREE PLANTING

NOT TO SCALE



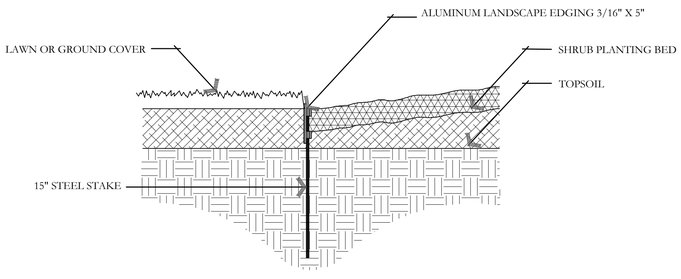
E SHRUB - MODIFIED SOIL

NOT TO SCALE



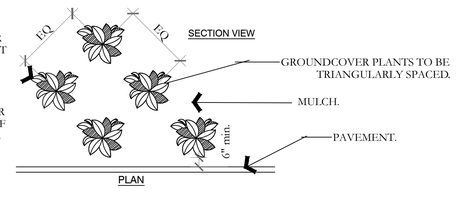
I SOD LAYING/MULCH DETAIL

NOT TO SCALE



G METAL EDGING DETAIL

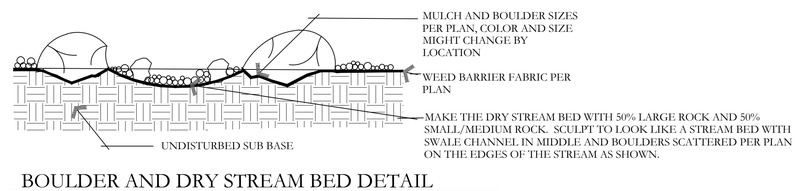
NOT TO SCALE



NOTES:
1- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION. THAT GROW
2- SMALL ROOTS AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
3- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

H PERENNIAL/GROUNDCOVER PLANTING

NOT TO SCALE



J BOULDER AND DRY STREAM BED DETAIL

NOT TO SCALE

ISSUE DATE	PROJECT NUMBER	PLAN INFORMATION	PROJECT INFORMATION	DEVELOPER / PROPERTY OWNER / CLIENT	LANDSCAPE ARCHITECT / PLANNER	LICENSE STAMP	DRAWING INFO
12/23/2025	UT25136	** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025	STAGECOACH RETAIL 2429 N. STAGECOACH DR. SARATOGA SPRINGS, UTAH	CIR CIVIL ENGINEERING 10718 S. BECKSTEAD LANE, STE. 102 SOUTH JORDAN, UT 84095 801-949-6296	PKJ DESIGN GROUP Landscape Architecture & Planning & Visualization 3450 N. TRIUMPH BLVD. SUITE 102 LEHI, UTAH 84043 (801) 995-2217 www.pkjdesigngroup.com	LICENSED LANDSCAPE ARCHITECT JEREMY ANDREW ANSWORTH 812121-5301 12/23/2025 ELECTRONIC SEAL STATE OF UTAH	PM: JTA DRAWN: ACP CHECKED: KBA PLOT DATE: 12/23/2025

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2	CITY COMMENTS	12-19-2025
3	CITY COMMENTS	12-22-2025
4		

811 BLUE STAKES OF UTAH
UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

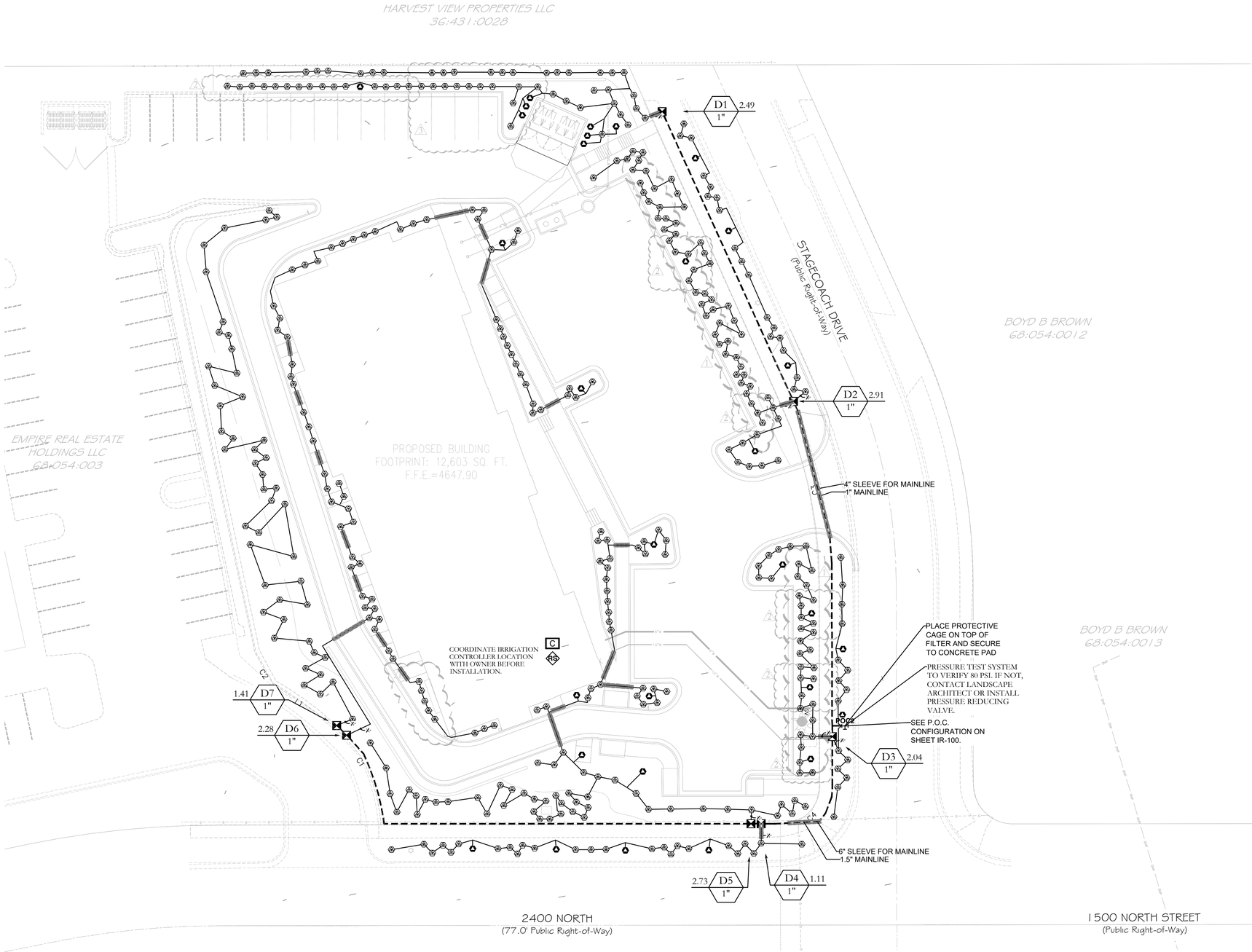
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LANDSCAPE DETAILS

CITY PERMIT SET

LP-501



IRRIGATION LEGEND

(NOTE: PLANT QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN CASE OF DISCREPANCY, THE DRAWING SHALL TAKE PRECEDENCE.) IF YOU NEED HELP WITH A WATER AUDIT CONSULTATION, OR A PLANT MAINTENANCE SCHEDULE, CONTACT PKJ@PKJDESIGNGROUP.COM

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird XCZ-100-IVMQ(2) 1" Wide Flow IVM Drip Control Kit for Commercial Applications. 1in. Ball Valve with 1in. PESBIVM Smart Valve w/ factory installed IVM-SOL 0.3-20 gpm and 1in. Pressure Regulating 40psi Quick-Check Basket Filter 0.3-20 gpm	7
	Rain Bird XFS-09-18 Drip Ring(SHRUB)	409
	Rain Bird XFS-09-18 Drip Ring(TREE)	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird 44-RC 1" 1in. Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, and 2-Piece Body.	1
	Shut Off Valve	1
M	Rain Bird EFB-CP-PRS-D 1-1/2" 2in. Brass Master Valve, that is Contamination Proof w/Self-Flushing Filter Screen. Globe Configuration, Reclaimed Water Compatible, and Purple Handle Cover Designates Non-Potable Water Use. With Pressure Regulator.	1
C	Rain Bird ESPLXIVM 60 Station, 2-Wire Controller w/ Smart Valve Technology. (1) ESPLXIVM 60-Station, Indoor/Outdoor, Plastic Wall-Mount Cabinet. System Requirements: Rain Bird LXIVM-XXX Integrated Valve Modules & 2-Wire Devices. Use Paige Electric Cable P7072D & Rain Bird WC20 Dry Splices ONLY. Ground System w/ (X) LXIVMSD Surge Device in Rain Bird Round Valve Boxes. Install Per Manufacturers Recommendations.	1
RS	Rain Bird WRZ-RC Wireless Rain Sensor Combo, includes 1 receiver and 1 rain sensor transmitter.	1
FS	Rain Bird FS-200-B 2in. Flow Sensor, Brass Model. Suggested Operating Range 10 GPM to 100 GPM. Size for Flow Not According to Pipe Size. Rain Bird Compatible Controllers: ESP-LXIVM(P) | LXD | LXME2(P) | ME3, or Controllers Accepting Custom K-Factor and Offset. Install in Rain Bird Valve Box.	1
POC2	Point of Connection 2"	1
	Irrigation Lateral Line: PVC Schedule 40 3/4"	2,949 lf
OHP OHP	Irrigation Mainline: PVC Schedule 40	501.5 lf
	Pipe Sleeve: PVC Class 200 SDR 21 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.	213.0 lf

Valve Callout
- Valve Number
- Valve Flow
- Valve Size

P.O.C. CONFIGURATION

(NOTE: PRESSURE TEST SYSTEM TO VERIFY 80 PSI. IF NOT, CONTACT LANDSCAPE ARCHITECT OR INSTALL PRESSURE REDUCING VALVE.)

POC SOURCE DATA
SHUTOFF VALVE
F AMIAD SCREEN FILTER
M MASTER VALVE
FS 1" FLOW SENSOR
QUICK COUPLER

ISSUE DATE	PROJECT NUMBER
12/23/2025	UT25136

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2	CITY COMMENTS	12-19-2025
3		
4		

PLAN INFORMATION
** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025

811 BLUE STAKES OF UTAH
UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

NORTH
0' 10' 20' 40' 80'
GRAPHIC SCALE: 1" = 20'

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT
CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER
PKJ DESIGN GROUP
Landscape Architecture Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP
LICENSED LANDSCAPE ARCHITECT
JEREMY ANSWORTH
STATE OF UTAH
8736147-5301
12/23/2025
REGISTERED

DRAWING INFO	
PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/23/2025

IRRIGATION OVERALL PLAN
CITY PERMIT SET
IR-100

IRRIGATION PLAN SPECIFICATIONS

IRRIGATION SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

Work to be done includes all labor, materials, equipment and services required to complete the Project irrigation system as indicated on the Construction Drawings, and as specified herein. Includes but is not limited to: Furnishing and installing underground and above ground sprinkler system complete with any accessories necessary for proper function and operation of the system. All plant material on the Project shall be irrigated. Remove and dispose of any existing sprinkler system components which are disturbed during the construction process and are not to be saved. Restoration of any altered or damaged existing landscape to original state and condition.

1.2 SYSTEM DESCRIPTION

A. Design of irrigation components: Locations of irrigation components on Construction Drawings may be approximate. Piping, sleeving and/or other components shown on Construction drawings may be shown schematically for graphic clarity and demonstration of component groupings and separations. All irrigation components shall be placed in landscaped areas, with the exception of pope and wire in sleeving under hardscapes. Actual routing of pipe, wire or other components may be altered due to site conditions not accounted for in the design process.

B. Construction requirements: Actual placement may vary as required to achieve a minimum of 100% coverage without overspray onto hardscape, buildings or other features.

C. Layout of Irrigation Components: During layout and staking, consult with Owner Approved Representative (hereafter referred to as OAR) to verify proper placement of irrigation components, and to provide Contractor recommendations for changes where revisions may be advisable. Small or minor adjustments to system layout are permissible to avoid existing field obstructions such as utility boxes or street light poles. Contractor shall place remote control valves in groups as practical to economize on quantity of manifold isolation valves. Quick coupler valves shall be placed with manifold groups and protected by manifold isolation valves. Quick coupler valves are shown on Construction Documents in approximate locations.

1.3 DEFINITIONS

A. Water Supply: Secondary water piping and components, furnished and installed by others to provide irrigation water to this Project, including but not limited to filter, saddles, nipples, spools, shut off valves, corporation stop valves, water meters, pressure regulation valves, and piping upstream of (or prior to) the Point of Connection.

B. Point of Connection: Location where the Contractor shall tie into the water supply. May require filter, saddle, nipples, spools, isolation valves or Stop and Waste valve for landscape irrigation needs and use.

C. Main Line Piping: Pressurized piping downstream of the Point of Connection to provide water to remote control valves and quick couplers. Normally under constant pressure.

D. Lateral Line Piping: Circuit piping downstream of remote control valves to provide water to sprinkler heads, drip systems or bubblers.

1.4 REFERENCES

A. The following standards will apply to the work of this Section:

a. ASTM-American Society for Testing and Materials

b. IA - The Irrigation Association: Main BMP Document, Landscape Irrigation Scheduling and Water Management Document.

1.5 SUBMITTALS

A. At least thirty (30) days prior to ordering of any materials, the Contractor shall provide manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system. Submittals shall be in three ring binders or other similar bound form. Provide five copies of submittals to OAR for distribution. Place cover or index sheet indicating order in submittal document. No material shall be ordered, delivered or any work preceded in the field until the required submittals have need reviewed in its entirety and stamped approved. Delivered material shall match the approved samples.

B. Operation and Maintenance Manual:

a. At least thirty (30) days prior to final inspection, the Contractor shall provide Operation and Maintenance manual to OAR, containing:

i. Manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system.

ii. Parts list for each operating element of the system

iii. Manufacturer printed literature on operation and maintenance of operating elements of the system.

iv. Section listing instructions for overall system operation and maintenance. Include directions for Spring Start-up and Winterization.

b. Project Record Copy

i. Maintain at project site one copy of all project documents clearly marked "Project Record Copy". Mark any deviation in material installation on Construction drawings. Maintain and update drawing at least weekly. Project Record Copy to be available to OAR on demand.

ii. Completed Project As-Built Drawings

1. Prior to final inspection, prepare and submit to OAR accurate as-built drawings
2. Show detail and dimension changes made during installation. Show significant details and dimensions that were not shown in original Contract Documents.
3. Field dimension locations of sleeving, points of connection, main line piping, wiring runs not contained in main line pipe trenches, valves and valve boxes, quick coupler valves.
4. Dimensions are to be taken from permanent constructed surfaces, features, or finished edges located at or above finished grade.
5. Controller Map: upon completion of system, place in each controller a color coded copy of the area that controller services: indicating zone number, type of plant material and location on project that zone services. Laminate map with heat shrink clear plastic.

1.6 QUALITY ASSURANCE

A. Acceptance: Do not install work in this section prior to acceptance by OAR.

B. Regulatory Requirements: All work and materials shall be according to any and all rules, regulations or codes, whether they are State or Local laws and ordinances. Contract documents, drawings or specifications may not be construed or interpreted to permit work or materials not conforming to the above codes.

C. Adequate Water Supply: Water supply to this Project exists, installed by others. Connections to these supply lines shall be by this Contractor. Verify that proper connection is available to supply line and is of adequate size. Verify that secondary connection components may be installed if necessary. Perform static pressure test prior to commencement of work. Notify OAR in writing of problems encountered prior to proceeding.

D. Workmanship and Materials:

a. It is the intent of this specification that all material herein specified and shown on the construction documents shall be of the highest quality available and meeting the requirements speceified.

b. All work shall be performed in accordance with the best standards of practice relating to the trade.

E. Contractor Qualifications:

a. Contractor shall provide document or resume including at least the following items:

i. That Contractor has been installing sprinklers on commercial projects for five previous consecutive years.

ii. Contractor is licensed to perform Landscape and Irrigation construction in the State of this Project.

iii. Contractor is bondable for the work to be performed.

iv. References of five projects of similar size and scope completed within the last five years. Three of the projects listed shall be local.

v. Listing of suppliers where materials will be obtained for use on this Project.

vi. Project site Foreman or Supervisor has at least five consecutive years of commercial irrigation installation experience. This person shall be a current Certified Irrigation Contractor in good standing as set forth by the Irrigation Association. This person shall be on Project site at least 75% of each working day.

vii. Evidence that Contractor currently employs workers in sufficient quantities to complete Project within time limits that are established by the Contract.

viii. All General laborers or workers on the Project shall be previously trained and familiar with sprinkler installation and have a minimum of one-year experience. Those workers performing tasks related to PVC pipe shall have certificates designated below.

1.7 DELIVERY-STORAGE-HANDLING

A. During delivery, installation and storage of materials for Project, all materials shall be protected from contamination, damage, vandalism, and prolonged exposure to sunlight. All material stored at Project site shall be neatly organized in a compact arrangement and storage shall not disrupt Project Owner or other trades on Project site. All material to be installed shall be handled by Contractor with care to avoid breakage or damage. Damaged materials attributed to Contractor shall be replaced with new at Contractor's expense.

1.8 SEQUENCING

A. Perform site survey, research utility records, contact utility location services. The Contractor shall familiarize himself with all hazards and utilities prior to work commencement. Install sleeving prior to installation of concrete, paving or other permanent site elements. Irrigation system Point of Connection components, backflow prevention and pressure regulation devices shall be installed and operational prior to all downstream components. All main lines shall be thoroughly flushed of all debris prior to installation of any sprinkler heads.

1.9 WARRANTY

A. Contractor shall provide one year Warranty. Warranty shall cover all materials, workmanship and labor. Warranty shall include filling and or repairing depressions or replacing turf or other plantings due to settlement of irrigation trenches or irrigation system elements. Valve boxes, sprinklers or other components settled from original finish grade shall be restored to proper grade. Irrigation system shall have been adjusted to provide proper, adequate coverage of irrigated areas.

1.10 OWNER'S INSTRUCTION

A. After system is installed, inspected, and approved, instruct Owner's Representatives in complete operation and maintenance procedures. Coordinate instruction with references to previously submitted Operation and Maintenance Manual.

1.11 MAINTENANCE

A. Furnish the following items to Owner's Representative:

a. Two quick coupler keys with hose swivels.

b. One of each type or size of quick coupler valve and remote control valve. Five percent of total quantities used of each sprinkler and sprinkler nozzle.

B. Provide the following services:

a. Winterize entire irrigation system installed under this contract. Winterize by 'blow-out' method using compressed air. Compressor shall be capable of minimum of 175 CFM. This operation shall occur at the end of first growing season after need for plant irrigation but prior to freezing. Compressor shall be capable of evacuating system of all water pressure regulation devices. Compressor shall be regulated to not more than 60 PSI. Start up system the following spring after danger of freezing has passed. Contractor shall train Owner's Representative in proper start-up and winterization procedure.

PART 2 - PRODUCTS

2.1 GENERAL NOTES

A. Contractor shall provide materials to be used on this Project. Contractor shall not remove any material purchased for this Project from the Project Site, nor mix Project materials with other Contractor owned materials. Owner retains right to purchase and provide project material.

2.2 POINT OF CONNECTION

A. The Contractor shall connect onto existing irrigation or water main line as needed for Point(s) of Connection. Contractor shall install new main line as indicated.

2.3 CONNECTION ASSEMBLY

A. Secondary water shall be used on this Project. Install filter and RPZ as needed.

2.4 CONTROL SYSTEM

A. Power supply to the irrigation controller shall be provided for by this Contract.

B. Controller shall be as specified in the drawings. Controller shall be surge protected.

a. Installation of wall-mount/ground pedestal timer controllers: Irrigation contractor shall be responsible for this task. Power configuration for wall-mount/ground pedestal timer controllers shall be 120 VAC unless otherwise noted.

b. Locate Controller(s) in general location shown on Construction drawings. Coordinate power supply and breaker allocation with electrical contractor. Contractor shall be responsible for all power connections to Controllers, whether they are wall mount or pedestal mount. Contractor shall coordinate with electrical or other Project trades as needed to facilitate installation of power to controllers.

C. Wires connecting the remote control valves to the irrigation controller are single conductors, type PE. Wire construction shall incorporate a solid copper conductor and polyethylene (PE) insulation with a minimum thickness of 0.045 inches. The wires shall be UL listed for direct burial in irrigation systems and be rated at a minimum of 30 VAC. Paige Electric Co., LP specification number P7079D.

a. A minimum of 24" of additional wire shall be left at each valve, each splice box and at each controller.

b. Common wire shall be white in color, 12 gauge. Control wire shall be red in color, 14 gauge. Spare/extra wire (3 ft.) shall be looped within each valve box of the grouping it is to service.

D. RCV wire splicing connectors shall be 3M brand DBY or DBR. Wire splicing between controller and valves shall be avoided if at all possible. Any wire splices shall be contained within a valve box. Splices within a valve box that contains no control valves shall be stamped 'WIRE SPLICE' or 'WS' on box lid.

2.5 SLEEVING

A. Contractor shall be responsible to protect existing underground utilities and components. Sleeving minimum size shall be 2". Sleeving 2" through 4" in size shall be S/40 PVC solvent weld. Sleeving 6" and larger shall be CL 200 PVC gasketed. Sleeve diameter shall be at least two times the diameter of the pipe within the sleeve. Sleeves shall be extended 6" minimum beyond walk or edge of pavement. Wire or cable shall not be installed in the same sleeve as piping, but shall be installed in separate sleeves. Sleeve ends on sleeve sizes 4" and larger shall be capped with integral corresponding sized PVC slip cap, pressure fit, until used, to prevent contamination. Sleeves shall be installed at appropriate depths for main line pipe or lateral pipe.

2.6 MAIN LINE PIPE

A. All main line pipe 4" and larger shall be Class 200 gasketed bell end. All main line pipe 3" in size and smaller shall be Schedule 40 PVC solvent weld bell end.

a. Maximum flows allowed through main line pipe shall be:

3/4"	8 GPM
1"	12 GPM
1-1/2"	30 GPM
2"	53 GPM
2-1/2"	75 GPM
3"	110 GPM
4"	180 GPM

b. Main line pipe shall be buried with 24" cover

2.7 MAIN LINE FITTINGS

A. All main line fittings 3" and larger shall be gasketed ductile iron material. All ductile iron fittings having change of direction shall have proper concrete thrust block installed. All main line fittings smaller than 3" in size shall be Schedule 80 PVC.

2.8 ISOLATION VALVES

A. Isolation valves 3" and larger shall be Waterous brand model 2500 east iron gate valve, resilient wedge, push on type, with 2" square operating nut. Place sleeve of 6" or larger pipe over top of valve vertically and then extend to grade. Place 10" round valve box over sleeve at grade.

B. Isolation valves 2-1/2" and smaller shall be Apollo brand 70 series brass ball valves, contained in a Carson Standard size valve box. Valves shall be installed with S/80 PVC TOE Nipples on both sides of the valve. Valve shall be placed so that the handle is vertical toward the top of the valve box in the 'off' position.

2.9 MANIFOLDS

A. Action Manifold fittings shall be used to create unions on both sides of each control valve, allowing the valve to be removed from the box without cutting piping. Valves shall be located in boxes with ample space surrounding them to allow access for maintenance and repair. Where practical, group remote control valves in close proximity, and protect each grouping with a manifold isolation valve as shown in details. Manifold Main Line (or Sub-Main Line) and all manifold components and isolation valves shall be at least as large as the largest diameter lateral served by the respective manifold.

2.10 REMOTE CONTROL VALVES

A. Remote control valves shall be as specified on the drawings. Remote control valves shall be located separately and individually in separate control boxes.

2.11 MANUAL CONTROL VALVES

A. Quick coupler valve shall be attached to the manifold sub-main line using a Lasco G17S212 swing joint assembly with snap-lock outlet and brass stabilizer elbow. Quick coupler valve shall be placed within a Carson 10" round valve box. Top of quick coupler valve cover shall allow for complete installation of valve box lid, but also allow for insertion and operation of key. Base of quick coupler valve and top of quick coupler swing joint shall be encased in ¾" gravel. Contractor shall not place quick coupler valves further than 200 feet apart, to allow for spot watering or supplemental irrigation of new plant material. Quick coupler valve at POC shall not be eliminated or relocated.

2.12 LATERAL LINE PIPE

A. All lateral piping shall be Schedule 40 PVC, solvent weld, and bell end. Lateral pipe shall be buried with 12-18" of cover typically. Lateral pipe shall be ¾", 1", 1 ¼", 1 ½" or 2" in size as indicated on Construction Drawings.

2.13 LATERAL LINE FITTINGS

A. All lateral line fittings shall be S/40 PVC

2.14 SPRAY SPRINKLERS

A. Spray head sprinklers shall be as specified on the drawings. Nozzles shall be as specified on the drawings.

2.15 VALVE BOXES

A. Rainbird valve boxes shall be used on this project. Sizes are as directed in these Specifications, detail sheets or plan sheets. Valve boxes shall be centered over the control valve or element they cover. Valve box shall be sized large enough to allow ample room for services access, removal or replacement of valve or element. Valve box shall be set to flush to finish grade of topsoil or barked areas. Contractor shall provide extensions or stack additional valve boxes as necessary to bring valve box pit to proper grade.

2.16 IMPORT BACKFILL

A. All main line pipe, lateral line pipe and other irrigation elements shall be bedded and backfilled with clean soil, free of rocks 1" and larger. Contractor shall furnish and install additional backfill material as necessary due to rocky conditions. Trenches and other elements shall be compacted and/or water settled to eliminate settling. Debris from trenching operations un-usable for fill shall be removed from project and disposed of properly by Contractor.

2.17 OTHER PRODUCTS

A. Substitution of equivalent products is subject to the OAR's approval and must be designated as accepted in writing.

a. The Contractor shall provide materials to make the system complete and operational.

PART 3 - EXECUTION

3.1 PREPARATION

A. Contractor shall repair or replace work damaged by irrigation system installation. If damaged work is new, repair or replacement shall be performed by the original installer of that work. The existing landscape of this Project shall remain in place. Contractor shall protect and work around existing plant material. Coordination of trench and valve locations shall be laid out for the OAR prior to any excavation occurring. Plant material deemed damaged by the OAR shall be replaced with new plant material at Contractor's expense. Contractor shall not cut existing tree roots larger than 2" to install this Project. Route pipe, wire and irrigation elements around tree canopy drip line to minimize damage to tree roots. Contractor shall have no part of existing system used by other portions of site landscape without water for more than 24 hours at a time.

3.2 TRENCHING AND BACKFILLING

A. Pulling of pipe shall not be permitted on this project. Over excavate trenches both in width and depth. Ensure base of trench is rock or debris free to protect pipe and wire. Grade trench base to ensure flat, even support of piping. Backfill with clean soil or import material. Contractor shall backfill no less than 2" around entire pipe with clean, rock free fill. Main line piping and fittings shall not be backfilled until OAR has inspected and pipe has passed pressure testing. Perform balance of backfill operation to eliminate any settling.

3.3 SLEEVING

A. Sleeve all piping and wiring that pass under paving or hardscape features. Wiring shall be placed in separate sleeving from piping. Sleeves shall be positioned relative to structures or obstructions to allow for pipe or wire within to be removed if necessary.

3.4 GRADES AND DRAINAGE

A. Place irrigation pipe and other elements at uniform grades. Winterization shall be by evacuation with compressed air. Automatic drains shall not be installed on this Project. Manual drains shall only be installed at POC where designated on Construction Drawings.

3.5 PVC PIPE

A. Install pipe to allow for expansion and contraction as recommended by pipe manufacturer.

B. Install main line pipes with 18" of cover, lateral line pipes with 12" of cover.

C. Drawings show diagrammatic or conceptual location of piping - Contractor shall install piping to minimize change of direction, avoid placement under large trees or large shrubs, avoid placement under hardscape features.

D. Plastic pipe shall be cut squarely. Burrs shall be removed. Spigot ends of pipes 3" and larger shall be beveled.

E. Pipe shall not be glued unless ambient temperature is at least 50 degrees F. Pipe shall not be glued in rainy conditions unless properly tented. All solvent weld joints shall be assembled using IPS 711 glue and P70 primer according to manufacturer's specification, no exceptions. All workers performing glue operations shall provide evidence of certification. Glued main line pipe shall cure a minimum of 24 hours prior to being energized. Lateral lines shall cure a minimum of 2 hours prior to being energized and shall not remain under constant pressure unless cured for 24 hours.

F. Appropriate thrust blocking shall be performed on fittings 3" and larger. All threaded joints shall be wrapped with Teflon tape or paste unless directed by product manufacturer or sealing by o-ring.

3.6 CONTROLLERS

A. All grounding for pedestal controllers shall be as directed by controller manufacturer and ASIC guidelines, not to exceed a resistance reading of 5 OHMs.

B. Locate controllers in protected, inconspicuous places, when possible. Coordinate location of pedestal controllers with Landscape Architect to minimize visibility.

C. Coordinate location of wall mount controllers with building or electrical Contractor to facilitate electrical service and future maintenance needs. Wall mount shall be securely fastened to surface. If exterior mounted, wall mount controllers shall have electrical service wire and field control wire in separate, appropriate sized weatherproof electrical conduit, PVC pipe shall not be used.

D. Wiring under hardscape surfaces shall be placed continuously in conduit. Contractor shall be responsible to coordinate sleeving needs for conduit or sweeps elbows from exterior to interior of building.

E. Pedestal controllers shall be placed upon VIT-Strong Box Quick Pad as per manufacturer's recommendations. Controllers shall be oriented such that Owner's Representative maintenance personnel may access easily and perform field system tests efficiently.

F. Place Standard valve box at base of controller or nearby to allow for three to five feet of slack field control wire to be placed at each controller. This Contractor shall provide conduit access if needed for Electrical Contractor. Electrical supply and installation, as well as hook-up to controller shall be by this Contractor.

G. Electrical contractor is in charge of providing 1.5" conduit from controller to outside landscape area. Provide power and room for controller. Provide ethernet to hardwire power into the controller.

3.7 VALVES

A. Isolation valves, remote control valves, and quick coupler valves shall be installed according to manufacturer recommendation and Contract Specifications and Details.

B. Valve boxes shall be set over valves so that all parts of the valve can be reached for service.

C. Valve box and lid shall be set to be flush with finished grade. Only one remote control valve may be installed in a valve box. Place a minimum of 4" of ¼" washed gravel beneath valve box for drainage. Bottom of remote control valve shall be a minimum of 2" above gravel.

3.8 SPRINKLER HEADS

A. No sprinkler shall be located closer than 6" to walls, fences, or buildings.

B. Heads adjacent to walks, curbs, or paths shall be located at grade and 2" away from hardscape.

C. Control valves shall be opened. Then fully flush lateral line pipe and swing joints prior to installation of sprinklers.

D. Spray heads shall be installed and flushed again prior to installation of nozzles.

E. Contractor shall be responsible for adjustment if necessary due to grade changes during landscape construction.

3.9 FIELD QUALITY CONTROL

A. Main line pipes shall not be backfilled or accepted until the system has been tested for 2 hours at 100 psi.

B. Main line pressure test shall include all pipe and components from the point of connection to the upstream side of remote control valves. Test shall include all manifold components under constant pressure. Piping may be tested in sections that can be isolated.

C. Contractor shall provide pressurized water pump to increase or boost pressure where existing static pressure is less than 100 psi.

D. Schedule testing with OAR 48 hours in advance for approval.

E. Leaks or defects shall promptly be repaired or rectified at the Contractors expense and retested until able to pass testing.

F. Grounding resistance at pedestal controller shall also be tested and shall not exceed 5 OHMs.

3.10 ADJUSTMENT

A. Sprinkler heads shall be adjusted to proper height when installed. Changes in grade or adjustment of head height after installation shall be considered a part of the original contract and at Contractor's expense.

B. Adjust all sprinkler heads for arc, radius, proper trim and distribution to cover all landscaped areas that are to be irrigated.

C. Adjust sprinklers so they do not water buildings, structures, or other hardscape features.

D. Adjust run times of station to meet needs of plant material the station services.

3.11 CLEANING

A. Contractor shall be responsible for cleanliness of jobsite. Work areas shall be swept cleanly and picked up daily.

B. Open trenches or hazards shall be protected with yellow caution tape.

C. Contractor is responsible for removal and disposal of offsite trash and debris generated as a result of this Project.

D. OAR shall perform periodic as well as a final cleanliness inspection.

E. Contractor shall leave Project in at least a 'broom clean' condition.

END OF SECTION

WATERING SCHEDULE

90 Day Establishment Period Irrigation Schedule

H/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		45 MIN.		45 MIN.		45 MIN.		Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.		2 HOURS				2 HOURS		precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	2 GAL/HR.		2 HOURS						

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event. Shrubs to be watered so soil is moist 6" below root ball. Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress.

Regular Irrigation Schedule: Begin Spring Watering May 15 (Turf irrigation event once every 5-7 days; Shrubs 2-4 times/month)

H/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.						Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	No Water								

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions

Regular Irrigation Schedule: Begin Summer Watering June 15 (Turf irrigation event once every 2-3 days; Shrubs 1 time/week)

H/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.		60 MIN.		60 MIN.		Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	2 GAL/HR			1 HOUR					

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions
Reference Utah DNR weekly watering guide: https://conservewater.utah.gov/weekly-lawn-watering-guide/

Regular Irrigation Schedule: Begin Fall Watering September 1-End Fall Watering October 15 (Turf irrigation event once every 5-7 days; Shrubs 2-4 time/month)

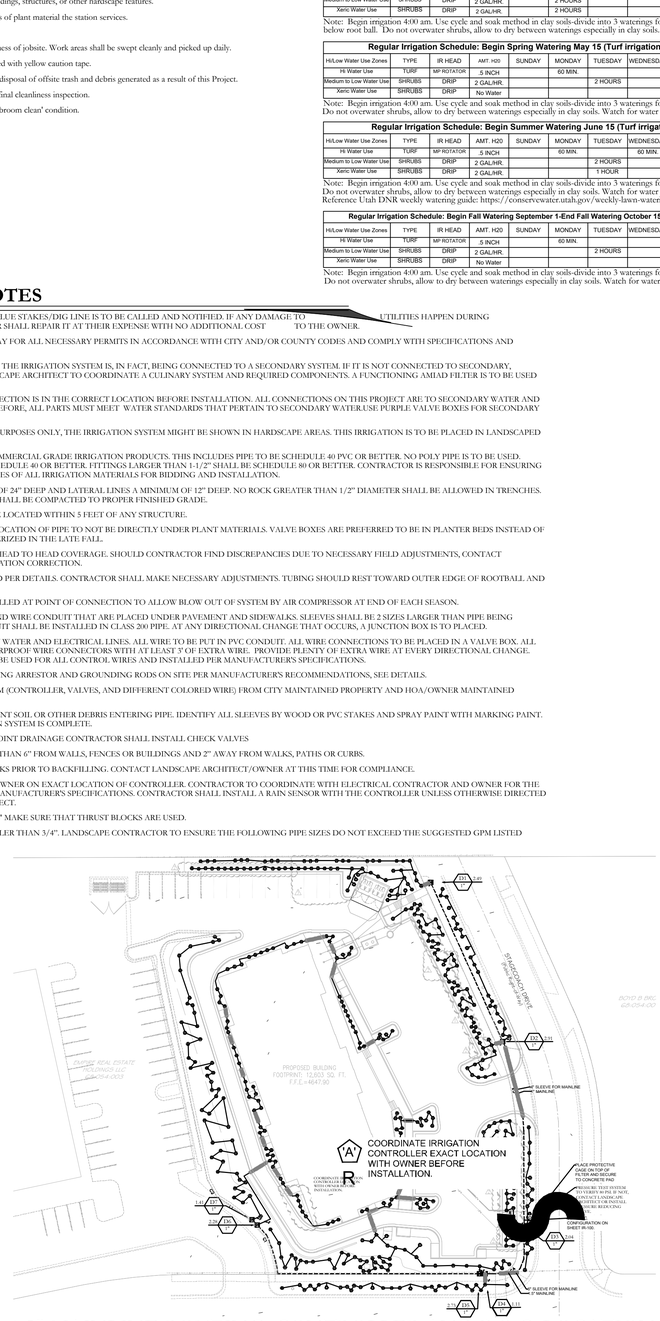
H/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.						Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	No Water								

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions

IRRIGATION NOTES

1. BEFORE WORK IS TO COMMENCE, BLUE STAKES/DIG LINE IS TO BE CALLED AND NOTIFIED. IF ANY DAMAGE TO UTILITIES HAPPEN DURING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR IT AT THEIR EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS IN ACCORDANCE WITH CITY AND/OR COUNTY CODES AND COMPLY WITH SPECIFICATIONS AND DRAWINGS.
3. INVESTIGATE TO MAKE SURE THAT THE IRRIGATION SYSTEM IS, IN FACT, BEING CONNECTED TO A SECONDARY SYSTEM. IF IT IS NOT CONNECTED TO SECONDARY, CONTACT THE OWNER AND LANDSCAPE ARCHITECT TO COORDINATE A CULINARY SYSTEM AND REQUIRED COMPONENTS. A FUNCTIONING AMIAD FILTER IS TO BE USED AT THE POINT OF CONNECTION.
4. VERIFY THAT THE POINT OF CONNECTION IS IN THE CORRECT LOCATION BEFORE INSTALLATION. ALL CONNECTIONS ON THIS PROJECT ARE TO SECONDARY WATER AND SHOULD BE NOTED AS SUCH; THEREFORE, ALL PARTS MUST MEET WATER STANDARDS THAT PERTAIN TO SECONDARY WATER.USE PURPLE VALVE BOXES FOR SECONDARY WATER SYSTEMS.
5. ON OCCASION AND FOR GRAPHIC PURPOSES ONLY, THE IRRIGATION SYSTEM MIGHT BE SHOWN IN HARDSCAPE AREAS. THIS IRRIGATION IS TO BE PLACED IN LANDSCAPED AREAS ON THE PROPERTY SITE.
6. CONTRACTOR SHALL USE ONLY COMMERCIAL GRADE IRRIGATION PRODUCTS. THIS INCLUDES PIPE TO BE SCHEDULE 40 PVC OR BETTER. NO POLY PIPE IS TO BE USED. FITTINGS UP TO 1-1/2" MUST BE SCHEDULE 40 OR BETTER. FITTINGS LARGER THAN 1-1/2" SHALL BE SCHEDULE 80 OR BETTER. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACCURATE COUNTS AND QUANTITIES OF ALL IRRIGATION MATERIALS FOR BIDDING AND INSTALLATION.
7. MAIN LINES SHALL BE A MINIMUM OF 24" DEEP AND LATERAL LINES A MINIMUM OF 12" DEEP. NO ROCK GREATER THAN 1/2" DIAMETER SHALL BE ALLOWED IN TRENCHES. TRENCHING BACKFILL MATERIAL SHALL BE COMPACTED TO PROPER FINISHED GRADE.
8. NO IRRIGATION MAIN LINE MAY BE LOCATED WITHIN 5 FEET OF ANY STRUCTURE.
9. TO AVOID PIPE DAMAGE, ADJUST LOCATION OF PIPE TO NOT BE DIRECTLY UNDER PLANT MATERIALS. VALVE BOXES ARE PREFERRED TO BE IN PLANTER BEDS INSTEAD OF THE LAWN. SYSTEM IS TO BE WINTERIZED IN THE LATE FALL.
10. PLAN INDICATES 100% OR BETTER HEAD TO HEAD COVERAGE. SHOULD CONTRACTOR FIND DISCREPANCIES DUE TO NECESSARY FIELD ADJUSTMENTS, CONTACT LANDSCAPE ARCHITECT FOR IRRIGATION CORRECTION.
11. DRIP IRRIGATION TO BE INSTALLED PER DETAILS. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS. TUBING SHOULD REST TOWARD OUTER EDGE OF ROOTBALL AND NOT AGAINST TRUNK OF PLANT.
12. A QUICK COUPLER SHALL BE INSTALLED AT POINT OF CONNECTION TO ALLOW BLOW OUT OF SYSTEM BY AIR COMPRESSOR AT END OF EACH SEASON.
13. INSTALL SLEEVES FOR ALL PIPES AND WIRE CONDUIT THAT ARE PLACED UNDER PAVEMENT AND SIDEWALKS. SLEEVES SHALL BE 2 SIZES LARGER THAN PIPE BEING PLACED INTERNALLY. WIRE CONDUIT SHALL BE INSTALLED IN CLASS 200 PIPE. AT ANY DIRECTIONAL CHANGE THAT OCCURS, A JUNCTION BOX IS TO PLACED.
14. CONDUITS CAN NOT BE SHARED BY WATER AND ELECTRICAL LINES. ALL WIRE TO BE PUT IN PVC CONDUIT. ALL WIRE CONNECTIONS TO BE PLACED IN A VALVE BOX. ALL WIRE CONNECTIONS TO USE WATERPROOF WIRE CONNECTORS WITH AT LEAST 3" OF EXTRA WIRE. PROVIDE PLENTY OF EXTRA WIRE AT EVERY DIRECTIONAL CHANGE. INSULATED 14 GAUGE COPPER TO BE USED FOR ALL CONTROL WIRES UNLESS INSTALLED PER MANUFACTURERS SPECIFICATIONS.
15. CONTRACTOR TO INSTALL LIGHTNING ARRESTOR AND GROUNDING RODS ON SITE PER MANUFACTURER'S RECOMMENDATIONS, SEE DETAILS.
16. CONTRACTOR TO SEPARATE SYSTEM (CONTROLLER, VALVES, AND DIFFERENT COLORED WIRE) FROM CITY MAINTAINED PROPERTY AND HOA/OWNER MAINTAINED PROPERTY.
17. DUCT TAPE ALL SLEEVES TO PREVENT SOIL OR OTHER DEBRIS ENTERING PIPE. IDENTIFY ALL SLEEVES BY WOOD OR PVC STAKES AND SPRAY PAINT WITH MARKING PAINT. REMOVE STAKES ONCE IRRIGATION SYSTEM IS COMPLETE.
18. TO PREVENT EROSION AND LOW POINT DRAINAGE CONTRACTOR SHALL INSTALL CHECK VALVES
19. LOCATE SPRAY HEADS NO CLOSER THAN 6" FROM WALLS, FENCES OR BUILDINGS AND 2" AWAY FROM WALKS, PATHS OR CURBS.
20. PRESSURE TEST MAINLINE FOR LEAKS PRIOR TO BACKFILLING. CONTACT LANDSCAPE ARCHITECT/OWNER AT THIS TIME FOR COMPLIANCE.
21. CONTRACTOR TO CONSULT WITH OWNER ON EXACT LOCATION OF CONTROLLER. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR AND OWNER FOR THE POWER SUPPLY. INSTALL ALL PER MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL INSTALL A RAIN SENSOR WITH THE CONTROLLER UNLESS OTHERWISE DIRECTED BY OWNER OR LANDSCAPE ARCHITECT.
22. WHEN PIPE SIZE IS LARGER THAN 3" MAKE SURE THAT THRUST BLOCKS ARE USED.
23. LATERAL LINES SHALL BE NO SMALLER THAN 3/4". LANDSCAPE CONTRACTOR TO ENSURE THE FOLLOWING PIPE SIZES DO NOT EXCEED THE SUGGESTED GPM LISTED BELOW:

I	3/4"	8 GPM
II	1"	12 GPM
III	1-1/2'	30 GPM
IV	2"	53 GPM
V	2-1/2"	75 GPM
VI	3"	110 GPM
VII	4"	180 GPM



1.5" MAINLINE ROUTING ,CONTROLLER AND P.O.C. LOCATION OVERVIEW

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2	CITY COMMENTS	12-19-2025
3		
4		

ISSUE DATE: 12/23/2025
PROJECT NUMBER: UT25136
PLAN INFORMATION: ** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025

811 BLUE STAKES OF UTAH UTILITY NOTIFICATION CENTER, INC 1-800-662-4111 www.bluestakes.org

NORTH

0' 25' 50' 100' 200'

GRAPHIC SCALE: 1" = 50'

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

PKJ DESIGN GROUP
Landscape Architecture Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

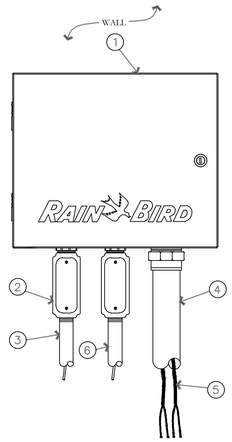
LICENSE STAMP: REGISTERED LANDSCAPE ARCHITECT JEREMY ANDWORTH 8129121-5301 LICENSED 12/23/2025 ELECTRONIC SEAL STATE OF UTAH

DRAWING INFO
PM: JTA
DRAWN: ACP
CHECKED: KBA
PLOT DATE: 12/23/2025

IRRIGATION COVER

CITY PERMIT SET

IR-101



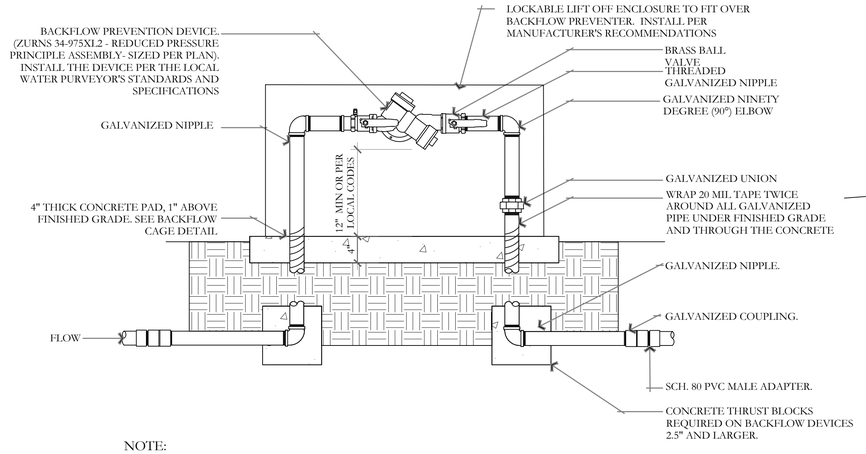
1. TWO-WIRE CONTROLLER: RAIN BIRD ESP-LXIVM/PRO IN LXMM METAL CABINET WITH OUTSIDE WALL MOUNT. INSTALL CONTROLLER AND CABINET ON WALL PER MANUFACTURER'S RECOMMENDATIONS.
2. JUNCTION BOX
3. 1-INCH CONDUIT AND FITTINGS FOR POWER SUPPLY WIRE
4. 2-INCH CONDUIT AND FITTINGS FOR TWO-WIRE CABLE
5. MAXICABLE TWO-WIRE PATH TO FIELD DEVICES, USE A DIFFERENT CABLE JACKET COLOR FOR EACH PATH.
6. 1-INCH CONDUIT AND FITTINGS FOR GROUND WIRE. ONLY FOR OUTDOOR INSTALLATIONS.

NOTES:
1. ESP-LXIVM CONTROLLER IS AVAILABLE IN TWO MODELS. THE LXIVM WITH 60 STATIONS AND THE LMIVM-PRO WITH 240 STATIONS. REFER TO THE CHART BELOW FOR DIFFERENCES BETWEEN THE TWO MODELS.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 4O PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS. IF CONTROLLER IS MOUNTED INDOORS, USE POWER SUPPLY GROUND.

KEY SPECIFICATIONS

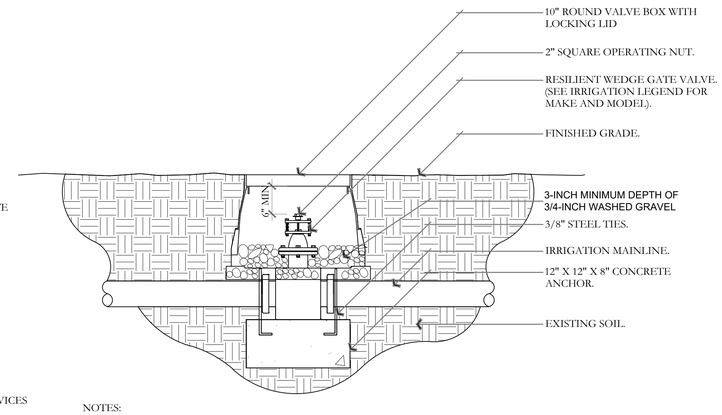
FEATURE / MODEL	MAX PROGRAMS	STATIONS	MAX SIMULSTATIONS	MASTER VALVES	FLOW SENSORS	WEATHER SENSORS
LX-IVM	10	60	8	5	5	4
LX-IVM PRO	40	240	16	10	10	8

A ESP-LXIVM/PRO TWO-WIRE CONTROLLER IN METAL CABINET
NOT TO SCALE — PKJ DESIGN GROUP



NOTE:
1. GALVANIZED NIPPLE SHALL EXTEND 12" PAST THE EDGE OF THE CONCRETE FOOTING.
2. SCH. 80 PVC MALE ADAPTER SHALL BE USED IN CONNECTION FROM GALVANIZE TO THE MAINLINE.
3. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE LANDSCAPE METER.
4. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED IN PLANTING AREA UNLESS APPROVED BY OWNER'S REPRESENTATIVE.
5. SEE DETAIL FOR BACKFLOW CAGE INSTALLATION.
6. ALL ASSEMBLY PARTS (THREADED NIPPLES, FITTINGS, ETC.) SHALL BE GALVANIZED OR BRASS PER LOCAL CODES AND REQUIREMENTS.
7. ALL BACKFLOW PREVENTION DEVICES SHALL HAVE FREEZE BLANKET INCLUDED UPON INSTALLATION.
8. ALL GALVANIZED CONNECTIONS SHALL TO BE MADE USING PIPE THREAD SEALANT. ALL SCH. 80 PVC TO GALVANIZED CONNECTIONS TO BE MADE USING TEFLON TAPE.

B BACKFLOW PREVENTION DETAIL
NOT TO SCALE — PKJ DESIGN GROUP



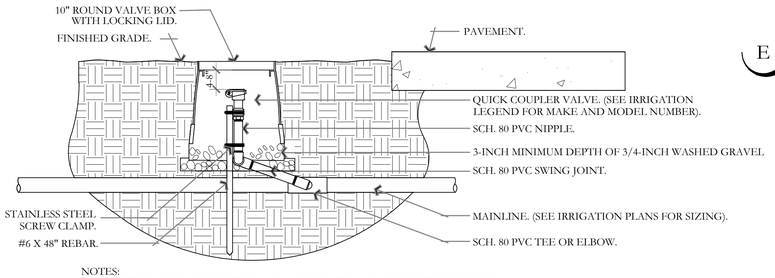
NOTES:
1. INSTALL GATE VALVE PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. VALVE BOX SHALL BE WRAPPED WITH MINIMUM 3 MIL. THICK PLASTIC AND SECURE IT TO VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
3. VALVE BOX SHALL BE LOCATED IN PLANTING AREA.

C GATE VALVE AND ANCHOR DETAIL
NOT TO SCALE — PKJ DESIGN GROUP

D TYPICAL SLEEVING DETAIL
NOT TO SCALE — PKJ DESIGN GROUP

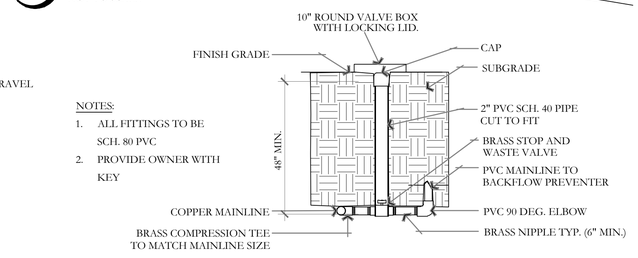
NOTES:
1. SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2. DIRECT BURIAL CONTROL WIRES SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT IF REQUIRED.
3. 2-WIRE IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
4. DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

E IRRIGATION TRENCHING DETAIL
NOT TO SCALE — PKJ DESIGN GROUP



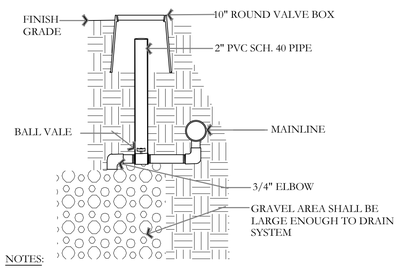
NOTES:
1. ALL THREADED CONNECTIONS SHALL BE INSTALLED USING TEFLON TAPE.
2. VALVE BOX SHALL BE WRAPPED WITH A MINIMUM 3 MIL THICK PLASTIC AND SECURED TO THE VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
3. ALL QUICK COUPLERS SHALL BE INSTALLED A MINIMUM OF 18" OFF OF THE MAINLINE.
4. VALVE BOXES SHALL BE LOCATED IN PLANTING AREAS.

G QUICK COUPLER DETAIL
NOT TO SCALE — PKJ DESIGN GROUP



NOTES:
1. ALL FITTINGS TO BE SCH. 80 PVC
2. PROVIDE OWNER WITH KEY

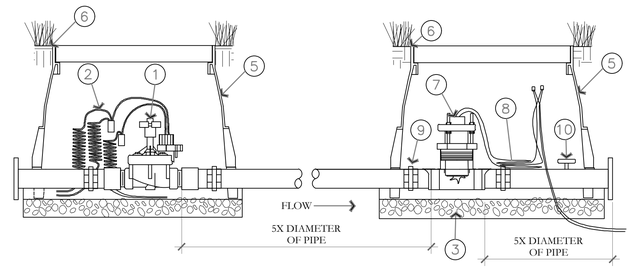
H STOP AND WASTE VALVE ASSEMBLY DETAIL
NOT TO SCALE — PKJ DESIGN GROUP



NOTES:
1. ALL FITTINGS TO BE SCH. 80 PVC
2. PROVIDE OWNER WITH KEY

F MANUAL DRAIN DETAIL
NOT TO SCALE — PKJ DESIGN GROUP

1. NORMALLY CLOSED MASTER VALVE(S)
2. 36-INCH LENGTH OF COILED WIRE TO SATELLITE CONTROLLER SPARE STATION
3. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
5. VALVE BOX WITH COVER - RAINBIRD JUMBO BOX
6. FINISH GRADE
7. RAIN BIRD FS SERIES FLOW SENSOR(S). SEE COVER SHEET FOR SIZE
8. 36-INCH LENGTH OF COILED MAXI-CABLE TO FLOW SENSING
9. PVC PIPE UNION
10. BRASS BALL VALVE



I MASTER VALVE AND FLOW SENSOR DETAIL
NOT TO SCALE — PKJ DESIGN GROUP

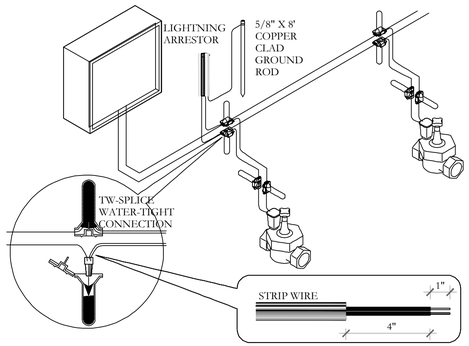
ISSUE DATE	PROJECT NUMBER	PLAN INFORMATION	PROJECT INFORMATION	DEVELOPER / PROPERTY OWNER / CLIENT	LANDSCAPE ARCHITECT / PLANNER	LICENSE STAMP	DRAWING INFO
12/23/2025	UT25136	** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025	STAGECOACH RETAIL 2429 N. STAGECOACH DR. SARATOGA SPRINGS, UTAH	CIR CIVIL ENGINEERING 10718 S. BECKSTEAD LANE, STE. 102 SOUTH JORDAN, UT 84095 801-949-6296	PKJ DESIGN GROUP Landscape Architecture / Planning & Visualization 3450 N. TRIUMPH BLVD. SUITE 102 LEHI, UTAH 84043 (801) 995-2217 www.pkjdesigngroup.com	LICENSED LANDSCAPE ARCHITECT JEREMY AINSWORTH 8128121-5301 REGISTERED 12/23/2025 STATE OF UTAH	PM: JTA DRAWN: ACP CHECKED: KBA PLOT DATE: 12/23/2025

NO.	REVISION	DATE
1	CITY COMMENTS	11-18-2025
2	CITY COMMENTS	12-19-2025
3		
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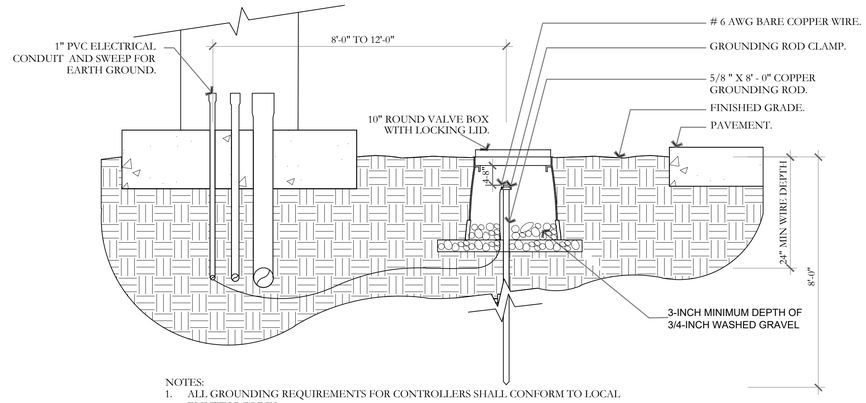
IRRIGATION DETAILS
CITY PERMIT SET
IR-501



J 2-WIRE CONNECTION DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

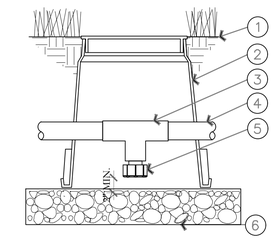


NOTES:
1. ALL GROUNDING REQUIREMENTS FOR CONTROLLERS SHALL CONFORM TO LOCAL ELECTRIC CODES.
2. GROUNDING ROD SHALL NOT BE LOCATED IN THE SAME TRENCH AS THE IRRIGATION MAINLINES OR LATERAL LINES.
3. VALVE BOX SHALL BE WRAPPED WITH A MINIMUM 3 MIL THICK PLASTIC AND SECURED TO THE VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
4. INSTALL GROUNDING ROD PER THE CONTROLLER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

K GROUNDING ROD DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

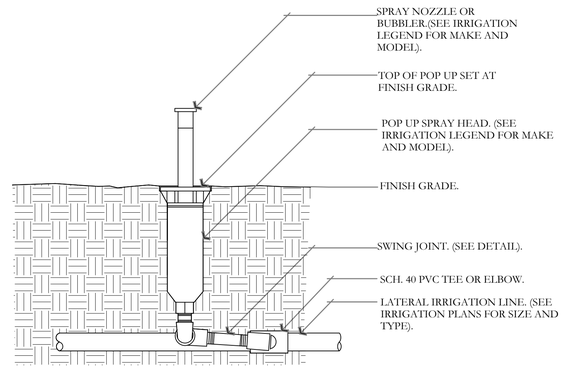


1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-6RND
3. PVC SCH 40 TEE
4. PVC LATERAL PIPE
5. FILTERED DRAIN VALVE: RAIN BIRD 16A-FDV-075
6. 6-INCH MINIMUM DEPTH OF 3/4" WASHED GRAVEL

L MANUAL LINE DRAIN VALVE DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

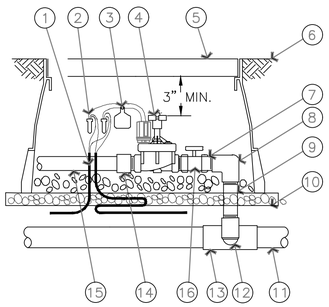


NOTE:
1. 4" POP UPS SHALL BE USED IN TURF AREAS.
2. CONTRACTOR SHALL SETTLE SOIL AROUND THE POP UP AFTER INSTALLATION.
3. ALL POP UP SPRAY HEADS SHALL HAVE CHECK VALVES.
4. ALL SCH. 40 PVC TO SCH. 80 PVC CONNECTIONS SHALL BE MADE USING TEFLON TAPE.

O POP UP-SPRAY HEAD DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

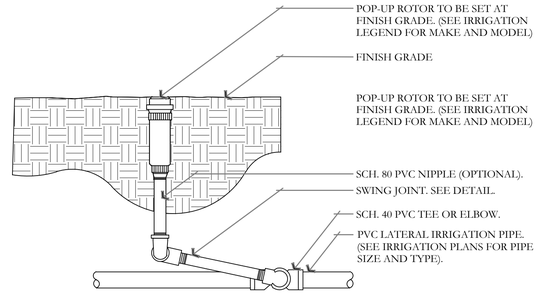


1. 36-INCH LENGTH OF 2-WIRE CABLE
2. WATERPROOF CONNECTION RAIN BIRD WC20 (TWO REQUIRED)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE: RAIN BIRD PEB/PESB/PESB-R WITH IVM-SOL
5. VALVE BOX WITH COVER: RAIN BIRD VB-STD
6. FINISH GRADE/TOP OF MULCH
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL `
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
11. PVC MAINLINE PIPE SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
12. PVC SCH 40 TEE OR ELL
13. PVC SCH 40 MALE ADAPTER
14. PVC LATERAL PIPE
15. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
16. BRASS BALL VALVE

M ELECTRIC REMOTE-CONTROL VALVE PEB OR PESB SERIES WITH IVM-SOL

NOT TO SCALE

PKJ DESIGN GROUP



NOTES:
1. ALL THREADED CONNECTION POINTS BETWEEN SCH. 40 PVC AND SCH. 80 PVC FITTING SHALL BE INSTALLED USING TEFLON TAPE.
2. CONTRACTOR SHALL COMPACT SOIL AROUND ROTOR AND RISER PRIOR TO PLANTING, PLUGGING, SEEDING, OR LAYING OF SOD.

N ROTOR HEAD DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

ISSUE DATE	PROJECT NUMBER
12/23/2025	UT25136

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PLAN INFORMATION

** THIS PRINT FROM PKJ DESIGN GROUP IS BASED ON CIVIL AND ARCHITECT INFORMATION ISSUED ON 11/17/2025

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UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LANDSCAPE ARCHITECT / PLANNER

PKJ DESIGN GROUP
Landscape Architecture / Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8128121-5301
12/23/2025
ELECTRONIC SEAL
STATE OF UTAH

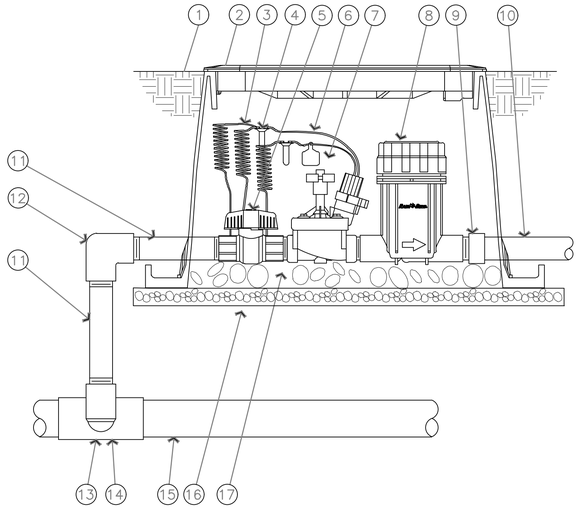
DRAWING INFO

PM:	JTA
DRAWN:	ACP
CHECKED:	KBA
PLOT DATE:	12/23/2025

IRRIGATION DETAILS

CITY PERMIT SET

IR-502

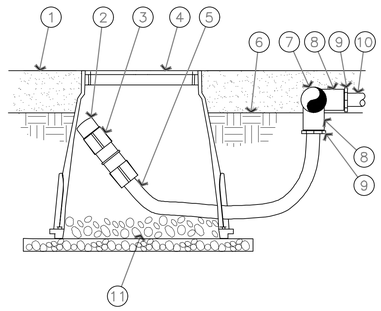


1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
5. 1-INCH BALL VALVE (INCLUDED IN XCZ-PRB-100-COM KIT)
6. ID TAG
7. REMOTE CONTROL VALVE: RAIN BIRD PESB (INCLUCED IN XCZ-PRB-100-COM KIT)
8. PRESSURE REGULATING AND FLOW INDICATING BASKET FILTER: RAIN BIRD XCZ-100-FLOW
9. PVC SCH 40 FEMALE ADAPTOR
10. LATERAL PIPE
11. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 40 ELL
13. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
17. PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN XCZ-PRB-100-COM KIT)

P DRIP CONTROL ZONE KIT DETAIL

NOT TO SCALE

PKJ DESIGN GROUP



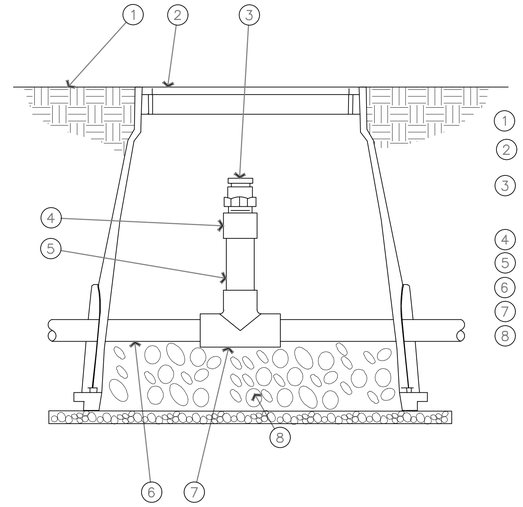
1. MULCH
2. FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS: POTABLE:RAIN BIRD MDCFCAP
3. EASY FIT COUPLING: RAIN BIRD MDCFCOUP
4. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
5. ½" POLYETHYLENE TUBING: RAIN BIRD XF BLANK TUBING
6. FINISH GRADE
7. PVC EXHAUST HEADER
8. PVC SCH 40 TEE OR EL
9. BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
10. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFCV DRIPLINE
11. 3-INCH MINIMUM DEPTH OF 3/4 " WASHED GRAVEL

NOTE:
1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

Q ON-SURFACE DRIPLINE FLUSH POINT DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

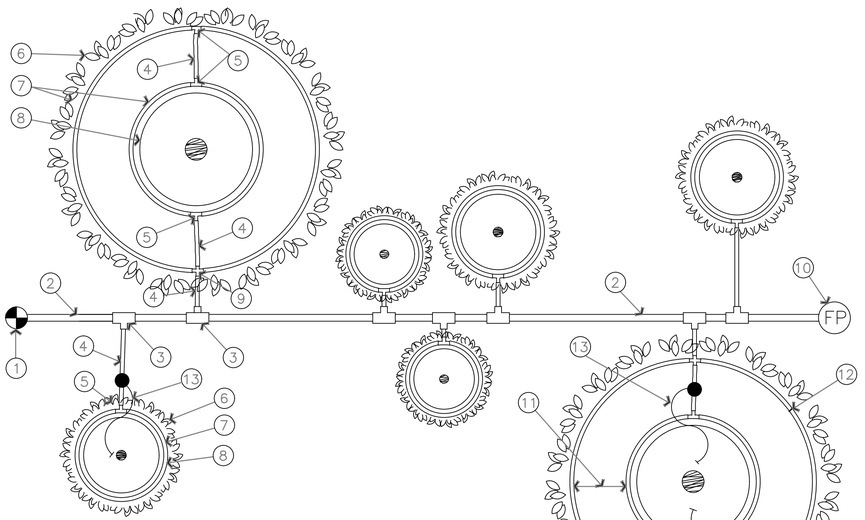


1. FINISH GRADE
2. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
3. ¾" AIR RELIEF VALVE: RAIN BIRD ARV050 TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
4. PVC SCH 40 FEMALE ADAPTER
5. PVC SCH 80 RISER
6. PVC HEADER PIPE
7. PVC SCH 40 TEE
8. 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL

R AIR RELIEF VALVE DETAIL

NOT TO SCALE

PKJ DESIGN GROUP



1. RAIN BIRD CONTROL ZONE KIT (SIZED TO ACCOMIDATE LATERAL FLOW DEMAND)
2. PVC DRIP LATERAL PIPE
3. PVC SCH 40 TEE OR EL (TYPICAL)
4. ½" POLYETHYLENE TUBING: RAIN BIRD XF SERIES- S FOR COPPER SHEILD (TYPICAL)
5. BARB X BARB INSERT TEE: RAIN BIRD XFF-TEE (TYPICAL)
6. PROJECTED CANOPY LINE OF TREE OR SHRUB (TYPICAL)
7. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFCV SERIES PLACE AS SHOWN (LENGTH AS REQUIRED, TYPICAL)
8. ROOT BALL (TYPICAL)
9. BARB X BARB INSERT CROSS: RAIN BIRD XFD-CROSS (TYPICAL)
10. DRIPLINE FLUSH POINT (SEE RAIN BIRD DETAIL: "XFCV DRIPLINE FLUSH POINT WITH BALL VALVE")
11. SPACING PER SPECIFICATION
12. TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (QUANTITY AS REQUIRED, SEE NOTES 2-3 BELOW)
13. POINT SOURCE EMITTERS FOR ESTABLISHMENT PERIOD. REMOVE AFTER ESTABLISHMENT PERIOD.

NOTES:
1. INSTALL MULTIPLE RINGS AS REQUIRED TO PROVIDE IRRIGATION COVERAGE FROM ROOT BALL TO PROJECTED TREE CANOPY. REFER TO RAIN BIRD DESIGN GUIDELINES AND SPECIFICATIONS FOR RECOMMENDED SPACING BETWEEN RINGS.
2. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
3. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.

S ON-SURFACE DRIPLINE TREE/SHRUB DETAIL

NOT TO SCALE

PKJ DESIGN GROUP

ISSUE DATE	PROJECT NUMBER
12/23/2025	UT25136

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PLAN INFORMATION

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1-800-662-4111
www.bluestakes.org

PROJECT INFORMATION

STAGECOACH RETAIL
2429 N. STAGECOACH DR.
SARATOGA SPRINGS, UTAH

DEVELOPER / PROPERTY OWNER / CLIENT

CIR CIVIL ENGINEERING
10718 S. BECKSTEAD LANE, STE. 102
SOUTH JORDAN, UT 84095
801-949-6296

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LEHI, UTAH 84043 (801) 995-2217
www.pkjdesigngroup.com

LICENSE STAMP

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8128121-5301
12/23/2025
STATE OF UTAH

DRAWING INFO

PM: JTA
DRAWN: ACP
CHECKED: KBA
PLOT DATE:

IRRIGATION DETAILS

CITY PERMIT SET

IR-503

Exhibit 8: Photometric Plan

LTG CTRL
SEQUENCE OF OPERATION

LIGHTING AND CONTROLS ARE DESIGNED TO MEET IECC 2021.

TIME CLOCK WILL BE PROGRAMMED TO TURN LIGHTS ON AND OFF FOR HOURS OF OPERATION.

EXTERIOR LIGHTING SHALL BE PROGRAMMED TO TURN ON 30 MIN PRIOR TO SHIFT STARTING AND OFF 1HR AFTER CLOSING OR BY 11PM WHICHEVER IS EARLIER. PHOTOCELL WILL AUTOMATICALLY TURN LIGHTS OFF WHEN DAYLIGHTING IS PRESENT AND SATISFIES THE LIGHTING NEEDS. (C405.2.7.1 - C405.2.7.4)

ALL EXTERIOR LIGHTING NOT SERVING OUTDOOR PARKING AREAS TO BE CONTROLLED SO THAT THE TOTAL WATTAGE OF SUCH LIGHTING IS REDUCED BY NOT LESS THAN 50% DURING ANY TIME WHERE ACTIVITY HAS NOT BEEN DETECTED FOR 10 MINUTES OR MORE PER IECC 2021 C405.2.7.3 (1.3)

GENERAL NOTES

A. POST-ACCEPTANCE ALTERATIONS TO LIGHTING PLANS OR INTEND SUBSTITUTIONS FOR ACCEPTED LIGHTING EQUIPMENT ARE NOT PERMITTED.
B. THE CITY RESERVES THE RIGHT TO CONDUCT POST-INSTALLATION INSPECTIONS TO VERIFY COMPLIANCE WITH THE CITY'S REQUIREMENTS AND WITH THE LIGHTING PLAN PROVIDED IN THE ACCEPTED DRAWINGS. REMEDIAL ACTION DUE TO NON-CONFORMANCE SHALL BE PROVIDED IN THE ACCEPTED DRAWINGS.
C. ALL EXTERIOR LIGHTING SHALL MEET IESNA FULL-CUTOFF CRITERIA AND NOT EXCEED 4000K IN COLOR TEMPERATURE.
D. ALL PATHWAY, WALKWAY, AND SIDEWALK LIGHTING FIXTURES SHALL BE MOUNTED AT A HEIGHT NOT TO EXCEED 10'.
E. THEMED WALKWAY LIGHTING WITHIN REGIONAL PARKS SHALL NOT EXCEED A HEIGHT OF 25'. SUCH LIGHTING WITHIN 200' OF RESIDENTIAL DEVELOPMENT SHALL NOT EXCEED 16'.
F. PARKING LOT POLES SHALL BE LIMITED TO A HEIGHT OF 16' WHEN IN OR WITHIN 200' OF A RESIDENTIAL ZONE; ALL OTHER LOCATIONS SHALL HAVE A HEIGHT LIMIT OF 20'.
G. ALL FREE STANDING LIGHT FIXTURES SHALL BE BLACK.
H. ALL LIGHT FIXTURES AND ASSEMBLIES SHALL BE METAL.

ae urbia
ARCHITECTS & ENGINEERS
909 W SOUTH JORDAN PKWY SOUTH JORDAN-UT 84095
801.746.0456
www.aeurbia.com

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Number Lamps	Lumens per Lamp	Wattage
○	OW1	14	COOPER LIGHTING SOLUTIONS - HALO COMMERCIAL (FORMERLY EATON)	HCC6S15D010MW-HM60525830-61MDH	HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" MEDIUM DISTRIBUTION, HAZE TRIM	1	1509	14
○	OP1	5	ANP Lighting	BVA2401CPM78W30T430K-HSS180	BELLA VISTA - 20.00 IN ANGLE SHADE WITH 7" 180 HOUSE SIDE SHEILD	1	8167	78
▭	OW2	5	COOPER LIGHTING SOLUTIONS - McGraw-Edison	GKO-PB2E-730-U-T4W	GEKKO WALL PACK 12000LM PACKAGE 70CRI 3000K FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC	20	583	104.7
▭	OW3	7	COOPER LIGHTING SOLUTIONS - McGraw-Edison	GKO-PB2A-730-U-T2U	GEKKO WALL PACK 4000LM PACKAGE 70CRI 3000K FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC	20	197	26.5
□	OD1	17	LEDRA BRANDS		NU4-QD-SW-10LM-30K-80-HE60-120-DIM10-NC-WH-WH	1	857	8.14

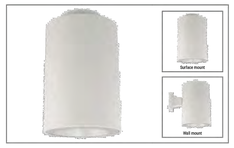
FIXTURES ARE FOR LIGHTING UP THE PARKING LOT AND DRIVE PER PHONE CONVERSATION WITH KENDAL ON 10/7/25 FIXTURE WAS APPROVED TO BE AT 20' AND 15.5' RESPECTIVELY. SEE LIGHT FIXTURE HEIGHTS SHOWN BELOW ON THE PHOTOMETRIC PLAN

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Drive-Thru	+	2.0 fc	4.0 fc	0.6 fc	6.7:1	3.3:1
Parking	+	2.3 fc	6.2 fc	0.2 fc	31.0:1	11.5:1
Property Line	+	0.2 fc	0.8 fc	0.0 fc	N/A	N/A
Walkway & Landscaping	+	6.3 fc	21.5 fc	0.8 fc	26.9:1	7.9:1


OP1 @ 20'
OW1 @ 7'
OD1 @ 10'
OW2 @ 17'
OW2 @ 20'
OW3 @ 15.5'
OW3 @ 15.5'
OW3 @ 15.5

Project		Catalog #		Type	OW1
Prepared by		Notes		Date	



HALO Commercial

HCC6 | HM6C | 61

6-inch lens cylinder and lens wall wash

Typical Applications

Office • Healthcare • Hospitality • Institutional

Interactive Menu

- Order Information page 2
- Product Specifications page 3
- Photometric Data page 4
- Energy & Performance Data page 7
- Product Warranty

Product Certification

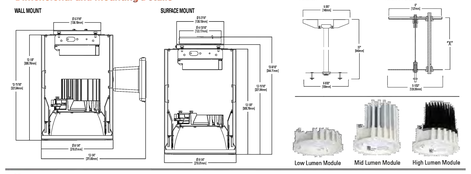
Product Features

Control Compatibility

Top Product Features

- 500 to 5000 lumens
- 2700K, 3000K, 3500K, 4000K, 5000K CCT; 80 or 90 CRI
- Narrow, Medium, Wide beam distribution in precision formed reflectors
- Wall wash with exclusive rotatable linear spread lens
- Specular, Semi Specular, White, Black & White Baffle reflector finishes
- Matte white, matte black, silver and bronze silver cylinder finishes
- Wall mount, and Surface mount with aircraft cable and pendant accessory options

Dimensional and Mounting Details



COOPER Lighting Solutions
a @signify business

ANP Lighting — Specifications BVA2001

Project Name: _____
Fixture Type: OP1 Quantity: _____
Customer: _____

TIR PERFORMANCE PLATFORM SPECIFICATION	EDGE-LIT LED SPECIFICATION	DRIVER SPECIFICATION
• Performance, Ceramic-coating technology	• Edge-Lit comfort solution	• Universal Input 120-277V
• Distributions: Type II, III, IV, V	• Distributions: Type II, III, IV, V	• 0-10V Dimming to 10%
• CCT: 2700K, 3000K, 3500K, 4000K	• CCT: 2700K, 3000K, 3500K, 4000K	• Power Factor @ Full Load >95%
• Life: L70 >50,000 hours	• Life: L70 >60,000 hours	• THD @ Full Load <10%
• Ingress Protection: IP66	• Ingress Protection: IP66	• Constant Current Output 50/60Hz
• Certification: ETL	• Certification: UL, RoHS	• Operating Temperature: -40°C Minimum
• CRI: >80, 3 SDCM	• CRI: >80, 3 SDCM	• Ingress Protection: IP66
		• Certifications: UL Recognized, CSA, RoHS

FINISHES

- A polyester powder coat high quality finish is electro-statically applied and baked at 430° for exceptional durability and color retention. Products undergo an intensive five-step cleansing and pretreatment process for maximum paint adhesion. 5-year warranty for aluminum products. 2-year warranty for steel products.
- Marine grade finish provides superior salt, humidity and UV protection. This coating withstands up to 3,000 hours of continuous salt spray and is available in either a textured or gloss surface. 5-year warranty for aluminum products. 2-year warranty for steel products.

WARRANTY

See www.ANPlighting.com for complete fixture warranty.

LED warranty information

- 5 year limited warranty*
- *Limited Warranty: A typical year is defined as 4,380 hours of operation.

ACCESSORIES



POPULAR POST MOUNTS

See Post Arm Section on Website for Specification Sheets and additional post arms. Dimensions are Projection x Height.
Click here for all Post Mount styles



2023 ANP Lighting™. Spec sheets are for general purposes only. Not all options are compatible – consult factory. Due to product improvements, ANP reserves the right to make minor changes which do not affect the product's overall performance or appearance.

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CD0020E

ANP Lighting — Specifications BVA2001



Project Name: _____
Fixture Type: OP1 Quantity: _____
Customer: _____

Specifications

Material: Durable A356 cast aluminum and aluminum sheet metal. Hardware is stainless steel or zinc-plated steel.

Fixture Mounting: Pendant Mount: Hangs from tenon with Dual Clevis Pins.

Drivers: Universal Voltage 120-277V is standard. 0-10V dimming is standard. (Refer to Driver Specification section for other specifications.)

Dark Sky Friendly: ETL maintain dark sky friendly compatibility: ≤ 3000K

Electrical: A lightning surge protective device is standard (20KA* Max(10KA* Nominal). Approximately 12" of pull wire extends from luminaire. All luminaires are prewired with 0-10V dimming leads. Post Arms and Wall Mounts are also prewired with line voltage & dimming leads.

Finish: A polyester powder coat high quality finish. Marine grade finish is available.

Certifications: UL Listed for outdoor, wet location. LED is IP66.

Modifications: Consult factory for custom or modified designs.

Buy American: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS, and DOT regulations. Click here for additional information.

BVA2001 LED

EPA: 0.92
Weight: 16 lbs.

Catalog Logic:

BVA2001	CPM7BW30	T5	40K	-	PC	-	PA1613	-	T2
Luminaire Series	Light Source & Wattage	Optics	CCT		Accessories		Mounting Source		Finish

Catalog Number: BVA2001 [1] [2] [3] [4] [5] – [6] – [7] – [8]

1 LIGHT SOURCE & WATTAGES

TIR Performance Platform

- CPS30WI8 (30W TIR Performance Platform)
- CPS39WI8 (39W TIR Performance Platform, CA Title 24)
- CPS46WI8 (46W TIR Performance Platform)
- CPM78W30 (78W TIR Performance Platform)
- CPM90W36 (90W TIR Performance Platform)
- CPL120W48 (120W TIR Performance Platform)

Edge-Lit LED Comfort Solution*

- E030LDS (30W Small Edge-Lit LED Comfort Solution)
- E039LDS (39W Small Edge-Lit LED Comfort Solution, CA Title 24)
- E050LDS (50W Small Edge-Lit LED Comfort Solution)
- E065LDS (65W Small Edge-Lit LED Comfort Solution)
- E060LDS (80W Small Edge-Lit LED Comfort Solution)

*See LED Performance Charts for distribution type compatibility.

2 OPTICS

- T2 (Type II)
- T3 (Type III)
- T4 (Type IV)
- T5 (Type V)

3 CCT (COLOR TEMPERATURE)

- 27K (2700K)
- 30K (3000K)
- 35K (3500K)
- 40K (4000K)
- *Consult Factory for 5000K

4 ACCESSORIES

- HSS90 (60° House Side Shield)
- HSS120 (120° House Side Shield)
- *EMG-LED10 (10W LED Emergency Driver, See Below For Compatibility)
- *EMG-LED20 (20W LED Emergency Driver, See Below For Compatibility)
- *EMG-LED30 (30W LED Emergency Driver, See Below For Compatibility)
- HLMSPC-06 (On/Off Motion Sensor/Photocell. High/Low field-configurable, 15' - 30' Sensor Mounting Height)
- HLMSPC-10 (On/Off Motion Sensor/Photocell, High/Low field-configurable, 8' - 15' Sensor Mounting Height)
- HLMSPC-FM (High/Low Motion Sensor/Photocell. Flush Mount, integral to luminaire. 40' Max Sensor Mounting Height.)
- PC (Button Photo Cell)
- TLPC (ANSI C136.41 Twist Lock Photocell, includes receptacle and 120-277V photo cell)
- TL6 (ANSI C136.41 5-Pin Twist Lock Receptacle only)
- TL7 (ANSI C136.41 7-Pin Twist Lock Receptacle only)
- AD (AstroDIM™ - Night-time dimming, consult factory)
- FAID (Field Adjustable Internal Dimmer)

*Most Emergency Drivers are remote mount only (consult factory). 10W & 30W Emergency Drivers are not available with all LED Light Source and Wattage. For percent lumens in emergency mode, see Technical Section

5 MOUNTING SOURCE

Post Mount Arms	Wall Mount Arms
PA1613	WM1763
PA1753	WM1773
PA2313	WM3303
PA3313	WM3203
PA3213	WM3353
PA3533	WM3543
PA6213	WM3163

All Post Mounts | All Wall Mounts

Right Stem Mount	
45T36 (45° Rigid Stem, 4" OD Canopy)	Other lengths available, consult factory.

Pendant Chain Mount	
PEND-CH3 (36" Chain/4 5/8" OD Canopy)	Other lengths available, consult factory.

See last page for popular mounting sizes/styles.

6 FINISHES

*Premium and Marine Grade Finish have additional charges.

Standard Colors	Standard Grade	Marine Grade*	Standard Colors	Standard Grade	Marine Grade*
Aspen Green	10	10M	Copper Clay	53	53M
Caribbean	11	11M	Silver	56	56M
Lilac	12	12M	Black Verde	61	61M
Putty	13	13M	Painted Chrome	70	70M
Raw Unfinished	40	NA	Painted Copper	71	71M
Black	41	41M	Textured Black	72	72M
Forest Green	42	42M	Matte Black	73	73M
Bright Red	43	43M	Textured Architectural Bronze	76	76M
White	44	44M	Textured White	77	77M
Bright Blue	45	45M	Textured Silver	78	78M
Sunny Yellow	46	46M	PREMIUM FINISH	Premium Grade*	Marine Grade*
Aqua Green	47	47M	Textured Desert	80	80M
Galvanized	49	NA	Graystone	82	82M
Navy	50	50M	Oil Rubbed Bronze	83	83M
Architectural Bronze	51	51M	Carbon Graphite	96	96M
Patina Verde	52	52M			

Consult Factory for additional paint charges and availability.

2023 ANP Lighting™. Spec sheets are for general purposes only. Not all options are compatible – consult factory. Due to product improvements, ANP reserves the right to make minor changes which do not affect the product's overall performance or appearance.

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CD0020E

Project		Catalog #		Type	OW2-OW3
Prepared by		Notes		Date	



McGraw-Edison

GKO Gekko

Wall Mount Luminaire

Product Features

Product Certifications

Interactive Menu

- Ordering Information page 2
- Product Specifications page 2
- Optical Configurations page 3
- Energy and Performance Data page 4
- Control Options page 5

Quick Facts

- Available in small and medium housing sizes
- Choice of 5 optical distributions
- 11 lumen packages from 750 up to 13,500
- Efficacies up to 169 lumens per watt

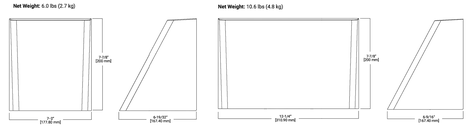
Connected Systems

- WaveLinx PRO Wireless
- WaveLinx LITE Wireless

Dimensional Details

PS1
Net Weight: 6.0 lbs (2.7 kg)

PS2
Net Weight: 10.6 lbs (4.8 kg)



NOTES:
1. Visit http://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified for 3000K CCT and warmer only.

COOPER Lighting Solutions
a @signify business

ANP Lighting — Specifications CB0101

Project: _____
Fixture Type: _____ Quantity: _____
Customer: _____

Specifications

Material: All parts are durable 356 cast aluminum and high strength extruded aluminum.

Shafts are available in 3" and 4" diameter and wall thickness of .125 or .188.

All hardware provided shall be stainless steel or zinc plated steel.

Mounting: Standard anchor bolts provided are 3/4" x 18" x 3". Bolts, nuts and washers shall be hot dipped galvanized steel.

Bolt pattern diameter is 6".

Access
Hand access opening and cover are provided in base of pole. Cover plate is secured by two stainless steel machine screws. (Tamper proof screws provided upon request). See drawing for position of hand hole.

8 3/8" bottom hole provided for conduit access.

Grounding
All cast bases are provided with an aluminum grounding lug integrated to inner wall of shaft, 180 degrees to hand hole. Grounding lug is drilled and tapped to accommodate 10-20 stainless steel machine screw.

Pole Height
Maximum pole height is 16 feet.

Finish:
A polyester powder coat high quality finish is electro-statically applied and baked at 430° for exceptional durability and color retention. Products undergo an intensive five-step cleansing and pretreatment process for maximum paint adhesion.

Marine grade finish provides superior salt, humidity and UV protection. This coating withstands up to 3000 hours of continuous salt spray, comes with a 5-year warranty and is available in either a textured or gloss surface.

Modifications:
Consult factory for custom or modified designs.

CB0101

Weight: 26 lbs
Anchor Bolts: 3

Catalog Logic:

CB0101	-	4S16.188	-	GFI20	-	72
Cast Base		Shaft		Accessory		Finish

Catalog Number: CB0101 [1] [2] [3]

Additional heights and pole diameters may be available. Contact factory for your specific needs.

1

Smooth Shaft Catalog No.	Fluted Shaft Catalog No.	Shaft Diameter	Finished Height	Wall Thickness
3S6.125	3F6.125	3"	6'	.125
3S7.125	3F7.125	3"	7'	.125
3S8.125	3F8.125	3"	8'	.125
3S9.125	3F9.125	3"	9'	.125
3S10.125	3F10.125	3"	10'	.125
3S11.125	-	3"	11'	.125
3S12.125	-	3"	12'	.125
3S13.125	-	3"	13'	.125
3S14.125	-	3"	14'	.125
3S10.188	3F10.188	3"	10'	.188
3S11.188	3F11.188	3"	11'	.188
3S12.188	3F12.188	3"	12'	.188
3S13.188	3F13.188	3"	13'	.188
3S14.188	3F14.188	3"	14'	.188
-	3F15.188	3"	15'	.188
-	3F16.188	3"	16'	.188
-	-	-	-	-
4S8.125	-	4"	8'	.125
4S9.125	-	4"	9'	.125
4S10.125	-	4"	10'	.125
4S11.125	-	4"	11'	.125
4S12.125	-	4"	12'	.125
4S13.125	-	4"	13'	.125
4S14.125	-	4"	14'	.125
-	4F8.188	4"	8'	.188
-	4F9.188	4"	9'	.188
-	4F10.188	4"	10'	.188
-	4F11.188	4"	11'	.188
4S12.188	4F12.188	4"	12'	.188
4S13.188	4F13.188	4"	13'	.188
4S14.188	4F14.188	4"	14'	.188
4S15.188	4F15.188	4"	15'	.188
4S16.188	4F16.188	4"	16'	.188

2 ACCESSORIES

- GFI15 (15 amp GFCI receptacle outlet)
- GFI20 (20 amp GFCI receptacle outlet)
- GFI-WPU (20 amp GFCI receptacle with weather proof in-use cover)
- BAA (Cast Banner Arm A for 24" wide banner)
- BAB (Cast Banner Arm B for 30" wide banner)
- BAC (Cast Banner Arm C for 30" wide banner)
- LR1 (Cast Ladder Rest 1)
- LR3 (Cast Ladder Rest 3)
- LR4 (Cast Ladder Rest 4)
- LR5 (Cast Ladder Rest 5)
- SIGN A (Cast Sign A; 30" x 9", 8 letters/numbers on one line; requires Banner Arm to hang)
- SIGN B (Cast Sign B; 31" x 7", 12 letters/numbers on one line; requires Banner Arm to hang)
- SIGN C (Cast Sign C; 27" x 11", two rows of 8 letters/numbers on each line, requires Banner Arm to hang)
- SIGN D (Cast Sign D; 11" x 6 1/2", 4 letters/numbers on one line)
- SIGN E (Cast Sign E; comes with pole clamp, 24 1/2" x 6", 9 letters/ numbers on one line)
- FPH1 (Flag Pole Holder)
- TP (Tamper Proof Screws)

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ANP reserves the right to change material or design, without prior notice, in a continuing effort to upgrade its products.

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ES002SS

alphabet

PROJECT INFORMATION			
JOB NAME		TYPE	OD1
ORDERING CODE			

NU4 LOPRO

4" Square Downlight Standard White

NSF AT airtight DF dead front PR powerline wet rated





60° - 80° BEAM (Note: Specifications are subject to change without notice)	
14mm COB PERFORMANCE DATA	
LED LIGHT ENGINE	NOMINAL DELIVERED LUMENS / SYSTEM WATTAGE
10LM	880LM @30K/80CRI / 9W
15LM	1290LM @30K/80CRI / 14W
20LM	1700LM @30K/80CRI / 16W
25LM	2120LM @30K/80CRI / 20W
30LM	2540LM @30K/80CRI / 24W
10LM	750LM @30K/90CRI / 9W
15LM	1090LM @30K/90CRI / 14W
20LM	1440LM @30K/90CRI / 16W
25LM	1800LM @30K/90CRI / 20W
30LM	2160LM @30K/90CRI / 24W
Notes	Delivered lumens based on WH80 optic with no lens, (see page 2)

FEATURES
- Thermally optimized for longevity
- 3/4" bezel regress with 1/16" micro flange
- Double jointed driver box allows 4" shallow plenum installation
- 60° - 80° beam control
- UGR < 15
- Multiple mounting, glare control options, trims, and finishes available

DIMMING AND CONTROLS
- 0-10V dimming to 1%
- leading & trailing edge (Triac / ELV) dimming to 1%

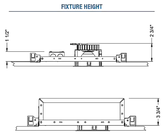
CONSTRUCTION
- Shatter proof acrylic bezel lens
- Lexan® (PC) Optimal connectivity for wireless control signal
- Impact and chemical resistant at the highest level
- Withstands temperatures up to 240°F
- Electrocoated 16-gauge cold-rolled steel construction
- Accommodates ceiling thickness from 3/8" to 1-3/4"

LED
- 90 CRI: SDCM = 2-step MacAdam Ellipse, Lumen Maintenance: L_{70} > 60,000 hrs
- 80 CRI: SDCM = 2-step MacAdam Ellipse, Lumen Maintenance: L_{70} > 66,000 hrs

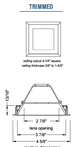
LISTING
- cULus Listed to UL1598 & UL2108; cUL Listed to CSA C22.2 #250.0
- IP65 with lens - Suitable for wet locations with lens - Suitable for damp locations without lens
- Non-conductive, dead-front construction (shower approved)
- NSF/ANSI-2 with lens (Non-Food and Splash Zones)
- Declara. - LBC Red List Approved
- 5 Year Limited warranty

ELECTRICAL
- 120V-277V, 120 only Triac / ELV
- Power factor ≥ 0.9
- 2kV driver input surge protection
- Remote emergency test switch
- 7W, 10W (T20 CEC) and 12W EM 90min battery
- Max. ambient installation temperature 90°F (35°C)

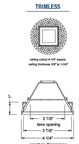
FIXTURE HEIGHT



TRIMMED



TRIMLESS



MILLWORK



AMP
Electrical Engineering, LLC
187 E 2200 N
Lehi, Utah
(801) 420-2153

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www.aeurbia.com

9/23/25
No. 13961352-2002
ANDREW POWELL
STATE OF UTAH
REGISTERED PROFESSIONAL ENGINEER

COULOIR CAPITAL - 24TH RETAIL
-
2400 NORTH STAGECOACH DRIVE, SARATOGA SPRINGS

Revision Schedule		
MARK	DESCRIPTION	Revision Date

AE2025.007

SITE PHOTOMETRIC DETAILS

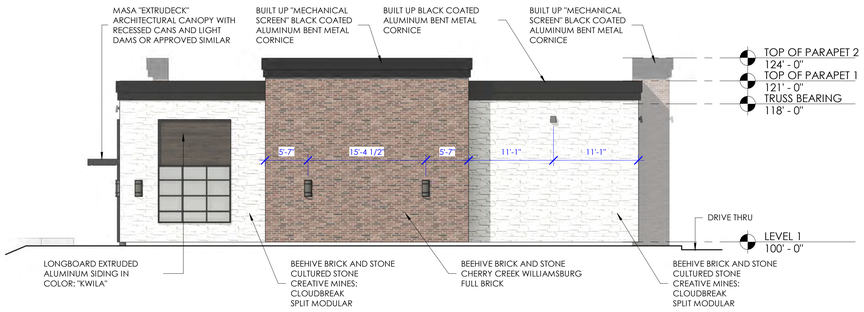
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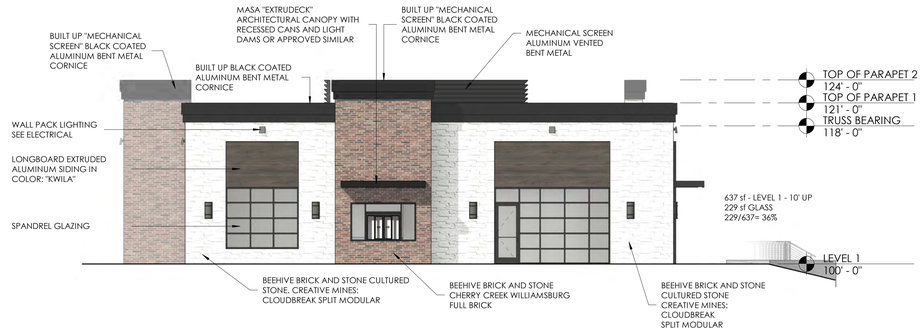
ES002

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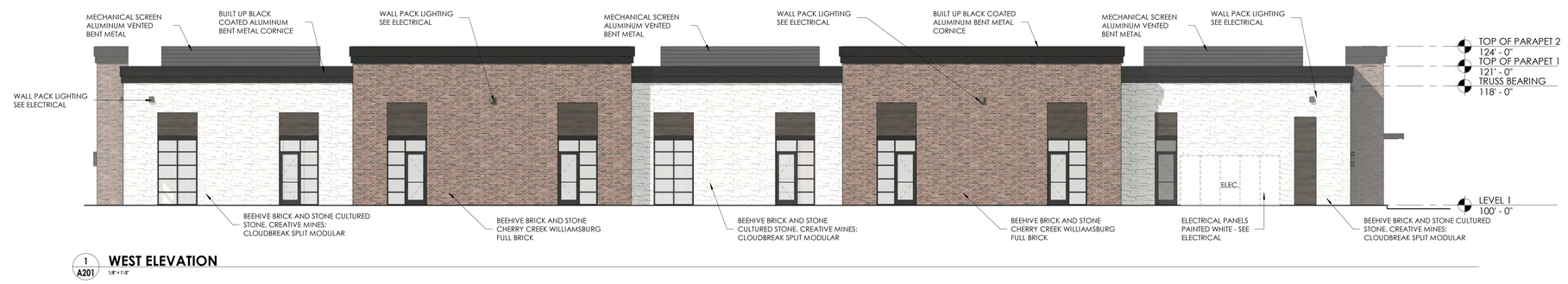


3 A201 **NORTH ELEVATION**
1/8" = 1'-0"



4 A201 **SOUTH ELEVATION**
1/8" = 1'-0"





1 A201 **WEST ELEVATION**
1/8" = 1'-0"





2 A201 **EAST ELEVATION**
1/8" = 1'-0"

GENERAL EXTERIOR FINISH NOTES:

1. ALL EXTERIOR CONCRETE WALLS THAT REQUIRE PAINTING SHALL BE SACK AND PATCHED PRIOR TO PAINTING.
2. REFER TO ELECTRICAL SHEETS FOR ALL EXTERIOR LIGHTING AND COORDINATE ALL NECESSARY POWER LOCATIONS APPROPRIATELY.
3. SEE DETAILS ON A502 FOR TYPICAL CONCRETE REVEALS AND PANEL JOINTS.
4. CAULK AND SEAL ALL EXTERIOR JOINTS WITH APPROVED POLYURETHANE SEALANT.
5. REFER TO MECHANICAL COM-CHECK FOR GLAZING STANDARDS.

MATERIALS LEGEND

	KNOTWOOD HORIZONTAL WOOD GRAIN ALUMINUM CLADDING SYSTEM COLOR: KWILA
	BEEHIVE BRICK AND STONE CULTURED STONE. CREATIVE MINES: CLOUDBREAK SPLIT MODULAR
	BEEHIVE BRICK AND STONE CHERRY CREEK WILLIAMSBURG FULL BRICK
	ALUMINUM CORNICE CAP, CANOPY AND MULLIONS, MECHANICAL SCREEN

ELEVATION FRONTING THE STREET

1ST FLOOR 10'-0" HIGH X LENGTH OF ELEVATION AREA = 1935 sq ft

1ST FLOOR WINDOW AREA = 1164 sq ft / 1935 = 60% GLASS AREA (CODE MINIMUM = 35%)

NORTH ELEVATION MATERIAL PERCENTAGE

STONE	6895f	52%
BRICK	570sf	44%
KNOTWOOD	57sf	4%

SOUTH ELEVATION MATERIAL PERCENTAGE

STONE	572sf	60%
BRICK	226sf	24%
KNOTWOOD	148sf	6%

EAST ELEVATION MATERIAL PERCENTAGE

STONE	1027sf	39%
BRICK	1625sf	38%
KNOTWOOD	610sf	23%

WEST ELEVATION MATERIAL PERCENTAGE

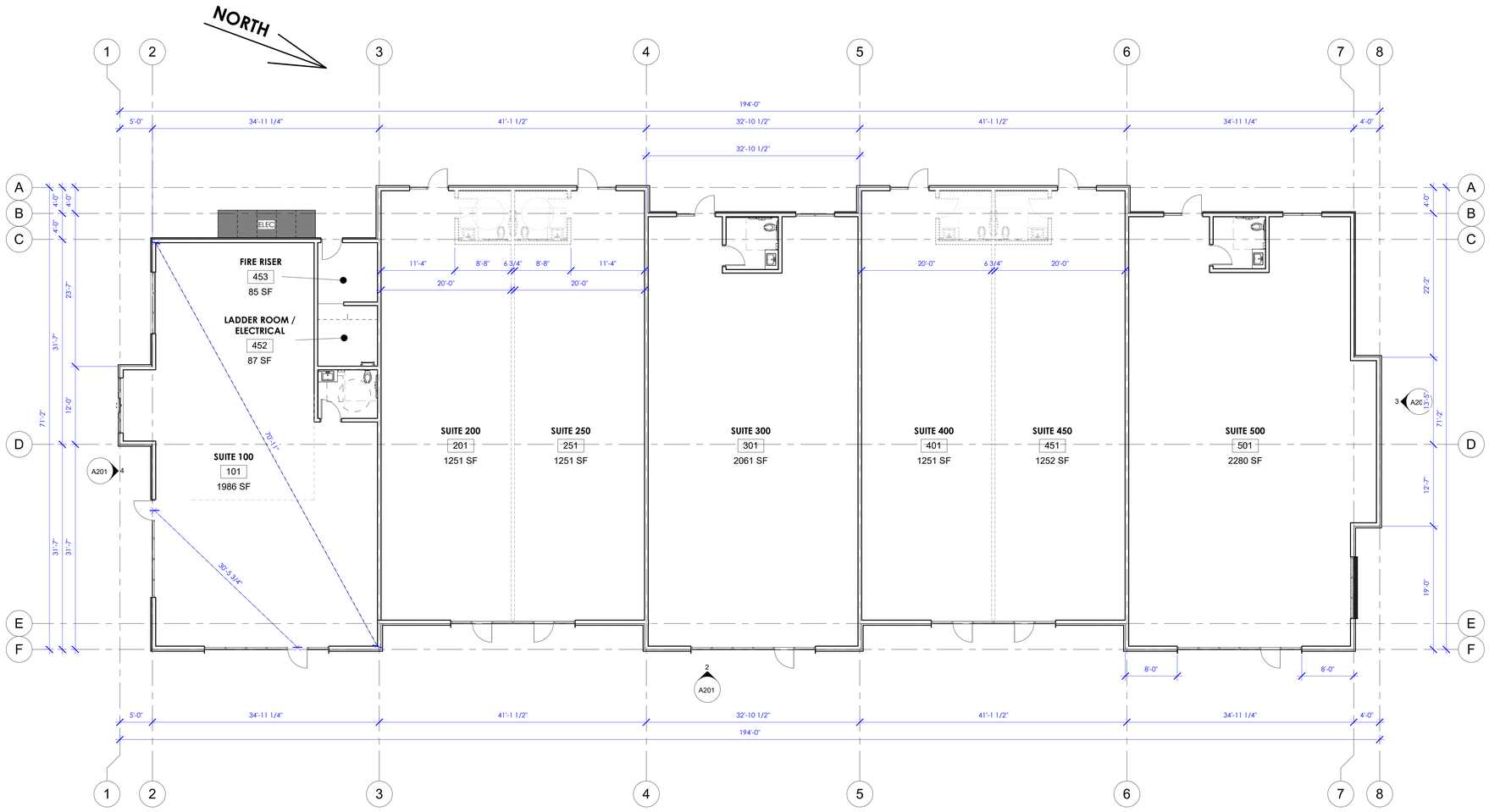
STONE	1673sf	48%
BRICK	1625sf	47%
KNOTWOOD	174sf	5%

COULOIR CAPITAL - 24TH RETAIL

ae urbia ARCHITECTS & ENGINEERS

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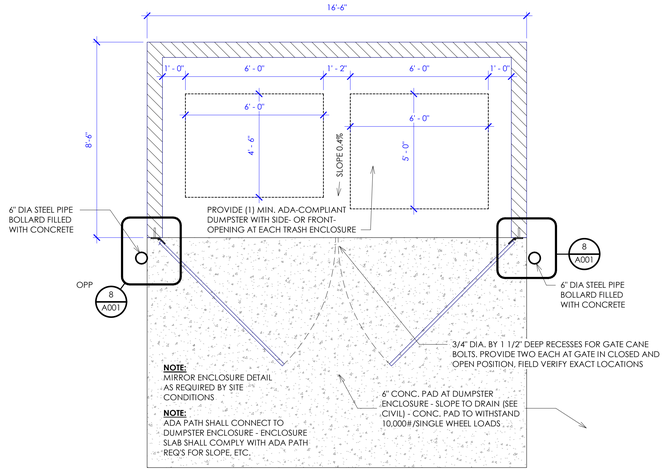
1 P100 LEVEL 1 - FLOOR PLAN

1/8" = 1'-0"

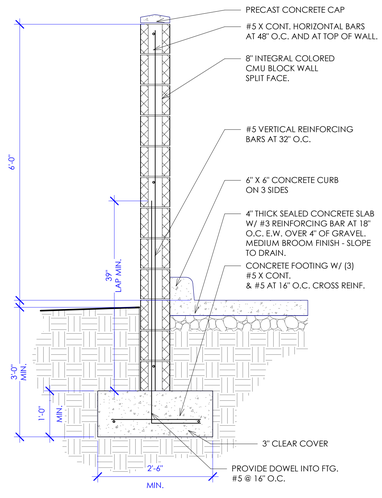
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COULOIR CAPITAL - 24TH RETAIL

ae urbia ARCHITECTS & ENGINEERS



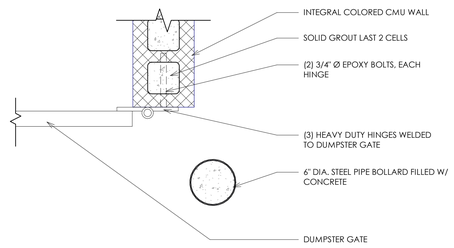
7 A001 TRASH ENCLOSURE DETAIL
3/8" = 1'-0"



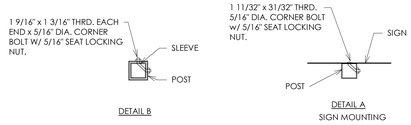
*SOLID GROUTING IN ALL CELLS BELOW GRADE AND IN CELLS CONTAINING REINFORCEMENT.

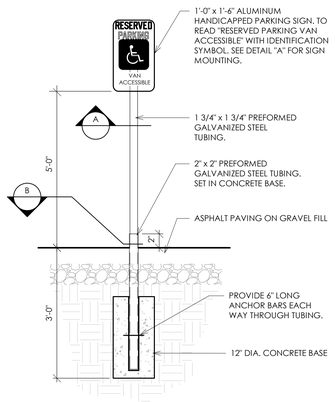
CMU BLOCK TO MATCH SW 7024 - FUNCTIONAL GRAY, OR SIMILAR

10 A001 TRASH ENCLOSURE WALL SECTION
3/4" = 1'-0"

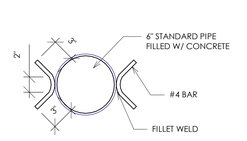


8 A001 DUMPSTER ENCLOSURE DETAIL
1 1/2" = 1'-0"

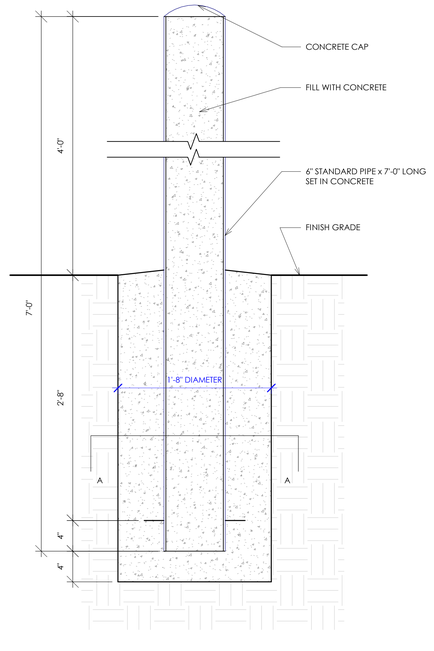




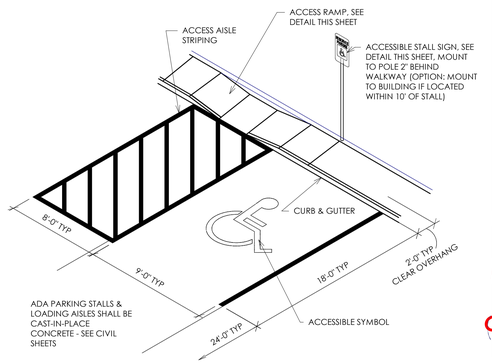
5 A001 HANDICAPPED PARKING SIGN
1" = 1'-0"



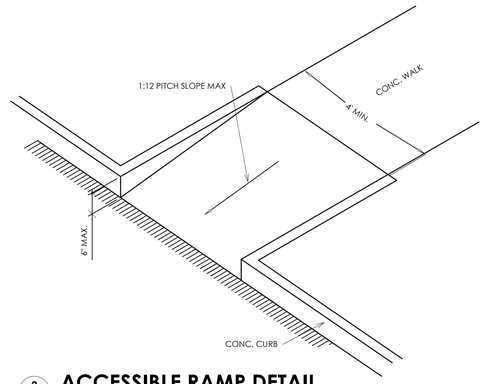
SECTION AA



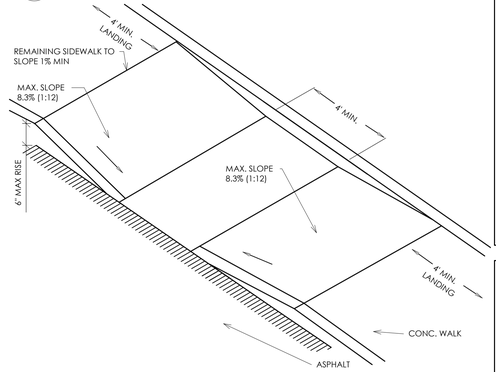
6 A001 PIPE BOLLARD DETAIL
1 1/2" = 1'-0"



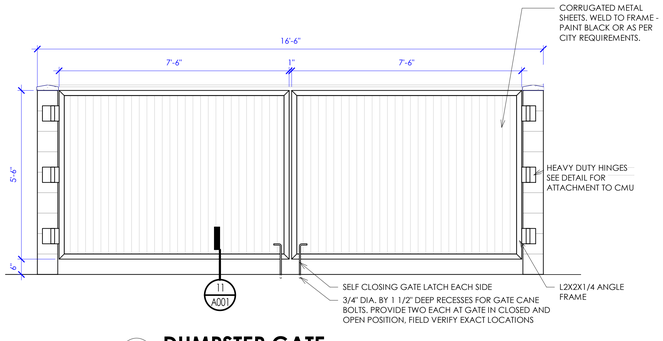
1 A001 ACCESSIBLE PARKING STALL
1/4" = 1'-0"



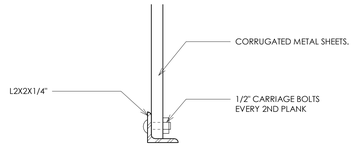
2 A001 ACCESSIBLE RAMP DETAIL
1" = 1'-0"



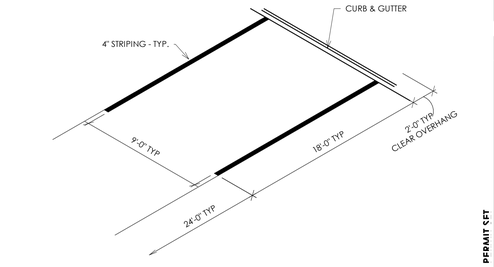
3 A001 ACCESSIBLE RAMP DETAIL
1" = 1'-0"



9 A001 DUMPSTER GATE
1/2" = 1'-0"



11 A001 GATE SECTION
3" = 1'-0"



4 A001 TYPICAL 90 DEG. PARKING STALL
1/4" = 1'-0"

aeurbia
architects and engineers
909 West South Jordan Parkway
south Jordan, utah 84095
phone: 801.746.0456 fax: 801.575.6456
webpage: aeurbia.com

PRELIMINARY NOT FOR CONSTUCTION

10/2/2025 12:57:18 PM

COULOIR CAPITAL - 24TH RETAIL
-
2400 NORTH STAGECOACH DRIVE, SARATOGA SPRINGS

Revision Schedule

MARK	DESCRIPTION	Revision Date

AE2025.007

ROOF PLAN

DATE: 10.23.2019

SHEET #:

A001

PERMIT SET

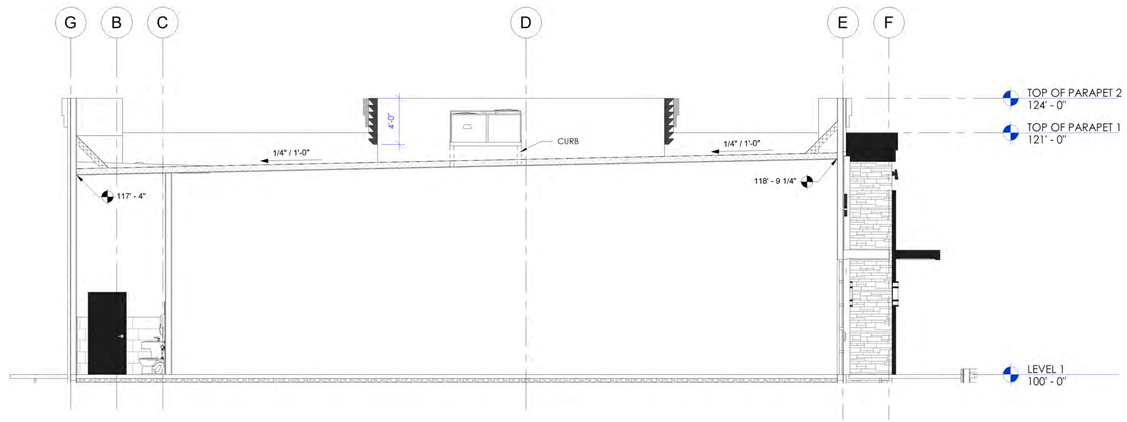
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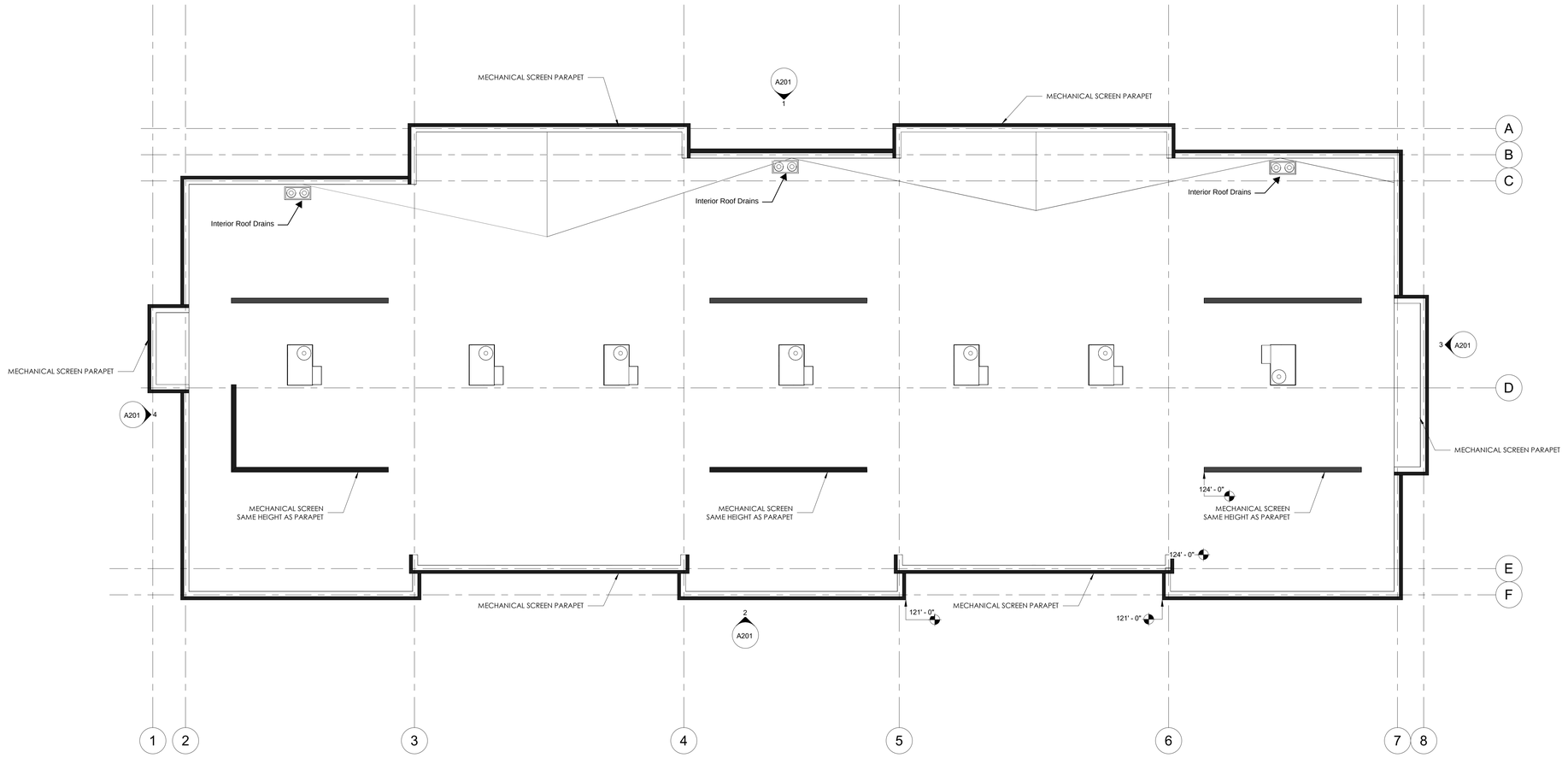
COPYRIGHT © AE URBIA, LLC.

C:\Users\cooper\Documents\AE2025.007 - CouloirCapital - 24th Retail 13_CooperDanielle.rvt

10/2/2025 12:57:18 PM

Keynote Legend





1 A103 **ROOF PLAN**
1/8" = 1'-0"

aeurbia architects and engineers
909 West South Jordan Parkway
south jordan, utah 84095
phone: 801.746.0456 fax: 801.575.6456
webpage: aeurbia.com

PRELIMINARY NOT FOR CONSTUCTION
10/2/2025 12:57:18 PM

COULOIR CAPITAL - 24TH RETAIL
-
2400 NORTH STAGECOACH DRIVE, SARATOGA SPRINGS

Revision Schedule

MARK	DESCRIPTION	Revision Date

AE2025.007

ROOF PLAN

DATE: 10.23.2019

SHEET #:

A103

PERMIT SET

NORTH

COPYRIGHT © AE URBIA, LLC.

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Docusign Envelope ID: E5372082-4FCE-4BDE-85C6-D02C586EC333

RETURN RECORDED DOCUMENT TO:

HARVEST VIEW PROPERTIES, LLC
15782 S. Wood Hollow Dr.
Bluffdale, UT 84065

CROCKETT REAL ESTATE HOLDINGS, LLC
2600 Executive Parkway
Suite 451
Lehi, Ut 84032

Parcel Serial Nos.: 36:431:0028
68:054:0004

RECIPROCAL CROSS ACCESS EASEMENT AGREEMENT

THIS RECIPROCAL CROSS ACCESS EASEMENT AGREEMENT ("**Agreement**"), dated as of the 11 day of Dec., 2025 ("**Effective Date**"), is entered into by and between HARVEST VIEW PROPERTIES, LLC, a Utah limited liability company, on behalf of itself and its heirs, legal representatives, successors, and assigns ("**Harvest View**"), and CROCKETT REAL ESTATE HOLDINGS, LLC, a Utah limited liability company, on behalf of itself and its heirs, legal representatives, successors, and assigns ("**Crockett**" and together with Harvest View, collectively the "**Parties**" and individually a "**Party**").

WITNESSETH:

WHEREAS, Harvest View is the fee owner of certain real property located in Saratoga Springs, Utah, identified by the Parcel Serial Number 36:431:0028 and more particularly described as set forth on Exhibit A attached hereto and made a part hereof ("**HARVEST VIEW**");

WHEREAS, Crockett is the fee owner of certain real property located in Saratoga Springs, Utah, abutting the Harvest View Property, and identified by the Parcel Serial Number 68:054:0004 and more particularly described as set forth on Exhibit B attached hereto and made a part hereof ("**Crockett Property**");

WHEREAS, the Crockett Property and the Harvest View Property (collectively the "**Properties**" and individually a "**Property**") are contiguous to each other;

WHEREAS, the Parties desire grant to the other a reciprocal cross access easement for the purpose of ingress and egress over their respective Properties to assist in traffic flow and provide for the Parties' ongoing obligations relating to the maintenance, repair, and replacement responsibilities and set forth other restrictions, covenants, and conditions to be binding on the Parties pertaining to the easements granted herein, in each case as more particularly provided in this Agreement below; and

WHEREAS, The Parties intend, by recording this Agreement, to submit the effected portion of the Properties to the provisions of this Agreement and to impose upon such mutually beneficial covenants, conditions, and restrictions for the benefit of all of the Parties and all subsequent owners of the Properties.

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NOW, THEREFORE, subject to the mutual covenants, terms, and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. **Grant of Cross Access Easement**. Subject to the terms and conditions of this Agreement, each Party ("**Grantor**") hereby grants to the other Party ("**Grantee**") and to any future owner of the Grantee's Property a perpetual, non-exclusive access easement ("**Access Easement**") in, upon, over, and through the drive aisles, entranceways, and internal circulation routes located on that portion of Grantor's Property from and between the point where the drive aisles of Grantor's Property connects to those of the Grantee's Property at their shared boundary line and continuing to access point of Grantor's Property to and from the public street abutting Grantor's Property. The Access Easement shall serve the purpose of providing non-commercial vehicular and pedestrian access, ingress and egress to the Grantee Property. Such rights granted hereby shall extend to tenants, invitees, customers, and guests of each Grantee.

(a) Non-Interference. Each Party shall maintain the area of the Access Easement located on its respective Property in good condition and repair and shall not erect or allow any barriers, obstructions, or impediments that would materially impair or restrict access to or use of the Access Easement; provided, however, that each Party shall have the right to temporary restrict such access as is reasonably necessary for emergencies or repairs of its Property, provided that such Party uses commercially reasonable efforts to minimize disruptions.

(b) Binding Effect. The Access Easements granted hereby shall run with the land, shall be appurtenant to and for the benefit of each Party's Property, and shall be binding upon and insure to the benefit of the Properties and Parties hereto and their respective successors, assigns, and future owners of the Properties.

(c) Reservation of Rights. Notwithstanding the foregoing, all right, title, and interest in and to the Access Easement area located on each of the Properties and the other remaining portions of each respective Property, which may be used and enjoyed without interfering with the rights granted by this Agreement are reserved to the owner the respective Properties. Each Party reserves the right to use their own respective Property in any manner and for any purpose that does not interfere with the rights granted to the other Party under this Agreement. Further, each Grantor reserves the right to use, modify, and improve its own Property and the area located on their respective Properties subject to the Access Easement granted hereby, including the right to relocate said Access Easement area on its Property; provided, however, that the Party performing such modifications: (i) shall not breach the terms and conditions set forth in Section 1(b) above; (ii) shall provide the other Party with reasonable prior written notice before commencing such; and (iii) shall use commercially reasonable efforts to coordinate with the other Property.

(d) Maintenance and Repair. Each Party shall, at their sole cost and expense, maintain and repair their respective Properties in good condition and repair, including without limitation, snow and ice removal in a way that allows for the continued, uninterrupted and unobstructed use of the Access Easements granted herein. The Parties shall in good faith coordinate their efforts in performing such maintenance and repairs required for abutting portions of the Properties. Notwithstanding the foregoing, any repairs required due to damage caused by a Party or its employees, customers, or invitees to the Property of the other Party shall be repaired at the cost and expense of the responsible Party.

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2. **Representations and Warranties**. Each Party hereby represents, warrants and covenants to the other Party that: (a) it is and shall remain a duly organized entity in good standing with the state of Utah throughout the term of this Agreement; (b) it has the full title interest in their respective Properties and its execution of this Agreement shall be sufficient to ensure the benefits to the Properties and be binding upon all owners thereof; (c) it has the full right, power, title, and interest to grant the rights in accordance with this Agreement; (d) such grant of rights granted under this Agreement may be fully and thoroughly enjoyed and utilized by the other Party pursuant to the terms hereof; and (e) the rights granted hereunder shall not be defeased, impaired, and adversely affected by superior title.

3. **Transferability**. The Parties to this Agreement hereby acknowledge and agree that the rights conferred and obligations and restrictions set forth by this Agreement are intended to, and do, constitute covenants that run with the land and shall inure to the benefit of and be binding upon the Parties and their respective grantees, heirs, successors, and assigns. All rights and obligations appurtenant to each Property under this Agreement shall automatically transfer upon the sale or conveyance of each Property and binding upon such subsequent owner thereof.

4. **Default and Remedies**. A defaulting party shall have ten (10) days following receipt of written notice, which notice shall specifically describe the default(s), to cure said default(s). Failure to cure any described default(s) shall entitle the nonbreaching party to any remedies available at law or in equity including, but not limited to, specific performance, reasonable expenses, attorney fees and costs.

5. **Indemnification**. Each Party shall indemnify, defend, and hold other Party harmless from and against any and all losses, costs, damages, liens, claims, liabilities, or expenses (including, but not limited to, reasonable attorneys' fees, court costs, and disbursements) arising from or by reason of (a) the default on the obligations of the indemnifying Party as set forth in this Agreement; (b) the gross negligence or willful misconduct of the indemnifying Party or its agents; and (c) the indemnifying Party's access to, or use of the Access Easement area located on the Property of the other Party, except for and to the extent that such is resulting from the other Party's gross negligence or willful misconduct.

6. **Insurance**. On or prior to the Effective Date and continuing until this Agreement is terminated either by mutual written agreement by both Parties, each Party shall obtain and maintain commercial general liability insurance with limits of not less than $1,000,0000.00 per occurrence and $2,000,000.00 in aggregate.

7. **Miscellaneous**.

(a) Attorneys' Fees. In the event of any dispute between the Parties regarding the enforcement or effect of this Agreement, including one subject to arbitration, the non-prevailing Party in any such dispute shall pay the prevailing Party's reasonable attorneys' fees and costs incurred. In the event of arbitration, the fees of the arbitrator and the cost of the arbitration shall be paid by the non-prevailing Party. In the event that neither Party wholly prevails, the court or arbitrator, as applicable, may apportion the costs or fees as the court or arbitrator deems appropriate.

(b) Amendment. Except as otherwise expressly set forth herein, this Agreement may not be modified, amended, or terminated except in a writing signed by each Party hereto and duly recorded in the office of the county recorder or as otherwise provided under this Agreement.

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(c) Time of the Essence. Both Parties agree that time is of the essence and that time specifications contained herein shall be strictly construed.

(d) Governing Law. THIS AGREEMENT SHALL BE GOVERNED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF UTAH. EACH PARTY HERETO AGREES THAT ALL ACTIONS OR PROCEEDINGS ARISING IN CONNECTION WITH THIS AGREEMENT AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE TRIED AND LITIGATED IN STATE OR FEDERAL COURTS LOCATED IN THE STATE OF UTAH, UNLESS SUCH ACTIONS OR PROCEEDINGS ARE REQUIRED TO BE BROUGHT IN ANOTHER COURT TO OBTAIN SUBJECT MATTER JURISDICTION OVER THE MATTER IN CONTROVERSY. TO THE EXTENT PERMITTED BY LAW, EACH PARTY HERETO IRREVOCABLY WAIVES ANY RIGHT ANY PARTY HERETO MAY HAVE TO ASSERT THE DOCTRINE OF FORUM NON CONVENIENS, TO ASSERT THAT ANY PARTY HERETO IS NOT SUBJECT TO THE JURISDICTION OF THE AFORESAID COURTS, OR TO OBJECT TO VENUE TO THE EXTENT ANY PROCEEDING IS BROUGHT IN ACCORDANCE WITH THIS SECTION. SERVICE OF PROCESS, SUFFICIENT FOR PERSONAL JURISDICTION IN ANY ACTION AGAINST ANY PARTY HERETO, MAY BE MADE BY REGISTERED OR CERTIFIED MAIL, RETURN RECEIPT REQUESTED, TO ANY SUCH PARTY'S ADDRESS INDICATED IN THE OFFICE OF THE COUNTY RECORDER.

(e) Counterparts. This Agreement may be executed by the Parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original for all purposes, and all such counterparts shall together constitute but one and the same instrument. A signed copy of this Agreement delivered by email shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

(f) Authority. Each of the signatories to this Agreement represent and warrant that they have the authority to execute this Agreement and each individual signing on behalf of a Party to this Agreement states that he or she is the duly authorized representative of the signing Party and that his or her signature on this Agreement has been duly authorized by, and creates the binding and enforceable obligation of, the Party on whose behalf the representative is signing.

(g) Further Cooperation. Each of the signatories to this Agreement agree to execute such other documents and to perform such other acts as may be reasonably necessary or desirable to further the expressed intent and purpose of this Agreement.

[SIGNATURE PAGE FOLLOWS]

Docusign Envelope ID: E5372082-4FCE-4BDE-85C6-D02C586EC333

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the Effective Date first written above.

HARVEST VIEW:

HARVEST VIEW PROPERTIES LLC,

a Utah limited liability company

DocuSigned by:

By: _____
066CDCEE77C8496...

Name: AARON LARSON

Title: Manager

CROCKETT:

CROCKETT REAL ESTATE HOLDINGS LLC,

a Utah limited liability company

Signed by:

By: _____
59C17B2CF9CC4B1...

Name: Dustin Wheeler

Title: Manager

Docusign Envelope ID: E5372082-4FCE-4BDE-85C6-D02C586EC333

EXHIBIT A

LEGAL DESCRIPTION OF HARVEST VIEW PROPERTY

Parcel Serial No.: 36:431:0028

Legal Description: PART LOT 4, PLAT A, COUNTRY MILE SUB DESCRIBED AS FOLLOWS: AREA 3.407 AC

Docusign Envelope ID: E5372082-4FCE-4BDE-85C6-D02C586EC333

EXHIBIT B

LEGAL DESCRIPTION OF CROCKETT PROPERTY

Parcel Serial No.: 68:054:0004

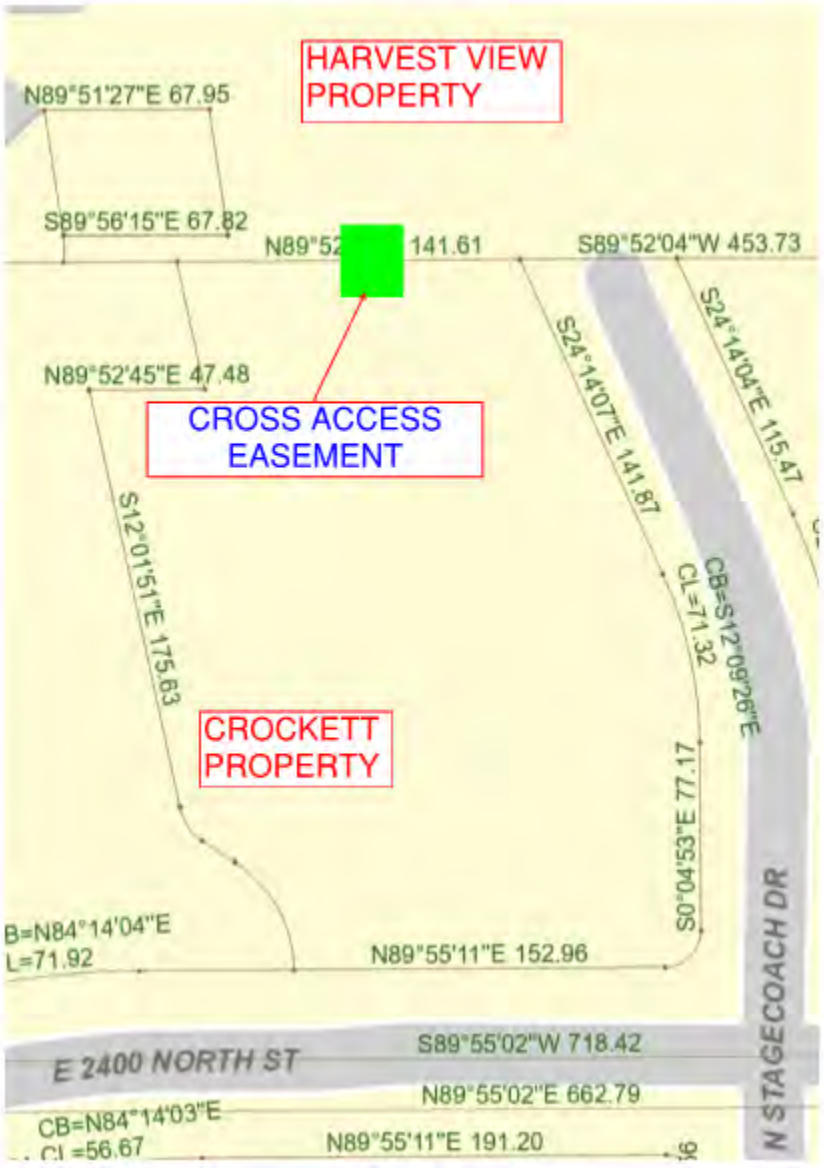
Legal Description:

LOT 4, THE HUB AT SARATOGA, PHASE 1 SUBDIVISION ACCORDING TO THE OFFICIAL PLAT THEREOF ON FILE AND OF RECORD IN THE OFFICE OF THE UTAH COUNTY RECORDER

Docusign Envelope ID: E5372082-4FCE-4BDE-85C6-D02C586EC333

EXHIBIT C

ACCESS EASEMENT AREA*



*This Exhibit is intended to provide general location of Access Easement. Final location will be determined at Final Site Plan Approval with the City of Saratoga Springs.

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

Exhibit 11: Shared Parking Agreement

RETURN RECORDED DOCUMENT TO:

EMPIRE REAL ESTATE HOLDINGS, LLC
258 W 100 N
Lindon, UT 84042

CROCKETT REAL ESTATE HOLDINGS, LLC
2600 W. Executive Parkway
Suite 451
Lehi UT 84043

Parcel Serial Nos.: 68:054:0003
68:054:0004

SHARED PARKING AGREEMENT

THIS SHARED PARKING AGREEMENT ("**Agreement**"), dated as of the ___ day of August, 2025 ("**Effective Date**"), is entered into by and between EMPIRE REAL ESTATE HOLDINGS, LLC, a Utah limited liability company, on behalf of itself and its heirs, legal representatives, successors, and assigns ("**Empire**"), and CROCKETT REAL ESTATE HOLDINGS, LLC, a Utah limited liability company, on behalf of itself and its heirs, legal representatives, successors, and assigns ("**Crockett**" and together with Empire, collectively the "**Parties**" and individually a "**Party**").

WITNESSETH:

WHEREAS, Empire is the fee owner of certain real property located in Saratoga Springs, Utah, identified by the Parcel Serial Number 68:054:0003 and more particularly described as set forth on Exhibit A attached hereto and made a part hereof ("**Empire Property**");

WHEREAS, Crockett is the fee owner of certain real property located in Saratoga Springs, Utah, abutting the Empire Property, and identified by the Parcel Serial Number 68:054:0004 and more particularly described as set forth on Exhibit B attached hereto and made a part hereof ("**Crockett Property**" and together with the Empire Property, collectively the "**Properties**" and individually a "**Property**");

WHEREAS, Crockett desires to have the use of certain parking stalls located on the Empire Property to be used as non-exclusive parking for the Crockett Property, and Empire desires to permit such non-exclusive use subject to the terms of this Agreement;

WHEREAS, the Parties desire to provide for the shared use of the Shared Parking Area (as defined below) as well as the Parties' ongoing obligations relating to the maintenance, repair, and replacement of Shared Parking Area and set forth other restrictions, covenants, and conditions to be binding on the Parties pertaining to the Shared Parking Area, in each case as more particularly provided in this Agreement below; and

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

WHEREAS, The Parties intend, by recording this Agreement, to submit the Shared Parking Area to the provisions of this Agreement and to impose upon such mutually beneficial covenants, conditions, and restrictions for the benefit of all of the Parties and all subsequent owners of the Properties, which covenants, conditions, and restrictions are intended to run with each respective Property.

NOW, THEREFORE, subject to the mutual covenants, terms, and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. **Shared Parking Use; Compliance with Laws**. Subject to the terms and conditions of this Agreement, Empire hereby leases to Crockett, and Crockett hereby leases from Empire, on a non-exclusive basis, the right to use [Nine] (9) parking stalls located on the Empire Property designated for parking, as depicted on *Exhibit C* (the "Shared Parking Area"), for vehicular parking, on the terms and conditions set forth in this Agreement. Notwithstanding anything to the contrary contained herein, the term of this Agreement and the Parking Lease granted herein (the "Commencement Date") shall commence upon the earlier to occur of (a) the date of substantial completion of the retail building on the Crockett Property that the Shared Parking Area is intended to serve, or (b) the date a Certificate of Occupancy (temporary or final) is issued for such improvements by the City of Saratoga Springs (the "Substantial Completion Date"). The Parties shall execute a written notice confirming the Commencement Date when it occurs. The initial term and all renewal terms shall be measured from such Commencement Date. Any Parking Lease Fee payable hereunder shall be prorated for the first calendar year based on the number of days remaining in such year after the Commencement Date. This lease of parking rights (the "Parking Lease") shall have an initial term of **FIFTEEN (15) years**, commencing on the Effective Date, with up to **THREE (3) renewal terms** of **TEN (10) years each**, exercisable upon written notice from Crockett to Empire not less than ninety (90) days prior to the expiration of the then-current term.

The rights granted herein are contractual and shall not run with the land. Upon expiration or earlier termination of this Agreement, all rights of Crockett in and to the Shared Parking Area shall automatically terminate, and Crockett shall have no further right to use any portion of the Empire Property for parking unless otherwise agreed in writing by the Parties. Such rights granted hereby shall extend to tenants, invitees, customers, and guests of Crockett. Empire reserves the right to relocate said Shared Parking Area to an equivalent number of other parking stalls with the Empire Property that are reasonably acceptable in relative location to Crockett, in the exercise of objectively reasonable judgment, at any time by delivery of THIRTY (30) days' advance written notice to Crockett. In the event Empire elects to relocate the Shared Parking Area, Empire shall have the right to record an amendment to this Agreement with an updated Exhibit C depicting the new Shared Parking Area.

Parking Lease Fee. As consideration for the Parking Lease granted herein, Crockett shall pay to Empire an annual lease fee in the amount of **One Thousand and No/100 Dollars ($1,000.00)** ("Parking Lease Fee"). The Parking Lease Fee shall be due and payable on or before January 15 of each calendar year during the term of this Agreement, with the first payment due within thirty (30) days following the Effective Date. If this Agreement terminates prior to the end of any calendar year, the Parking Lease Fee for such year shall be prorated based on the number of days the Agreement was in effect. Payments shall be made to Empire at the address designated for notice herein or to such other address as Empire may designate in writing.

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Each of the Parties hereto agrees to comply with any and all applicable laws, covenants, and restrictions applicable to the Properties and otherwise related to parking and applicable to their respective Property, including without limitation, any recorded cross-access easements of which the Properties are subject to.

(a) Certain Restrictions. Except for temporary commercially reasonable obstructions, such as for deliveries, neither Party shall unreasonably obstruct nor block any accessway within the Properties. Any violation of this provision shall constitute an immediate default under this Agreement, and the non-defaulting Party may take immediate action to remove any obstruction at the defaulting Party's sole cost and expense. Crockett shall have the right to use the Shared Parking Area twenty-four (24) hours a day and shall limit the use of such parking only for the parking of standard non-commercial passenger vehicles; provided, however, that such right shall not include and shall be subject to each of the following restricted uses: (i) overnight parking, (ii) commercial vehicular parking, (iii) parking of oversized vehicles that would that would obstruct or unreasonably impair or restrict the access from one Property to the other Property or use of the Shared Parking Area, and (iv) storage of merchandise, equipment, materials, or any other goods.

Signage and Parking Management. Crockett shall be solely responsible for all costs associated with the installation and maintenance of signage in the Shared Parking Area or on other parking stalls located on the Empire Property that are reasonably necessary, as determined by Empire in the exercise of objectively reasonable discretion, to designate the Shared Parking Area for parking in accordance with this Agreement and prevent or minimize unauthorized parking outside the Shared Parking Area on Empire's Property, including without limitation, installation of signage providing notice of risk of being towed for unauthorized parking outside the Shared Parking Area. Prior to Crockett's use of the Shared Parking Area, all parking signage designs and locations shall first be prepared by Crockett and submitted to Empire for Empire's review and approval, and said signage, once approved by Empire, must be installed by Crockett. Crockett shall use commercially reasonable efforts to ensure that (i) the Crockett Property is used as the primary parking area for its customers, invitees, and guests, with the Shared Parking Area being used only for overflow parking, (ii) its customers, invitees, and guests do not park in any parking stalls located on the Empire Property outside the Shared Parking Area, and (iii) in the event of any significant or repeated violations of (ii) above and all other failures to comply with the applicable legal requirements and other restrictions as contemplated in this Section 1 above by any third-party invitees or guests of Crockett that are not under the control of Crockett, all such third-parties are put on notice of such applicable restrictions and the resulting penalties for violations including without limitation, being subject to parking tickets/fines and being subject to having the vehicle towed, and to enforce such penalties. Crocket's responsibilities under (iii) above shall include, without limitation, upon request from Empire, based on its objectively reasonable discretion, the installation of signs in or near the Shared Parking Area and/or at or near the entrances of the buildings located on the Crocket Property, providing such notice of restrictions and penalties for their violation

2. **Maintenance and Repair**. Each Party shall maintain and repair their respective Properties in good condition and repair, including without limitation, snow and ice removal, paving, striping, lighting, and landscaping. The Parties shall in good faith coordinate their efforts in performing such maintenance and repairs required for abutting portions of the Properties. Notwithstanding the foregoing, any repairs required due to damage that is reasonably shown or

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

documented to have been caused by a Party or its invitees to the Property of the other Party shall be repaired at the cost and expense of the responsible Party.

3. **Reservation of Rights**. All right, title, and interest in and to the Shared Parking Area and the other remaining portions of the Empire Property, which may be used and enjoyed without interfering with the rights granted by this Agreement are reserved to Empire. Each Party reserves the right to use their own respective Property in any manner and for any purpose that does not interfere with the rights granted to the other Party under this Agreement.

4. **Representations and Warranties**. Each Party hereby represents, warrants and covenants to the other Party that: (a) it is and shall remain a duly organized entity in good standing with the state of Utah throughout the term of this Agreement; (b) it has the full title interest in their respective Properties and its execution of this Agreement shall be sufficient to ensure the benefits to the Properties and be binding upon all owners thereof; (c) it has the full right, power, title, and interest to grant the rights in accordance with this Agreement; (d) such grant of rights granted under this Agreement may be fully and thoroughly enjoyed and utilized by the other Party pursuant to the terms hereof; and (e) the rights granted hereunder shall not be defeased, impaired, and adversely affected by superior title.

5. **Transferability**. The rights and obligations under this Agreement are personal to the Parties and their permitted successors and assigns and shall not constitute covenants running with the land. Neither Party may assign or sublease its rights under this Agreement without the prior written consent of the other Party, which consent shall not be unreasonably withheld, conditioned, or delayed. Notwithstanding the foregoing, Crockett shall have the right to assign or transfer this Agreement and the Parking Lease to any purchaser, successor, or assignee of the Crockett Property without Empire's prior consent, provided that such purchaser, successor, or assignee assumes in writing all of Crockett's obligations under this Agreement. Any permitted assignee shall assume all obligations of the assigning Party under this Agreement.

6. **Default and Remedies.** In the event either Party defaults on its obligations, the defaulting Party shall have five (5) business days following receipt of written notice to cure such default; provided, however, that if more time is reasonably required, the Party shall not be in default so long as it commences cure within five (5) business days and completes it within thirty (30) days thereafter. Failure to cure entitles the nonbreaching Party to any remedies at law or in equity, including specific performance and recovery of reasonable attorneys' fees and costs.

To be valid, any written notice of default must be provided to Crockett at:

with a required copy (to constitute notice) to:

Attention James L. Ahlstrom

Parr Brown Gee & Loveless

101 South 200 East, Suite 700

Salt Lake City, Utah 84111.

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

7. **Term and Termination.** This Agreement, and the Parking Lease created hereby, shall commence on the Effective Date and shall remain in effect for the term stated in Section 1 above, unless earlier terminated as provided herein.

(a) **Early Termination for Cause.** Either Party may terminate this Agreement upon a material uncured default by the other Party following notice and expiration of applicable cure periods as set forth in Section 6.

(b) **Early Termination Without Cause.** After the initial term, either Party may terminate this Agreement without cause upon not less than one hundred eighty (180) days' prior written notice. provided that such termination shall not take effect prior to the expiration of the then-current renewal term.

(c) **Termination by Mutual Agreement.** The Parties may terminate this Agreement at any time by mutual written consent.

(d) **Effect of Termination.** Upon termination or expiration of this Agreement, Crockett shall promptly remove any signage installed pursuant to this Agreement, cease all use of the Shared Parking Area, and restore any affected areas to substantially their prior condition, reasonable wear and tear excepted.

8. **City Approval Contingency.** Notwithstanding anything to the contrary contained in this Agreement, the effectiveness of this Agreement and Crockett's obligation to pay the Parking Lease Fee or otherwise perform under this Agreement shall be expressly conditioned upon and shall not commence until the Shared Parking Agreement contemplated herein has been fully and finally approved by the City Council of Saratoga Springs, Utah, and any applicable appeal or reconsideration periods have expired without the filing of an appeal or other challenge (the "City Approval"). In the event City Approval is not obtained within one (1) year following the execution of this Agreement, either Party may terminate this Agreement upon written notice to the other, and neither Party shall have any further rights or obligations hereunder. The Parties acknowledge and agree that no Parking Lease Fee or other payment shall be due or payable, and no term shall commence, prior to City Approval.

9. **Indemnification**. Each Party shall indemnify, defend, and hold other Party harmless from and against any and all losses, costs, damages, liens, claims, liabilities, or expenses (including, but not limited to, reasonable attorneys' fees, court costs, and disbursements) arising from or by reason of (a) the default on the obligations of the indemnifying Party as set forth in this Agreement; (b) the gross negligence or willful misconduct of the indemnifying Party or its agents; and (c) the indemnifying Party's access to, or use of the Shared Parking Area, except for and to the extent that such is resulting from the other Party's gross negligence or willful misconduct.

10. **Insurance**. On or prior to the Effective Date and continuing until this Agreement is terminated either by mutual written agreement by both Parties, or pursuant to and in accordance with Sections 9 or 1(b) above, each Party shall obtain and maintain commercial general liability insurance with limits of not less than $1,000,000.00 per occurrence and $2,000,000.00 in aggregate. Each Party hereto shall be named as an additional insured to the policy required above.

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

11. **Miscellaneous**.

(a) Attorneys' Fees. In the event of any dispute between the Parties regarding the enforcement or effect of this Agreement, including one subject to arbitration, the non-prevailing Party in any such dispute shall pay the prevailing Party's reasonable attorneys' fees and costs incurred. In the event of arbitration, the fees of the arbitrator and the cost of the arbitration shall be paid by the non-prevailing Party. In the event that neither Party wholly prevails, the court or arbitrator, as applicable, may apportion the costs or fees as the court or arbitrator deems appropriate.

(b) Amendment. Except as otherwise expressly set forth herein, this Agreement may not be modified, amended, or terminated except in a writing signed by each Party hereto and duly recorded in the office of the county recorder or as otherwise provided under this Agreement, and any attempted amendment the contrary is void, ab initio.

(c) Time of the Essence. Both Parties agree that time is of the essence and that time specifications contained herein shall be strictly construed.

(d) Governing Law; Jury Trial Waiver. THIS AGREEMENT SHALL BE GOVERNED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF UTAH. EACH PARTY HERETO EXPRESSLY WAIVES THE JURY TRIAL RIGHT AS TO ANY AND ALL DISPUTES BETWEEN THEM RELATED TO OR ARISING OUT OF THIS AGREEMENT.

(e) Counterparts. This Agreement may be executed electronically and by the Parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original for all purposes, and all such counterparts shall together constitute but one and the same instrument. A signed copy of this Agreement delivered by email shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

(f) Recording. This Agreement may be recorded as a memorandum of lease for notice purposes only, excluding any financial or confidential terms.

(g) Authority. Each of the signatories to this Agreement represent and warrant that they have the authority to execute this Agreement and each individual signing on behalf of a Party to this Agreement states that he or she is the duly authorized representative of the signing Party and that his or her signature on this Agreement has been duly authorized by, and creates the binding and enforceable obligation of, the Party on whose behalf the representative is signing.

(h) Further Cooperation. Each of the signatories to this Agreement agree to execute such other documents and to perform such other acts as may be reasonably necessary or desirable to further the expressed intent and purpose of this Agreement.

[SIGNATURE PAGE FOLLOWS]

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the Effective Date first written above.

EMPIRE:

EMPIRE REAL ESTATE HOLDINGS LLC,

a Utah limited liability company

By: Signed by: 4D4CC6967E7B45B...

Name: Marvin Calderon

Title: President

Crockett:

CROCKETT REAL ESTATE HOLDINGS LLC,

a Utah limited liability company

By: Signed by: Dustin Wheeler 59C17B2CF9CC4B1...

Name: Dustin Wheeler

Title: Manager

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

EXHIBIT A

LEGAL DESCRIPTION OF EMPIRE PROPERTY

Parcel Serial No.: 68:054:0003

Legal Description:

LOT 3, THE HUB AT SARATOGA, PHASE 1 SUBDIVISION ACCORDING TO THE OFFICIAL PLAT THEREOF ON FILE AND OF RECORD IN THE OFFICE OF THE UTAH COUNTY RECORDER

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

EXHIBIT B

LEGAL DESCRIPTION OF CROCKETT PROPERTY

Parcel Serial No.: 68:054:0004

Legal Description:

LOT 4, THE HUB AT SARATOGA, PHASE 1 SUBDIVISION ACCORDING TO THE OFFICIAL PLAT THEREOF ON FILE AND OF RECORD IN THE OFFICE OF THE UTAH COUNTY RECORDER

Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

EXHIBIT C

SHARED PARKING AREA

[Attached}



Docusign Envelope ID: 31516997-331C-4471-897E-FD025E93E97D

MINUTES – Planning Commission

Thursday, January 15, 2026
City of Saratoga Springs City Offices
319 S. Saratoga Road, Saratoga Springs, Utah 84045

PLANNING COMMISSION MEETING MINUTES

OATH OF OFFICE

1. **Oath of Office -** for New Planning Commissioners NH Rather and Chris Roman; and Reappointment of Planning Commissioner Rachel Sprosty Burns.

CALL TO ORDER – 6:09 p.m. by Chair Rachel Sprosty Burns.

1. **Pledge of Allegiance -** led by Commissioner Miles.
2. **Roll Call** – A quorum was present.

Present:
Commission Members: Rachel Sprosty Burns, Scott A. Hill, Virginia Rae Mann, Colton Miles, NH Rather, Chris Roman, Doug Willden.
Staff: Sarah Carroll, Planning Director; Rulon Hopkins, Assistant City Attorney; AnnElise Harrison, Public Relations Manager; David Jellen, Senior Planner; Kendal Black, Planner II; Scott Petrik, Engineer; Wendy Wells, Deputy Recorder.
Others: Kyle Swiggum, Travis Olsen, Josh Moffat.

3. **Public Input -** Public input was opened by Chair Rachel Sprosty Burns. Receiving no public comment, the Public Hearing was closed by the Chair.

BUSINESS ITEMS

1. **Walmart EV Charging Station Major Site Plan Amendment, located at 136 West Crossroads Blvd. Meaghan Farrell as applicant.**

Planner II Kendal Black presented the item. This is a request for approval of a site plan amendment within the Wal-Mart parking lot, located in the Saratoga Wal-Mart Subdivision. They would like to modify some parking stalls and add the equipment for an Electric Vehicle (EV) charging station. This modification would result in only removing 6 parking stalls. They are required to have 736 parking stalls and will still have 842 stalls (excluding pickup stalls). The only other changes would be adding an enclosure to secure the electrical equipment needed to run the chargers (which is not accessible to the public), and modifying the landscaping to fit within the new parking islands and around the enclosure.

Commissioner Sprosty Burns received clarification regarding the location of the 6-foot fence that would be installed.

Applicant Kyle Swiggum of Denver, CO was in attendance to answer questions and clarified that two of the charging stations would be accessible and ADA compliant and would have a pathway from the accessible chargers to the storefront.

Commissioner Hill thanked the applicant and planner for a clean application, and wanted to know how customers would pay for EV charging.

Mr. Swiggum responded that payments would be made through the Walmart app.

Commissioner Sprosty Burns wondered if the fence would affect visibility, and how any trash pile-ups in the area would be handled.

DRAFT

Mr. Swiggum said the store manager would ensure trash was taken care of, and explained the placement of the stations was to avoid blocking any sight triangles.

Motion made by Commissioner Mann that the Planning Commission recommend approval of the requested Wal-Mart EV Charging Station Site Plan Amendment, located at 136 West Crossroads Boulevard, with the findings and conditions in the Staff Report. Seconded by Commissioner Hill.
Yes: Rachel Sprosty Burns, Scott A. Hill, Virginia Rae Mann, Colton Miles, NH Rather, Chris Roman, Doug Willden.
No: None.
Absent: None.
Motion passed 7 - 0.

2. 2429 Stagecoach Drive Site Plan, located at 2429 North Stagecoach Drive. Travis Olsen as applicant.

Planner II Kendal Black presented the item. The applicant is seeking approval of a site plan for one commercial building for The Hub at Saratoga Phase 1 development. Uses include one commercial building with five tenant spaces. There are multiple parking standards used to calculate the parking. One tenant space was calculated at 5 stalls per 1,000 square feet for a drive-thru restaurant and the rest of the tenant spaces were calculated at 4 stalls per 1,000 square feet for retail. There are 50 total required parking stalls for the 11,853-square feet of tenant spaces. There are 44 stalls provided prior to the shared parking agreement that is being proposed for 7 additional stalls. The property is 57,355 square feet (1.32 acres) in size. The proposed building is 24' tall.

Planner II Kendal Black explained the conditions to Commissioners, and gave more detail regarding Options A and B listed under condition 7 in the Staff Report.

Travis Olsen of Holladay, UT was in attendance to answer questions. He said the site plan presented was the culmination of 4-5 months of work. He explained a few of the concerns regarding the north access, and noted they wanted to be in compliance with the parking requirement.

Commissioner Hill received clarification that no specific restaurant had been selected for the restaurant site. He thought the biggest issue was parking, and felt option B looked like the best choice.

Commissioner Sprosty Burns received clarification about the area to the north of the site, and that the stacking in the drive aisles had been planned such that the cars would not end up in the parking lot.

Commissioner Rather received clarification that Stagecoach Drive was planned to be extended to the north approximately 200 feet; and the goal was to have it parallel Redwood Road, and connect on the north to Hardman Way in Lehi. He also wondered if Option B would provide more parking.

Planner II Kendal Black advised that even if the shared parking was not approved there would be enough to meet the parking requirement.

Commissioner Miles felt option B was best, and would provide additional parking and access that he thought would be beneficial.

Commissioner Sprosty Burns asked about the grade on Stagecoach Drive.

Mr. Olsen noted the grade met City Code and was about 6% leading into Empire Flooring in the main body of the parking lot, and the drive approach onto Stagecoach Drive would be about 4-5% grade.

Motion made by Commissioner Willden that the Planning Commission forward a recommendation for approval of the requested Site Plan for 2429 Stagecoach Drive located at 2429 North Stagecoach Drive, with the Findings and Conditions in the Staff Report with Condition 4 – Approved, Condition 5 – Connection Not Required, Condition 6 - Selecting Option B. Seconded by Commissioner Hill.
Yes: Rachel Sprosty Burns, Scott A. Hill, Virginia Rae Mann, Colton Miles, NH Rather, Chris Roman, Doug Willden.

DRAFT

City Council Memorandum

From: Kendal Black, Planner II
Memo Date: January 27, 2026
Meeting Date: February 3, 2026
RE: Canyon Hollow Development Agreement – Revocation or Extension

Background
The Development Agreement (DA) for the Canyon Hollow Development was entered into on March 15, 2022 and recorded with the County on March 16, 2022. The DA allowed for a rezone from Agricultural to MF-10 and included a Concept Plan as an attachment. At this time, no development has occurred and the terms of the agreement state that the property will revert to Agricultural zoning if development does not begin within two years.

Planning Overview
The project as approved in the DA meets the character of the surrounding properties, aligns with the General Plan designation for the property, and provides a much-needed interconnection between developments. The neighboring properties are zoned MF-10 or MF-14 and have been developed with townhomes. The General Plan shows the subject property and all surrounding it as Medium-Density Residential. The Concept Plan that was approved in the DA shows road and pedestrian interconnection between Summer Village Road and Alameda Way. The approved DA is consistent with the surrounding community and intent of the General Plan.

Legal Overview
Pursuant to Paragraph 8 ("Term") of the Development Agreement, the Agreement shall continue for a period of ten (10) years. However, the Agreement may terminate earlier, including if the Developer fails to proceed with the Project within a two-year period.

The Agreement was executed in March 2022. In April 2023, the Developer submitted a preliminary plat but did not complete the review process. Since that time, the City has received no additional submissions or applications related to the property or the Agreement.

The Council has the option to determine whether the Agreement should be considered terminated or whether it should remain in effect and allow the current application to be processed pursuant to its terms.

If the Council determines that the Development Agreement should be terminated, the City will need to take affirmative action to terminate the Agreement and then proceed in accordance with applicable state and local laws for a zoning downgrade as contemplated by the Agreement.

If the Council determines that the Development Agreement should remain in effect, the current application would be processed pursuant to the terms of the Agreement and applicable state and local laws.

Advantages of Continuing the Development Agreement

- Maintains project momentum and avoids further delays to anticipated housing, economic development, and public benefits
- Minimizes additional costs associated with termination, rezoning, or renegotiation
- Provides certainty to the developer to allow developer to move forward with the project
- Allows for the completion of Summer Village Road:
- It is currently a city-owned road but was dedicated as an unimproved dirt road.
- Summer Village Road is currently being used as an unapproved parking lot for overflow parking for the Summer Village project. Completing the road will eliminate that unauthorized parking.
- By finished Summer Village Road, the developer will be completing a road connection between the Summer Village and Jordan View Landing neighborhoods, allowing for better connectively between neighborhoods.

Advantages of Terminating the Development Agreement

- Protects the City's policy objectives if the project no longer aligns with adopted plans or community priorities
- Preserves long-term site potential by enabling alternative development that better fits the city's goals
- Enforces contractual standards and accountability if performance expectations are not being met
- Prevents continued project stagnation that could negatively affect surrounding neighborhoods
- May align with public sentiment if the proposed density or project scope is not favored

Recommendation

Staff recommends that the City Council review and choose from the following two options:

- Grant an extension to the DA that allows the property to remain zoned MF-10 and approves the Concept Plan in the exhibits
- Revoke the DA

Possible Motions

Option 1 – Approval of Extension

"I move that the City Council approve the requested Development Agreement Extension for the Canyon Hollow Development located at 1498 North Summer Village Drive and restart the two-year timeframe to begin development."

Option 2 – Revocation of Development Agreement
"I move that the City Council revoke the Development Agreement for the Canyon Hollow Development located at 1498 North Summer Village Drive and that the zoning revert to Agricultural."

Attachments
Approved Development Agreement for Canyon Hollow Development

WHEN RECORDED RETURN TO:

Saratoga Springs City Recorder
1307 N. Commerce Drive, Suite 200
Saratoga Springs, UT 84045

ENT 33286:2022 PG 1 of 18
ANDREA ALLEN
UTAH COUNTY RECORDER
2022 Mar 16 1:07 pm FEE 0.00 BY CH
RECORDED FOR OSARATOGA SPRINGS CITY

DEVELOPMENT AGREEMENT

THIS DEVELOPMENT AGREEMENT ("Agreement") is made and entered into on this 15th Day of March 2022, by and between the City of Saratoga Springs, Utah, a Utah municipal corporation, hereinafter referred to as "City," and Canyon Hollow Development, a Utah corporation/limited liability company; hereinafter referred to as "Developer."

RECITALS:

WHEREAS, Developer owns or has the right to purchase 1.58 acres of property located in the City of Saratoga Springs, Utah, which is more fully described in the property ownership map, vicinity map, and/or legal descriptions attached as Exhibit A ("Property"); and

WHEREAS, the Property is currently zoned Agricultural. Developer wishes to develop the project known as Canyon Hollow Summer Village, which will potentially consist of a thirteen townhome units ("Project"). Currently, the proposed Project does not meet the Agricultural zone requirements and therefore would not be allowed in the Agricultural zone. Therefore, in order to develop the Project, Developer wishes to place the Property in the MF-10 zone, as provided in Title 19 of the City Code, as amended (the "Zoning Request") and wishes to be voluntarily bound by this Agreement in order to be able to develop the Project as proposed; and

WHEREAS, City desires to enter into this Agreement to promote the health, welfare, safety, convenience, and economic prosperity of the inhabitants of the City through the establishment and administration of conditions and regulations concerning the use and development of the Property; and

WHEREAS, City desires to enter into this Agreement because the Agreement establishes planning principles, standards, and procedures to eliminate uncertainty in planning and guide the orderly development of the Property consistent with the City General Plan, the City Code, and the conditions imposed by the Planning Commission and City Council; and

WHEREAS, to assist City in its review of the Rezoning Request and to ensure development of the Project in accordance with Developer's representations to City, Developer

and City desire to enter voluntarily into this Agreement, which sets forth the process and standards whereby Developer may develop the Project; and

WHEREAS, on July 18, 2017, City adopted a comprehensive update to its general plan ("General Plan") pursuant to Utah Code Annotated §§ 10-9a-401, et seq. A portion of the General Plan establishes development policies for the Property. Such development policies are consistent with the proposed Project; and

WHEREAS, on March 11, 2021, after a duly noticed public hearing, City's Planning Commission recommended approval of Developer's Zoning Request and reviewed the conceptual project plans, attached hereto as Exhibit D ("Concept Plan"), and forwarded the application to the City Council for its consideration, subject to the findings and conditions contained in the Staff Report, and written minutes attached hereto as Exhibit B; and

WHEREAS, on March 15, 2022, the Saratoga Springs City Council ("City Council"), after holding a duly noticed public meeting and consideration of all comments from the public, neighborhood representatives, Developer, and City officials, approved Developer's Zoning Request, this Agreement, and reviewed the conceptual project plans, attached hereto as Exhibit D, subject to the findings and conditions contained in the Staff Report and written minutes attached hereto as Exhibit C; and

WHEREAS, the Concept Plan, attached as Exhibit D, among other things, identifies land uses and required road, landscaping, trail, storm drain, sewer, and water improvements; and

WHEREAS, to allow development of the Property for the benefit of Developer, to ensure City that the development of the Property will conform to applicable policies set forth in the General Plan, and to address concerns of property owners in proximity to the Property, Developer and City are each willing to abide by the terms and conditions set forth herein; and

WHEREAS, pursuant to its legislative authority under Utah Code Annotated § 10-9a-101, et seq., and after all required public notice and hearings and execution of this Agreement by Developer, the City Council, in exercising its legislative discretion, has determined that entering into this Agreement furthers the purposes of the Utah Municipal Land Use, Development, and Management Act, City's General Plan, and Title 19 of the City code (collectively, the "Public Purposes"). As a result of such determination, City has elected to process the Rezoning Request and authorize the subsequent development thereunder in accordance with the provisions of this Agreement, and City has concluded that the terms and conditions set forth in this Agreement accomplish the Public Purposes referenced above and promote the health, safety, prosperity, security, and general welfare of the residents and taxpayers of City.

AGREEMENT:

Now, therefore, in consideration of the recitals above and the terms and conditions set forth below, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, City and Developer hereby agree as follows:

1. Effective Date. This Agreement shall become effective on the date it is executed by Developer and City (the "Effective Date"). The Effective Date shall be inserted in the introductory paragraph preceding the Recitals.

2. Affected Property. The property ownership map, vicinity map, and/or legal descriptions for the property are attached as Exhibit A. In the event of a conflict between the legal description and the property ownership map, the legal description shall take precedence. No other property may be added to or removed from this Agreement except by written amendment to this Agreement executed and approved by Developer and City.

3. Zone Change, Permitted Uses, and City Regulations. Subject to the terms of this Agreement, the future development of the Property shall be subject to the provisions of the MF-10 zone. Except to the extent this Agreement is more restrictive, the Property shall comply will all "City Regulations," which is defined as "all City ordinances, regulations, specifications, and standards in effect at the time a complete preliminary plat, site plan, or development plan application is filed and all application fees are paid. City Regulations may include but are not limited to regulations regarding permitted uses, conditional uses, setbacks, frontage, height, access, required improvements, landscaping, and architectural and design requirements."

4. Reserved Legislative Powers. Nothing in this Agreement shall limit the future exercise of the police powers of City in enacting additional City Regulations, zoning, subdivision, development, growth management, platting, environmental, open space, transportation, and other land use plans, policies, ordinances, and regulations after the date of this Agreement. Notwithstanding the retained power of City to enact such legislation under its police power, such legislation shall not modify Developer's rights as set forth herein unless facts and circumstances are present that meet the compelling, countervailing public interest exception to the vested rights doctrine as set forth in *Western Land Equities, Inc. v. City of Logan*, 617 P.2d 388 (Utah 1988), or successor case law or statute. Any such proposed change affecting Developer's rights shall be of general applicability to all development activity in City. Unless City declares an emergency, Developer shall be entitled to prior written notice and an opportunity to be heard with respect to the proposed change and its applicability to the Project.

5. Required Improvements. This Agreement does not in any way convey to Developer any capacity in any City system or infrastructure or the ability to develop the Property without the need for Developer to install and dedicate to City all required improvements

necessary to service the Property, including without limitation the dedication of water rights and sources. Developer shall be responsible for paying all property taxes, including rollback taxes, prior to dedication or conveyance and prior to acceptance by City. Future development of the Property shall comply in all respects to all City Regulations with respect to the required infrastructure to service the Property, including but not limited to the installation of the City's minimum-sized infrastructure, whether or not the minimum size may have additional capacity. In addition, in consideration of granting the Zoning Request, Developer may be required to upsize certain infrastructure, as specified below. Not by way of limitation, the Developer shall be required to install and dedicate the following:

a. **Water Rights and Sources**. Developer shall convey to the City water rights and sources sufficient for the development of the Property according to City Regulations. The City may, but is not required to, sell to Developer water rights if the City has sufficient water rights and sources.

b. **Water Facilities for Development**. At the time of plat recordation or site plan approval, Developer shall be responsible for the installation and dedication to City of all onsite and offsite culinary and secondary water improvements, including but not limited to storage, distribution, treatment, and fire flow facilities sufficient for the development of the Property in accordance with City Regulations. The required improvements for each plat shall be determined by the City and may be adjusted in accordance with City Regulations and any applicable law.

c. **Sewer, Storm Drainage, and Roads**. At the time of plat recordation or site plan approval, Developer shall be responsible for the installation and dedication to City of all onsite and offsite sewer, storm drainage, and road improvements sufficient for the development of the Property in accordance with City Regulations. The required improvements for each plat or site plan shall be determined by the City Engineer at the time of plat or site plan submittal and may be adjusted in accordance with City Regulations and any applicable law. In addition to improvements required at the time of site plan and/or plat approval per City regulations, the Developer shall install the following at Developer's sole cost:

    i. Improvements along the west side of the Summer Village Road right-of-way to include asphalt, curb, gutter, sidewalk, and parkstrip landscaping constructed to meet existing infrastructure at Sunshine Drive, as well as meeting City's regulations for that of a local road cross-section;
    ii. Improvements to the east side of the Summer Village Road right-of-way to include asphalt, curb, gutter, and sidewalk along the frontage of Parcel 58:032:0022. A pioneering agreement may be entered into with the owner of this parcel regarding installation of improvements;

iii. Access easement obtained from the Jordan View Landing HOA to tie into the Alameda Way private right-of-way; and
iv. Commercial drive approach at the private ROW connection at Alameda Way.

d. **Landscaping/Open Space and Trail Improvements**. Developer shall be required to install and improve open space areas per City regulations in effect at the time of preliminary plat approval. Developer, or current owner(s) of the Property, shall maintain the open space improvements in perpetuity including repairing and replacing the vegetation and replacing all necessary infrastructure, amenities, and improvements. Such improvements shall remain in perpetuity as open space improvements meeting City regulations for the benefit of homeowners in the Project. Developer shall be required to pay all impact fees and shall not be entitled to any credits or reimbursements for the installation, improvement, and perpetual maintenance of the open space improvements.

e. **Power Lines**. As an express condition of this Agreement and the Zoning Request, Developer shall be required to bury or terminate all power lines at Developer's own expense that are located on the Property. Furthermore, as an express condition of this Agreement and the Zoning Request, Developer shall be required to apply for and receive a permit from Rocky Mountain Power and comply with all necessary requirements at Developer's sole cost. Developer shall also be required to apply with and obtain approval from any government entity for encroachment onto any public right-of-way at Developer's sole cost.

6. Final Project/Plat or Development Plan Approval. Developer shall cause final plat and final project plans and specifications (including but not limited to site and building design plans) (the "Plans") to be prepared for the Project meeting City Regulations. Such plans shall meet all architectural standards applicable to attached residential development as contained in Chapter 19.16 of the Saratoga Springs Land Development Code as it existed in the Code on March 11, 2021, or later date as mutually agreed by the parties. In determining whether the Plans meet all requirements, Developer shall provide all information required by City Regulations, as well as any information which City staff reasonably requests.

7. Standards for Approval. City Council shall approve the Plans if such Plans meet the requirements of this Agreement and City Regulations. Developer shall be required to proceed through the Preliminary Plat, Final Plat, and Site Plan approval process as specified by City Regulations to record a Final Plat with the Utah County Recorder and pay all recording fees.

8. Term. The term of this Agreement shall commence on the effective date of this Agreement and shall continue for a period of ten years. However, this Agreement may

terminate earlier: (i) when certificates of occupancy have been issued for all buildings and/or dwelling units in the Project; provided, however, that any covenant included in this Agreement which is intended to run with the land shall survive this Agreement; or (ii) if Developer fails to proceed with the Project within a period of two years. If this Agreement is terminated due to Developer's failure to proceed with the Project, then this Agreement and the zoning on the Property shall revert to the Agricultural zone. Unless otherwise agreed to by City and Developer, Developer's vested interests and rights contained in this Agreement expire at the end of the Term, or upon termination of this Agreement approved by City and Developer in writing. However, this Agreement shall continue for perpetuity for any portions of the property contained in a final plat approved by City Council and recorded on the property in the county recorder's office by Developer, unless City and Developer mutually agree otherwise in writing.

9. Successors and Assigns.

a. Change in Developer. This Agreement shall be binding on the successors and assigns of Developer. If the Property is transferred ("Transfer") to a third party ("Transferee"), Developer and the Transferee shall be jointly and severally liable for the performance of each of the obligations contained in this Agreement unless, prior to such Transfer, Developer provides to City a letter from Transferee acknowledging the existence of this Agreement and agreeing to be bound thereby. Said letter shall be signed by the Transferee, notarized, and delivered to City prior to the Transfer. Upon execution of the letter described above, the Transferee shall be substituted as Developer under this Agreement and the persons and/or entities executing this Agreement as Developer shall be released from any further obligations under this Agreement as to the transferred Property.

b. Individual Lot or Unit Sales. Notwithstanding the provisions of Subparagraph 9.a., a transfer by Developer of a lot or unit located on the Property within a City approved and recorded plat shall not be deemed a Transfer as set forth above so long as Developer's obligations with respect to such lot or dwelling unit have been completed. In such event, Developer shall be released from any further obligations under this Agreement pertaining to such lot or dwelling unit.

10. Default.

a. Events of Default. Upon the happening of one or more of the following events or conditions Developer or City, as applicable, shall be in default ("Default") under this Agreement:

i. a warranty, representation, or statement made or furnished by Developer under this Agreement is intentionally false or misleading in any material respect when it was made;

ii. a determination by City made upon the basis of substantial evidence that Developer has not complied in good faith with one or more of the material terms or conditions of this Agreement;

iii. any other event, condition, act, or omission, either by City or Developer that violates the terms of, or materially interferes with the intent and objectives of this Agreement.

b. Procedure Upon Default.

i. Upon the occurrence of Default, the non-defaulting party shall give the other party thirty days written notice specifying the nature of the alleged Default and, when appropriate, the manner in which said Default must be satisfactorily cured. In the event the Default cannot reasonably be cured within thirty days, the defaulting party shall have such additional time as may be necessary to cure such Default so long as the defaulting party takes significant action to begin curing such Default with such thirty day period and thereafter proceeds diligently to cure the Default. After proper notice and expiration of said thirty day or other appropriate cure period without cure, the non-defaulting party may declare the other party to be in breach of this Agreement and may take the action specified in Paragraph 10.c. herein. Failure or delay in giving notice of Default shall not constitute a waiver of any Default.

ii. Any Default or inability to cure a Default caused by strikes, lockouts, labor disputes, acts of God, inability to obtain labor or materials or reasonable substitutes, governmental restrictions, governmental regulations, governmental controls, enemy or hostile governmental action, civil commotion, fire or other casualty, and other similar causes beyond the reasonable control of the party obligated to perform, shall excuse the performance by such party for a period equal to the period during which any such event prevented, delayed, or stopped any required performance or effort to cure a Default.

c. Breach of Agreement. Upon Default as set forth in Subparagraphs 10.a. and 10.b. above, City may declare Developer to be in breach of this Agreement and City: (i) may withhold approval of any or all building permits or certificates of occupancy applied for in the Project, but not yet issued; and (ii) shall be under no obligation to approve or to issue any additional building permits or certificates of occupancy for any building within the Project until the breach has been corrected by Developer. In addition to such remedies, City or Developer may pursue whatever additional remedies it may have at law or in equity, including injunctive and other equitable relief.

11. Entire Agreement. This Agreement shall supersede all prior agreements with respect to the subject matter hereof, not incorporated herein, and all prior agreements and understandings are merged, integrated, and superseded by this Agreement. The following exhibits are attached to this Agreement and incorporated herein for all purposes:

Exhibit A: Property Ownership map, Vicinity Map, and/or Legal Descriptions

Exhibit B: Staff Report with Adopted Planning Commission Findings and Conditions of Approval, Report of Action (if applicable) and Planning Commission Written Minutes

Exhibit C: Staff Report with Adopted City Council Findings and Conditions of Approval, Report of Action (if applicable), and City Council Written Minutes

Exhibit D: Concept Plan

12. General Terms and Conditions.

a. Incorporation of Recitals. The Recitals contained in this Agreement, and the introductory paragraph preceding the Recitals, are hereby incorporated into this Agreement as if fully set forth herein.

b. Recording of Agreement. This Agreement shall be recorded at Developer's expense to put prospective purchasers or other interested parties on notice as to the terms and provisions hereof.

c. Severability. Each and every provision of this Agreement shall be separate, several, and distinct from each other provision hereof, and the invalidity, unenforceability, or illegality of any such provision shall not affect the enforceability of any other provision hereof.

d. Time of Performance. Time shall be of the essence with respect to the duties imposed on the parties under this Agreement. Unless a time limit is specified for the performance of such duties, each party shall commence and perform its duties in a diligent manner in order to complete the same as soon as reasonably practicable.

e. Construction of Agreement. This Agreement shall be construed so as to effectuate its public purpose of ensuring the Property is developed as set forth herein to protect health, safety, and welfare of the citizens of City.

f. State and Federal Law; Invalidity. The parties agree, intend, and understand that the obligations imposed by this Agreement are only such as are consistent with state and federal law. The parties further agree that if any provision of this Agreement becomes, in its performance, inconsistent with state or federal law or is declared invalid, this Agreement shall be deemed amended to the extent necessary to make it consistent with state or federal law, as the case may be, and the balance of the Agreement shall remain in full force and effect. If City's approval of the Project is held invalid by a court of competent jurisdiction this Agreement shall be null and void.

g. Enforcement. The parties to this Agreement recognize that City has the right to enforce its rules, policies, regulations, ordinances, and the terms of this Agreement by seeking an injunction to compel compliance. In the event Developer violates the rules, policies, regulations, or ordinances of City or violates the terms of this Agreement, City may, without declaring a Default hereunder or electing to seek an injunction, and after thirty days written notice to correct the violation (or such longer period as may be established in the discretion of City or a court of competent jurisdiction if Developer has used its reasonable best efforts to cure such violation within such thirty days and is continuing to use its reasonable best efforts to cure such violation), take such actions as shall be deemed appropriate under law until such conditions have been rectified by Developer. City shall be free from any liability arising out of the exercise of its rights under this paragraph.

h. No Waiver. Failure of a party hereto to exercise any right hereunder shall not be deemed a waiver of any such right and shall not affect the right of such party to exercise at some future time said right or any other right it may have hereunder. Unless this Agreement is amended by vote of the City Council taken with the same formality as the vote approving this Agreement, no officer, official, or agent of City has the power to amend, modify, or alter this Agreement or waive any of its conditions as to bind City by making any promise or representation not contained herein.

i. Amendment of Agreement. This Agreement shall not be modified or amended except in written form mutually agreed to and signed by each of the parties. No change shall be made to any provision of this Agreement unless this Agreement is amended pursuant to a vote of the City Council taken with the same formality as the vote approving this Agreement.

j. Attorney Fees. Should any party hereto employ an attorney for the purpose of enforcing this Agreement or any judgment based on this Agreement, for any reason or in any legal proceeding whatsoever, including insolvency, bankruptcy, arbitration, declaratory relief or other litigation, including appeals or rehearings,

and whether or not an action has actually commenced, the prevailing party shall be entitled to receive from the other party thereto reimbursement for all attorneys' fees and all costs and expenses. Should any judgment or final order be issued in any proceeding, said reimbursement shall be specified therein.

k. Notices. Any notices required or permitted to be given pursuant to this Agreement shall be deemed to have been sufficiently given or served for all purposes when presented personally, or four days after being sent by registered or certified mail, properly addressed to the parties as follows (or to such other address as the receiving party shall have notified the sending party in accordance with the provisions hereof):

To the Developer:	Canyon Hollow Development c/o Jason Scarbrough 3090 S. 2700 E. Millcreek, UT 84109
To the City:	City Manager City of Saratoga Springs 1307 N. Commerce Drive, Suite 200 Saratoga Springs, UT 84045

l. Applicable Law. This Agreement and the construction thereof, and the rights, remedies, duties, and obligations of the parties which arise hereunder are to be construed and enforced in accordance with the laws of the State of Utah.

m. Execution of Agreement. This Agreement may be executed in multiple parts as originals or by facsimile copies of executed originals; provided, however, if executed and evidence of execution is made by facsimile copy, then an original shall be provided to the other party within seven days of receipt of said facsimile copy.

n. Hold Harmless and Indemnification. Developer agrees to defend, indemnify, and hold harmless City and its elected officials, officers, agents, employees, consultants, special counsel, and representatives from liability for claims, damages, just compensation restitution, inverse condemnation, or any judicial or equitable relief which may arise from or are related to any activity connected with the Project, including approval of the Project, the direct or indirect operations of Developer or its contractors, subcontractors, agents, employees, or other persons acting on its behalf which relates to the Project, or which arises out of claims for personal injury, including health, and claims for property damage. This includes

any claims or suits related to the existence of hazardous, toxic, and/or contaminating materials on the Project and geological hazards.

i. Nothing in this Agreement shall be construed to mean that Developer shall defend, indemnify, or hold the City or its elected and appointed representatives, officers, agents and employees harmless from any claims of personal injury, death or property damage or other liabilities arising from: (i) the willful misconduct or negligent acts or omissions of the City, or its boards, officers, agents, or employees; and/or (ii) the negligent maintenance or repair by the City of improvements that have been offered for dedication and accepted by the City for maintenance

ii. City shall give written notice of any claim, demand, action or proceeding which is the subject of Developer's hold harmless agreement as soon as practicable but not later than thirty (30) days after the assertion or commencement of the claim, demand, action or proceeding. If any such notice is given, Developer shall be entitled to participate in the defense of such claim. Each party agrees to cooperate with the other in the defense of any claim and to minimize duplicative costs and expenses.

o. Relationship of Parties. The contractual relationship between City and Developer arising out of this Agreement is one of independent contractor and not agency. This Agreement does not create any third-party beneficiary rights. It is specifically understood by the parties that: (i) all rights of action and enforcement of the terms and conditions of this Agreement shall be reserved to City and Developer, (ii) the Project is a private development; (iii) City has no interest in or responsibilities for or duty to third parties concerning any improvements to the Property; and (iv) Developer shall have the full power and exclusive control of the Property subject to the obligations of Developer set forth in this Agreement.

p. Annual Review. City may review progress pursuant to this Agreement at least once every twelve (12) months to determine if Developer has complied with the terms of this Agreement. If City finds, on the basis of substantial evidence, that Developer has failed to comply with the terms hereof, City may declare Developer to be in Default as provided in Paragraph 10 herein. City's failure to review at least annually Developer's compliance with the terms and conditions of this Agreement shall not constitute or be asserted by any party as a Default under this Agreement by Developer or City.

q. Institution of Legal Action. In addition to any other rights or remedies, either party may institute legal action to cure, correct, or remedy any Default or breach, to specifically enforce any covenants or agreements set forth in this Agreement or to enjoin any threatened or attempted violation of this Agreement; or to obtain

any remedies consistent with the purpose of this Agreement. Legal actions shall be instituted in the Fourth District Court, State of Utah, or in the Federal District Court for the District of Utah. Legal action against the City shall be limited to specific performance only.

r. Title and Authority. Developer expressly warrants and represents to City that Developer (i) owns all right, title and interest in and to the Property, or (ii) has the exclusive right to acquire such interest, and (iii) that prior to the execution of this Agreement no right, title or interest in the Property has been sold, assigned or otherwise transferred to any entity or individual other than to Developer. Developer further warrants and represents that no portion of the Property is subject to any lawsuit or pending legal claim of any kind. Developer warrants that the undersigned individuals have full power and authority to enter into this Agreement on behalf of Developer. Developer understands that City is relying on these representations and warranties in executing this Agreement.

s. Headings for Convenience. All headings and captions used herein are for convenience only and are of no meaning in the interpretation or effect of this Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by City and by a duly authorized representative of Developer as of the date first written above.

Attest:

City of Saratoga Springs, a political subdivision of the State of Utah

Cindy LoPiccolo, City Recorder

By: _____
Jim Miller, Mayor

DEVELOPER, CANYON HOLLOW DEVELOPMENT LLC, a Utah corporation/limited liability company/partnership.

By: _____

Its: MANAGER

State of Utah

County of Utah

The foregoing instrument was acknowledged before me this 16 day of MARCH 2022 by JASON SCARBROUGH, of CANYON HOLLOW DEVELOPMENT, LLC, a Utah corporation/limited liability company/partnership.

Lucinda Lopiccolo
Notary Public

LUCINDA LOPICCOLO
NOTARY PUBLIC • STATE OF UTAH
COMMISSION# 711276
COMM. EXP. 04-12-2024

Exhibit "A"

Property Ownership map, Vicinity Map, and/or Legal Descriptions

Legal Description: COM S 447.22 FT & W 764.06 FT & S 83 DEG 11' 0" E 1 FT FR NE COR. SEC. 14, T5S, R1W, SLB&M.; S 83 DEG 11' 0" E 198 FT; S 0 DEG 28' 0" E 226.2 FT; S 89 DEG 28' 0" W 285 FT; N 0 DEG 28' 0" W 244.32 FT; N 85 DEG 48' 7" E 88.76 FT; N 0 DEG 2' 1" E 1.54 FT TO BEG. AREA 1.579 AC.

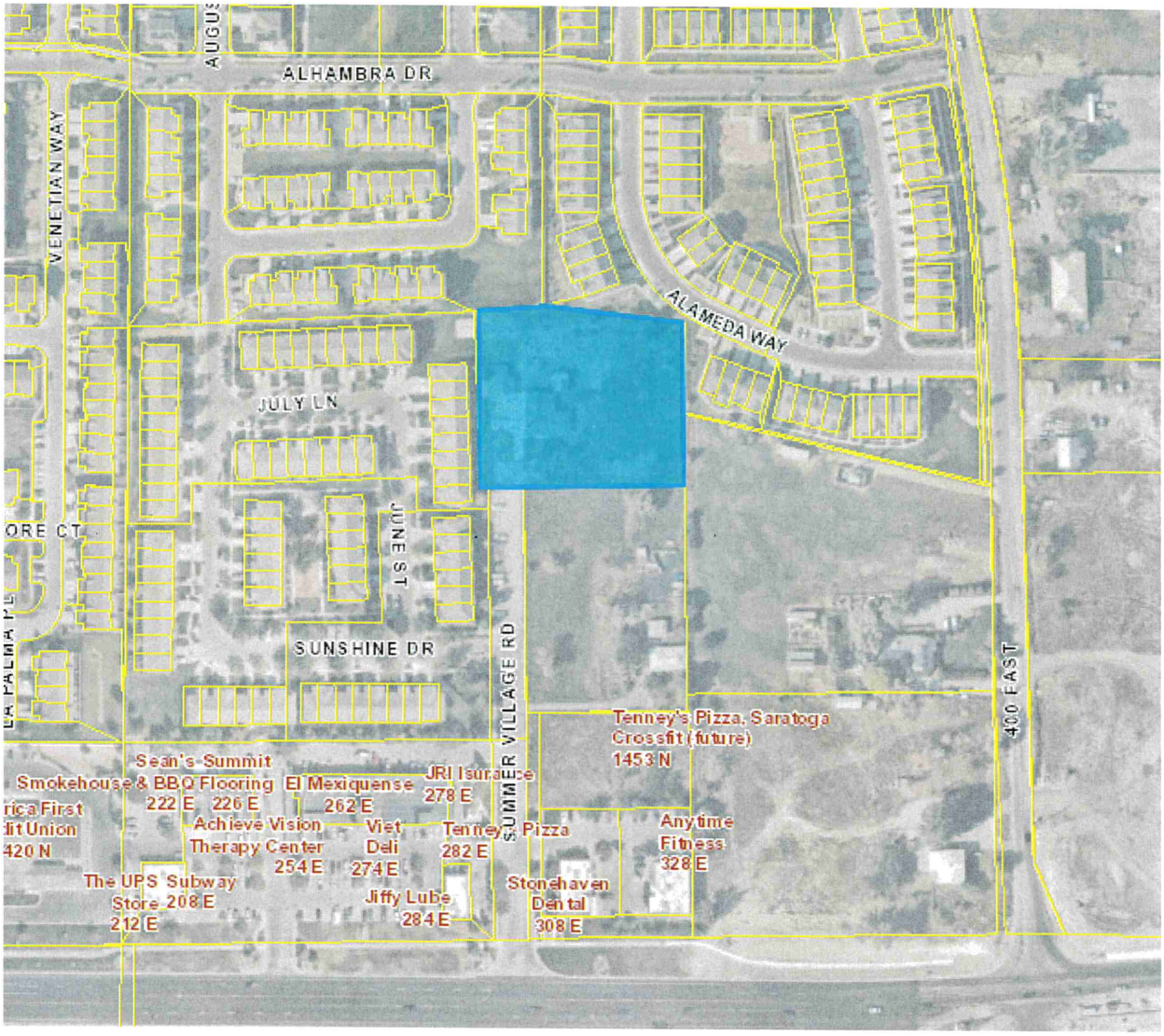


Exhibit "B"

Staff Report with Adopted Planning Commission Findings and Conditions of Approval, Report of Action (if applicable), and Written Minutes

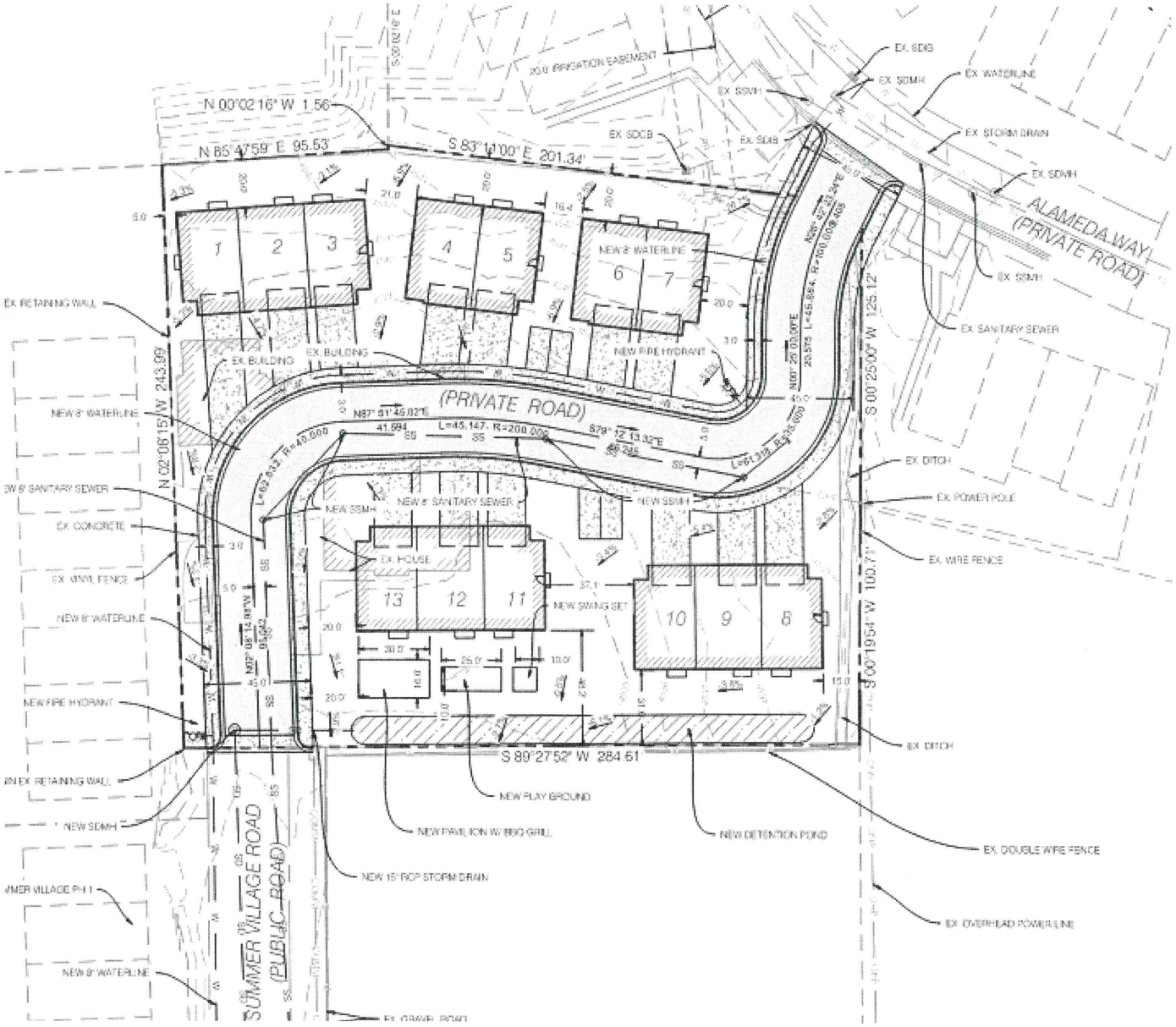
[ON FILE WITH THE CITY RECORDER]

Exhibit "C"

Staff Report with Adopted City Council Findings and Conditions of Approval, Report of Action (if applicable), City Council Written Minutes.

[ON FILE WITH THE CITY RECORDER]

Exhibit "D"
Concept Plan



City Council Staff Report

Author: Jeremy Lapin, City Engineer and Public Works Director
Subject: Drinking Water and Pressurized Irrigation Systems
Date: February 3, 2026
Type of Item: Resolution
Description: Masterplan Update

A. Topic:

This item is for the adoption of updates to the City's Drinking Water and Pressurized Irrigation Master Plan.

B. Background:

The City's Drinking Water and Pressurized Irrigation Master Plan was last updated and adopted by the Saratoga Springs City Council in 2017. In 2025, The City hired Hansen, Allen, and Luce to review, evaluate, and update the City's Drinking Water and Pressurized Irrigation Master Plan

C. Analysis:

The proposed updates will ensure the Master plan reflects the best available population growth projections, ensure consistency with growth patterns that have occurred in the City since the last update, to ensure consistency with the Drinking Water and Pressurized Irrigation Impact Fee Facilities Plans and Analysis, and to review and revise as necessary the costs for capital facility improvements.

D. Fiscal Impact:

There are no direct or indirect costs associated with the adoption of the updates to the City's Drinking Water and Pressurized Irrigation Master Plans.

E. Recommendation

I recommend that the City Council approve the resolution adopting the updated Drinking Water and Pressurized Irrigation Master Plans for the City of Saratoga Springs

SARATOGA SPRINGS

Life's just better here

DRINKING WATER MASTER PLAN AND CAPITAL FACILITY PLAN

(HAL Project No.: 360.63.100)

January 2026

HANSEN ALLEN & LUCE inc
ENGINEERS

CITY OF SARATOGA SPRINGS

DRINKING WATER MASTER PLAN

(HAL Project No.: 360.63.100)

Kai Krieger, P.E.
Project Manager

HANSEN ALLEN & LUCE inc
ENGINEERS

January 2026

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GLOSSARY OF TECHNICAL TERMS

Average Daily Flow: The average yearly demand volume expressed in a flow rate.

Average Yearly Demand: The volume of water used during an entire year.

Build-out: When the development density reaches maximum allowed by planned development.

Demand: Required water flow rate or volume.

Distribution System: The network of pipes, valves and appurtenances contained within a water system.

Drinking Water: Water of sufficient quality for human consumption. Also referred to as Culinary or Potable water.

Equivalent Residential Connection: A measure used in comparing water demand from non-residential connections to residential connections.

Fire Flow Requirements: The rate of water delivery required to extinguish a particular fire. Usually it is given in rate of flow (gallons per minute) for a specific period of time (hours).

Head: A measure of the pressure in a distribution system that is exerted by the water. Head represents the height of the free water surface (or pressure reduction valve setting) above any point in the hydraulic system.

Headloss: The amount of pressure lost in a distribution system under dynamic conditions due to the wall roughness and other physical characteristics of pipes in the system.

Peak Day: The day(s) of the year in which a maximum amount of water is used in a 24-hour period.

Peak Day Demand: The average daily flow required to meet the needs imposed on a water system during the peak day(s) of the year.

Peak Instantaneous Demand: The flow required to meet the needs imposed on a water system during maximum flow on a peak day.

Pressure Reducing Valve (PRV): A valve used to reduce excessive pressure in a water distribution system.

Pressure Zone: The area within a distribution system in which water pressure is maintained within specified limits.

Service Area: Typically the area within the boundaries of the entity or entities that participate in the ownership, planning, design, construction, operation and maintenance of a water system.

Static Pressure: The pressure exerted by water within the pipelines and other water system appurtenances when water is not flowing through the system, i.e., during periods of little or no water use.

Storage Tank: A facility used to store, contain and protect drinking water until it is needed by the customers of a water system. Also referred to as a Storage Reservoir.

Transmission Pipeline: A pipeline that transfers water from a source to a reservoir or from a reservoir to a distribution system.

Water Conservation: Planned management of water to prevent waste.

ABBREVIATIONS AND UNITS

ac	acre [area]
ac-ft	acre-foot (1 ac-ft = 325,851 gal) [volume]
CIP	Capital Improvement Plan
CFP	Capital Facilities Plan
CUWCD	Central Utah Water Conservancy District
CWP	Central Water Project
DIP	Ductile Iron Pipe
DBP	disinfection byproduct
DW	Drinking Water
EPA	U.S. Environmental Protection Agency
EPANET	EPA hydraulic network modeling software
ERC	Equivalent Residential Connection
ERU	Equivalent Residential Unit
ft	foot [length]
ft/s	feet per second [velocity]
gal	gallon [volume]
gpd	gallons per day [flow rate]
gpm	gallons per minute [flow rate]
HAL	Hansen, Allen & Luce, Inc.
hp	horsepower [power]
hr	hour [time]
IFA	Impact Fee Analysis
IFC	International Fire Code
IFFP	Impact Fee Facilities Plan
in.	inch [length]
kW	kilowatt [power]
kWh	kilowatt hour [energy]
MG	million gallons [volume]
MGD	million gallons per day [flow rate]
mg/L	milligram per liter [concentration]
mi	mile [length]
PI	Pressurized Irrigation
PRV	Pressure reducing valve
psi	pounds per square inch [pressure]
s	second [time]
SCADA	Supervisory Control And Data Acquisition
yr	year[time]

CHAPTER 1 INTRODUCTION

PURPOSE AND SCOPE

The purpose of this master plan is to provide direction to the City of Saratoga Springs (the City) regarding decisions that will be made now and in the future to provide an adequate drinking water (DW) system for its customers at the most reasonable cost. Recommendations are based on demand data, growth projections, standards of the Utah Division of Drinking Water (DDW), city zoning, known planned developments, and standard engineering practices. The planning horizon for the master plan is build-out, or approximately 2060. Buildout facility sizing and maps have been included in Appendix A.

The master plan is a study of the City's DW system and customer water use. The following topics are addressed herein: growth projections, source requirements, storage requirements, and distribution system requirements. Based on this study, needed capital improvements have been identified and conceptual-level cost estimates for the recommended improvements have been provided. The master plan is supported by several supplemental reports provided in the appendices including the Zions Public Finance Growth Projections Memorandum, 40 Year Water Rights Plan, Water Conservation Plan, Risk and Resilience Assessment, Emergency Response Plan, and Unidirectional Flushing Plan. Some of these reports include confidential information and are not intended to be provided to the public.

The results of the study are limited by the accuracy of growth projections, data provided by the City, and other assumptions used in preparing the study. It is expected that the City will review and update this master plan every 5–10 years as new information about development, system performance, or water use becomes available. This master plan supersedes all previous master plans for the City's DW system.

BACKGROUND

Saratoga Springs is a city located in northern Utah County, Utah. Since the early 2000s, Saratoga Springs has consistently been among the fastest-growing cities in Utah, and among the fastest-growing in the country. The City has grown rapidly in more recent years, with an estimated population of 59,812 in 2023 (Zions Public Finance, Inc., 2024.) By 2040, the population is expected to reach 128,689 (Zions Public Finance, Inc., 2024.) Figure 1-1 shows the historical and forecasted population from 1998 to 2040.

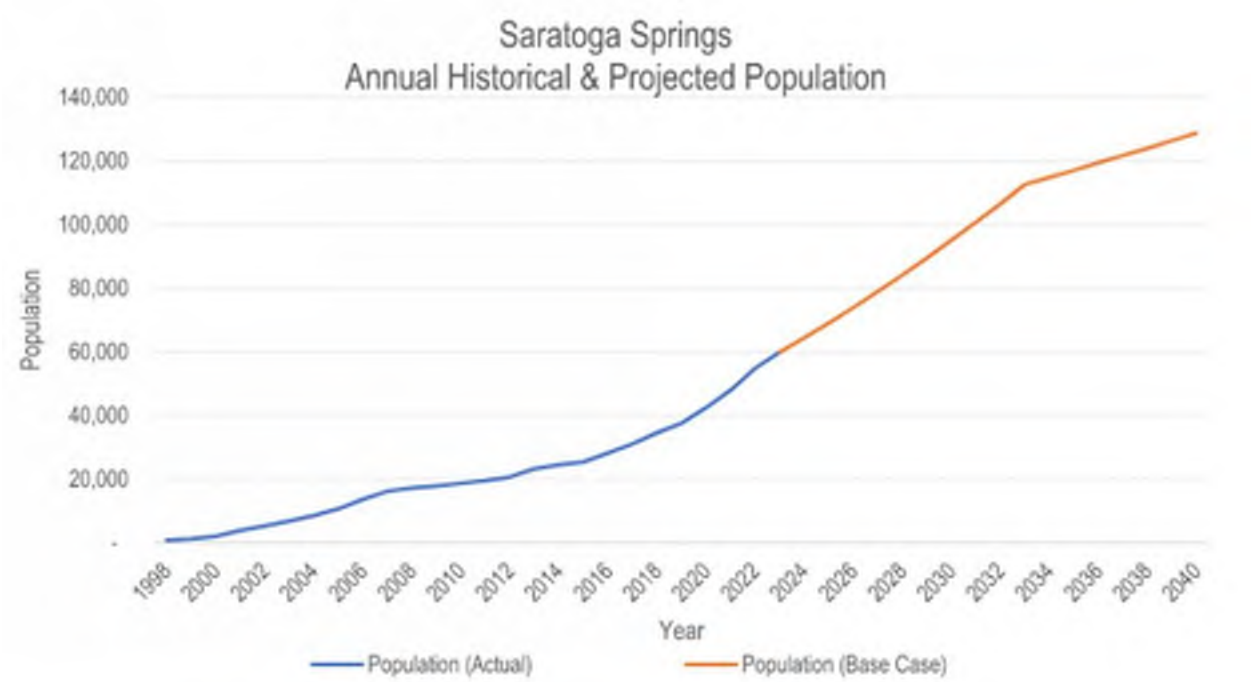


Figure 1-1: Saratoga Springs Annual Historic and Projected Population
(Zions Public Finance, Inc., 2024)

The existing DW system includes four wells, three Central Utah Water Conservancy District (CUWCD) wholesale connections, ten storage tanks, seven pump stations, four pressure zones, and about 238 mi of pipe with diameters of 8 to 30 in. Figure 1-2 shows a map of the existing DW system. The City recognizes that its continued growth necessitates proactively planning additional drinking water facilities to maintain the current level of service for indoor water use.

The City also maintains a pressurized irrigation (PI) system for outdoor use. While drinking water is occasionally used to supply the PI system under current conditions, both systems are being master planned to operate independently and to have adequate capacity for their own indoor or outdoor purposes. The PI system is addressed in a separate master plan.

In January 2025, the City prepared an Impact Fee Facilities Plan (IFFP), and Impact Fee Analysis (IFA) for its DW and PI systems. This master plan will provide the bases for updating those studies and extends the planning period to approximately 2060 for the purpose of providing a basic full system layout design to guide new development.

MASTER PLANNING METHODOLOGY

The City's DW system consists of water sources, storage facilities, distribution pipes, pump stations, valves, and other components. Design and operation of the individual components must be coordinated so that they operate efficiently under a range of demands and conditions. The system must be capable of responding to daily and seasonal variations in demand while simultaneously providing sufficient capacity for firefighting and other emergency situations.

Identifying present and future water system needs is essential in the management and planning of a water system. For this study, existing water demands were calculated from SCADA data and metered customer water use. Demands were predicted using the City's current level of service,

current zoning and densities provided by the City, and growth rates prepared by Zions Public Finance, Inc.

This report follows the DDW requirements of Rule R309-510 ("Facility Design and Operation: Minimum Sizing Requirements") and Rule R309-105 ("Administration: General Responsibilities of Public Water Systems") of the Utah Administrative Code. The report addresses sources, storage, distribution, minimum pressures, hydraulic modeling, capital improvements, funding, and other topics pertinent to Saratoga Springs' drinking water system.

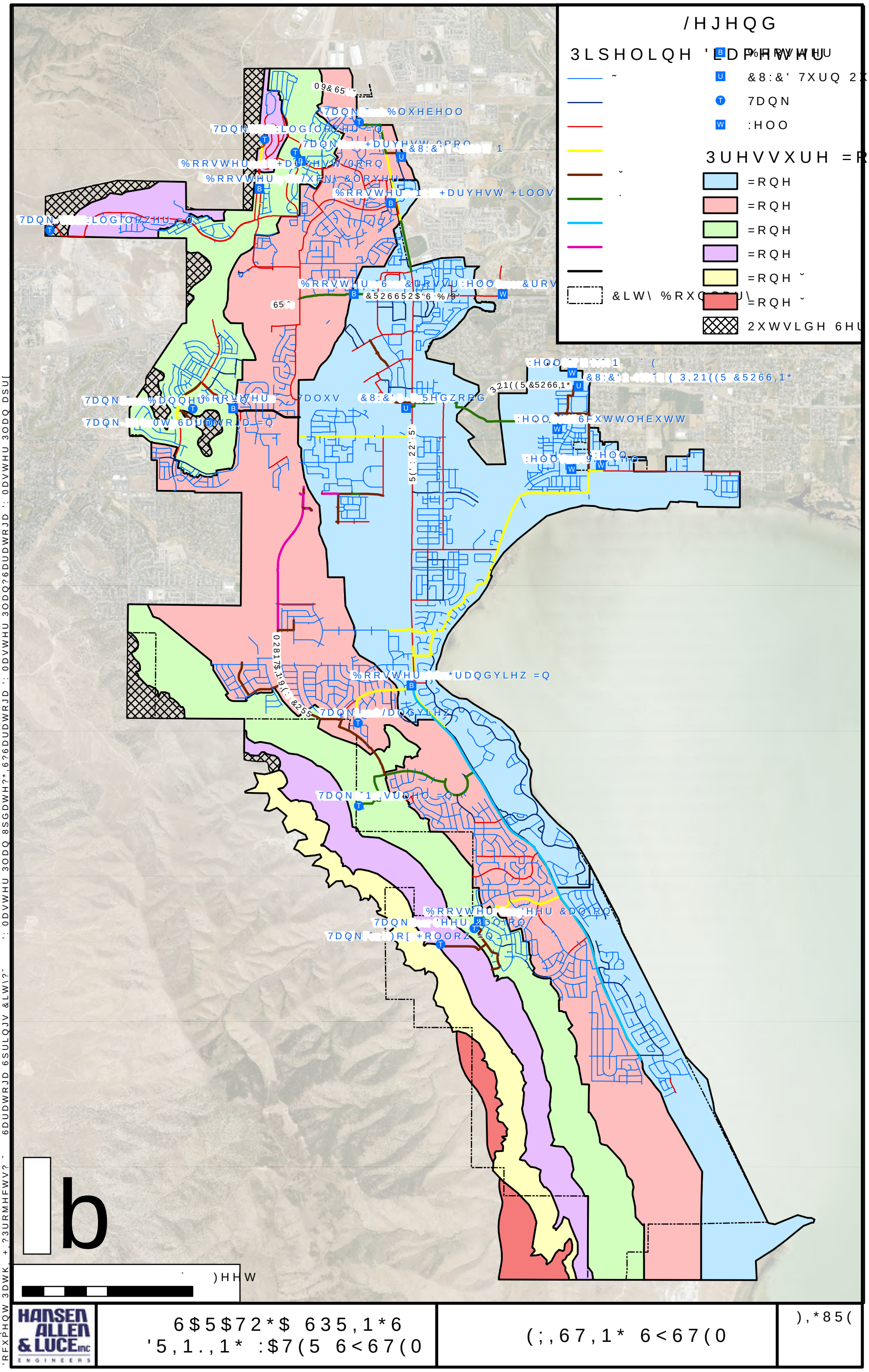
Computer models of the City's DW system were prepared to simulate the performance of facilities under existing and build-out conditions. System improvement recommendations were prepared from the analysis and are presented in this report.

DESIGN AND PERFORMANCE CRITERIA

Summaries of the key design criteria and demand requirements for the drinking water system are included in Table 1-1. The design criteria were used in evaluating system performance and in recommending future improvements. Criteria development is described in later chapters.

Table 1-1: System Design Criteria

	Criteria	Existing Requirements	Estimated Build-out Requirements
Equivalent Residential Connections	Based on data received from the City for the end of 2024	16,084	66,720
Source			
Peak Day Demand	Section R309-510-7/IFFP	4,189 gpm	34,750 gpm
Average Yearly Demand	Section R309-510-7/IFFP	4,825 ac-ft	20,016 ac-ft
Storage			
Equalization	Section R309-501-8/IFFP	4.29 MG	17.81 MG
Emergency	City preference/IFFP	1.61 MG	6.67 MG
Fire Suppression	IFC/Fire Marshall/IFFP	2.18 MG	5.62 MG
Total		8.08 MG	30.11 MG
Distribution			
Peak Instantaneous	1.5 X Peak Day Demand	7,205 gpm	59,770 gpm
Minimum Peak Day Fire Flow	IFC/Fire Marshall/IFFP	1,500 gpm @ 20psi	1,500 gpm @ 20psi
Max. Operating Pressure	City Standards	100 psi	100 psi
Min. Pressure: Peak Day	Section R309-510-9/IFFP	40 psi	40 psi
Peak Instantaneous	Section R309-510-9/IFFP	30 psi	30 psi


/HJHQG
3LSHOLQH 'LDPHWHU
&8:&' 7XUQ 2XW
7DQN
:HOO
3UHVVXUH =RQH
=RQH
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=RQH
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=RQH
2XWVLGH 6HUYLFH
&LW\ %RXQGDU\
09&65
7DQN %OXHEHOO
7DQN :LOGRZHU =Q
%RRVWHU +DUYHVW 0RRQ
%RRVWHU 7XEH &OXVWHU
%RRVWHU +DUYHVW +LOOV
7DQN :LOGRZHU =Q
%RRVWHU 6 &URVVU:HOO &URV
&526652$'6 %/9'
65
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&8:&' 3,21((5 &5266,1*
7DQN %DQQHU %RRVWHU
7DOXV &8:&' 5HGZRRG
7DQN 0W 6DUDWRJD =Q
:HOO 6FXWWOHEXWW
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HANSEN ALLEN & LUCE inc
ENGINEERS

CHAPTER 2 SYSTEM GROWTH

EXISTING CONNECTIONS

Indoor water demands are expressed in terms of equivalent residential connections (ERCs), which for planning purposes are the same as equivalent residential units (ERUs). The use of ERCs is a standard engineering practice to describe the entire system in a common unit of measurement. One ERC is equal to the average demand of an average residential connection. Non-residential demands are converted to ERCs for planning purposes. For example, a commercial building requiring six times as much water as a typical residential connection is assigned an ERC of 6. The system demand then can be described with a single ERC count.

HAL analyzed the City's water use data from 2024 along with discussion with the City and determined that the existing system serves 16,084 ERCs. An extended-period hydraulic model was updated with current water use and pipe information to represent existing conditions. A breakdown of the existing ERCs by pressure zone is shown in Table 2-1.

Table 2-1
Existing ERCs

Zone	ERCs
1N	6,888
1S*	633
2N	3,078
2S	3,201
3N	1,898
3S	359
4N	27
Total	**16,084**

*Zone 1 South is served through PRVs from Zone 2 South.

FUTURE CONNECTIONS

At maximum development based on current zoning, also known as build-out, 66,720 ERCs are expected. This is an increase of 51,142 ERCs beyond the existing ERCs. The estimate is based on current land use classifications outlined in Section 19.04 of the City code and on plans for known planned communities which HAL has acquired. Table 2-2 lists the ERC densities for each land use classification used in this study.

The City's existing water-rights portfolio may support up to 62,173 ERCs. In contrast, current zoning would require capacity for roughly 66,720 ERCs. To accommodate this level of development, the City must either obtain additional water rights or adjust allowable densities to align with available supply. A detailed evaluation of long-term water-rights capacity is provided in the 40 Year Water Rights Plan included in Appendix G.

Table 2-2
ERC Densities by Land Use Type

Description	Land Use Class Code	ERC Density (ERC/Acre)
Business Park	BP	3
Community Commercial	CC	4
Developed Open Space	DOS	0
General Industrial	GI	3
Heavy Commercial	HC	4
Institutional	IC	3
High Density Residential	MF-14, MF-18	16
Low Density Residential	R1-40, R1-20, R1-10, R1-9	3
Medium Density Residential	R2-8, R3-6, MF-10	8
Mixed Waterfront	MW	14
Neighborhood Commercial	NC	3
Natural Open Space	NOS	4
Office Warehouse	OW	0
Regional Commercial	RC	3
Rural Residential	RR	14

The City is projected to reach build-out by about 2060. Although actual build-out conditions may be different if land use classifications and density change significantly, the basic full system layout plan developed by this study will help guide the construction of a responsible system. A breakdown of the build-out ERCs by pressure zone is shown in Table 2-3.

Table 2-3
Build-Out ERCs

Zone	ERCs
1N	20,558
1S*	4,943
2N	9,094
2S	13,642
3N	4,369
3S	7,522
4N	1,027
4S	2,929
5	1,970
6	667
Total	**66,720**

*Zone 1 South is served by PRVs from Zone 2 South.

The majority of the anticipated growth is associated with large undeveloped parcels that are zoned for high-density planned communities. After identifying expected locations and densities of new development areas, HAL prepared an extended-period hydraulic model and engineering calculations to analyze build-out conditions.

GROWTH PROJECTIONS

The development of impact fees requires growth projections over the next ten years. In addition to impact fee projects this report will also highlight anticipated projects 10-20 years out in the "Capital Facilities Plan" section of this report. Growth projections for this time frame were developed based on population projections provided by Zions Public Finance, Inc., land use classifications, and discussions with the City. The population and ERC projections are summarized in Table 2-4.

Table 2-4
Growth Projections

Year	Residential Units Added (ERCs)	Non-Residential Floor Area Added[1] (ft^2)	Commercial Units Added[1] (ERCs)	Total ERCs	Annual Growth Rate
2023[2]				15,578	
2024	1,065	253,217	186	16,829	8.0%
2025	1,100	263,255	193	17,936	6.6%
2026	1,135	273,293	200	19,078	6.4%
2027	1,169	283,332	208	20,255	6.2%
2028	1,204	293,370	215	21,466	6.0%
2029	1,238	303,409	222	22,711	5.8%
2030	1,273	313,447	230	23,992	5.6%
2031	1,307	323,485	237	25,306	5.5%
2032	1,342	333,524	245	26,656	5.3%
2033	1,377	343,562	252	28,040	5.2%
2034	592	116,002	85	28,465	1.5%
2035	597	117,318	86	29,063	2.1%
2036	601	118,598	87	29,665	2.1%
2037	606	119,843	88	30,272	2.0%
2038	610	121,056	89	30,883	2.0%
2039	614	122,239	90	31,498	2.0%
2040	618	123,392	90	32,116	2.0%
2041[3]				32,747	2.0%
2042[3]				33,391	2.0%
2043[3]				34,047	2.0%
2044[3]				34,716	2.0%

1. Commercial ERCs were calculated using the conversion of 55 ERCs/75,000 ft^2 of non-residential floor area per the City's General Plan.
2. 2023 is considered the start or baseline for these growth projections, prior population data was considered but not included in this table.
3. Zions Public Finance Inc. population projections end in 2040. HAL assumed an annual growth rate of 2.0% for the years of 2041 through 2044 based on the growth projections for 2037 through 2040.

CHAPTER 3 WATER SOURCES

DW requirements in this study are based on ERCs. As specific development plans are proposed, HAL recommends that source requirements are calculated based on the proposed densities rather than the land use classifications used in this master plan. HAL estimated existing and build-out ERCs from the City's current land use and zoning plan.

EXISTING WATER SOURCES

Four wells and three Central Utah Water Conservancy District (CUWCD) wholesale connections currently supply the City's DW system (Table 3-1). The drinking water wells have a total production capacity of 4,870 gpm or 3,571 ac-ft per year and the CUWCD connections have a total production capacity of 9,000 gpm or 2,380 ac-ft per year. Because only limited additional drinking water quality groundwater is expected to be available for future growth, the City supplements its supply by purchasing water from CUWCD at three locations.

Table 3-1
Existing DW Sources

Source	Peak Day Source Capacity (gpm)	Peak Day Source Capacity (MGD)	Annual Source Capacity[1] (ac-ft)
Well No. 2 – Vessel	1,020	1.5	748
Well No. 3 – 145 North	1,750	2.5	1,283
Well No. 4 – Crossroads	1,000	1.4	733
Well No. 6 - Scuttlebutt	1,100	1.6	807
CUWCD 1 – 2400 North	3,000	4.3	2,380[2]
CUWCD 2 – 2300 Pioneer	3,000	4.3	
CUWCD 3 – Redwood	3,000	4.3	
Total Source	**13,870**	**20.0**	**5,951**

1. Annual well capacity assumes about half of the year-round flow at the given flow rate which matches the current drinking water right diversion capacity. Actual volume may be limited by demand or hydrologic constraints.
2. The annual source capacity of the CUWCD connections is determined by the agreement between the City and CUWCD. This value represents the annual purchase volume for the 2024-2025 fiscal year (July 1, 2024-June 30-2025).

A summary of the water rights that are owned by Saratoga Springs is included in the 40 Year Water Rights Plan in Appendix G. The existing water right capacity is 10,016 acre feet. It is anticipated that the City will not acquire a significant volume of additional groundwater rights and that the additional future source capacity will come from CUWCD.

PUMP STATIONS

Pump stations allow the City to supply water to zones that do not have their own sources. The rated capacity of a pump station is the total flow of the pump station with the largest pump out of service. The City has seven pump stations whose service zones, number of pumps, and rated capacity are summarized in Table 3-2.

Table 3-2
Existing DW Pump Stations

Name	From Zone	To Zone	Pumps	Rated Capacity (gpm)
BS 1 – Grandview	1N	2S	2 x 2,500 gpm	2,500
BS 5N – Harvest Hills	1N	2N	2 x 1,000 gpm	1,000
BS 5S – Crossroads Blvd	1N	2N	3 x 1,000 gpm	2,000
BS 3 – Harvest Moon	2N	3N	2 x 500 gpm	500
BS 2 – Deer Creek	2S	3S	2 x 4,350 gpm	4,350
BS 9 – Talus Ridge	2N	3N	3 x 600 gpm	1,200
BS 4 – Lucky Clover	3N	4N	3 x 400 gpm	800
Total				**12,350**

EXISTING WATER SOURCE REQUIREMENTS

According to DDW standards (Section R309-510-7), water sources must be able to meet the expected water demand for two conditions. First, sources must be able to provide an adequate supply of water for the peak day demand (flow requirement). Second, sources must also be able to produce one year's supply of water, or the average yearly demand (volume requirement).

Existing Peak Day Demand

Peak day demand is the water demand on the day of the year with the highest water use. It is used to determine required source capacity under existing and future conditions. Since the PI system provides water for outdoor use, only indoor demand is allocated to the drinking water system.

Peak day demand for the DW system was calculated based on the City's level of service of 375 gallons per day/ERC (HAL 2025a). Under existing conditions, the City serves 16,084 ERCs, per the City's level of service, the peak day demand is 4,189 gpm. Table 3-3 shows the existing peak day demands for each pressure zone.

Table 3-3
Existing Source Requirements

Zone	ERCs	Peak Day Demand (gpm)	Pump In (gpm)	Pump Out (gpm)	Total (gpm)	Existing Supply[1] (gpm)	Remaining Capacity (gpm)
1N	6,888	1,794	0	2,230	4,024	13,870[S]	+9,846
1S[2]	633	165	165[2]	0	165	165	0
2N	3,078	802	1,303	501	1,296	3,000[P]	+1,697
2S	3,201	834	927	258[2]	1,092	2,500[P]	+1,408

Zone	ERCs	Peak Day Demand (gpm)	Pump In (gpm)	Pump Out (gpm)	Total (gpm)	Existing Supply[1] (gpm)	Remaining Capacity (gpm)
3N	1,898	494	501	7	501	1,700[P]	+1,199
3S	359	93	93	0	93	4,350[P]	+4,257
4N	27	7	7	0	7	800[P]	+793
Total	**16,084**	**4,189**	**2,997**	**2,997**	**N/A**	**N/A**	**+19,200**

1. S= Source Water, P= Pump Station Capacity.
2. Zone 1 South is currently serviced through PRVs from Zone 2 South.

Existing Average Yearly Demand

Average yearly demand is the volume of water used during an entire year, and is used to ensure the sources can supply enough volume to meet demand under existing and future conditions. Since the PI system provides water for outdoor use, only indoor demand is allocated to the drinking water system. Average yearly demand was determined based on ERCs and the City's level of service of 0.3 ac-ft/ERC (HAL 2025a). Based on the existing ERCs, the average yearly DW demand is 4,825 ac-ft (Table 3-5).

FUTURE WATER SOURCE REQUIREMENTS

As with existing water source requirements, future water source requirements were evaluated on two criteria (Section R309-510-7). First, sufficient water source capacity is needed to meet peak day flow. Second, the water sources must also be capable of supplying the average yearly demand.

Future Peak Day Demand

Following the methodology described for existing conditions and estimating 66,720 ERCs at build-out, the peak day source requirement is projected to be 17,375 gpm based on the City's level of service. A breakdown of the future peak day demand by pressure zone is shown in Table 3-4.

Table 3-4
Build-Out Source Requirements

Zone	ERCs	Pump In (gpm)	Pump Out (gpm)	Demand (gpm)	Total (gpm)	Existing Supply[1] (gpm)	Remaining Capacity (gpm)
1N	20,558	0	10,734	5,354	16,734	13,870[S]	**-2,218**
1S	4,943	1,287	0	1,287	1,287	1,287[2]	**0**
2N	9,094	3,773	1,4805	2,368	3,773	3,000[P]	**-773**
2S	13,642	6,961	3,408	3,552	6,961	2,500	**-4,461**
3N	4,369	1,405	267	1,138	1,405	1,700[P]	+295
3S	7,522	3,408	1,450	1,959	3,408	4,350[P]	+942
4N	1,027	267	0	267	267	800[P]	+533
4S	2,929	1,450	687	763	1,450	0[P]	**-1,450**
5S	1,970	687	174	513	687	0[P]	**-687**
6	667	174	0	174	174	0[P]	**-174**
Total	**66,720**	**18,125**	**18,125**	**17,375**	**N/A**	**N/A**	**-9,280**

1. S = Source Water, P = Pump Station Capacity
2. Zone 1 South is served by PRVs from Zone 2 South.

Overall, under build-out conditions there is a projected source capacity deficit of 3,505 gpm based on the capacity of the existing sources and the planned capacity of the CUWCD wholesale connections. It is assumed that the future required source capacity will be in Zone 1. Pump station capacity will be required to deliver source to each upper pressure zone.

Future Average Yearly Demand

Following the methodology described for existing conditions and estimating 66,720 ERCs at build-out, the average yearly source requirement is projected to be 20,016 ac-ft (Table 3-6).

WATER SOURCE RECOMMENDATIONS

Tables 3-5 and 3-6 compare peak day and average yearly demands with the existing water source capacities. Existing water sources are adequate to meet peak day and annual requirements for the existing DW system.

Table 3-5
Existing Drinking Water Demand and Source Capacity

Parameter	Peak Day (gpm)	Average Yearly (ac-ft)
Demand	4,189	4,825
Capacity	14,870	6,684
Surplus (+) or Deficit (−)	+10,681	+1,859

Table 3-6
Future Drinking Water Demand and Source Capacity

Parameter	Peak Day (gpm)	Average Yearly (ac-ft)
Demand	17,375	20,016
Existing Capacity	14,870	6,684
Surplus (+) or Deficit (−)	**-2,505**	**-13,332**

Current water sources are inadequate for build-out conditions. It is recommended that the City maintain its current wells and current contract with CUWCD. Additional sources totaling 2,505 gpm and 13,332 ac-ft per year are recommended. Planned future water sources include Well 7, Well 8, and an additional CUWCD connection on Pony Express Parkway. Through the current contract with CUWCD, the City is obligated to purchase 380 ac-ft of water each year through 2044, at which time, the City will purchase a total of 10,000 ac-ft per year from CUWCD. The annual purchase schedule from the CUWCD contract is included in Appendix E.

Including these additional water sources does not provide enough water to meet the future annual source requirement. Potential additional DW sources include:

- New wells in the northern portion of the City.
- Improvements to existing wells.

In addition to the future sources, the City will also need additional pumping capacity to supply water to the upper pressure zones.

CHAPTER 4 WATER STORAGE

EXISTING WATER STORAGE

The City's existing drinking water system includes seven storage tanks with a total capacity of 16.1 million gallons (MG) in Zones 1, 2, 3, and 4. The facilities are underground reinforced concrete tanks. Each active pressure zone has at least one tank to provide storage. All tanks were constructed in the last 25 years and are in good condition. No storage facilities exist in Zones 4 South, 5 or 6. Table 4-1 presents a listing of the names and attributes for the storage tanks.

Table 4-1
Existing Storage Tanks

Name	Zone	Diameter (ft)	Volume (MG)	Outlet Level	Fire Suppression Level	Overflow/ Equalization Level
Tank 1 Landview	1N	99	0.75	4750.4 (0 feet)	4757.2 (6.8 feet)	4763.4 (20.0 feet)
Tank 2 Deer Canyon	2S	82	1.0	4892.0 (0 feet)	4900.9 (8.9 feet)	4919.5 (27.5 feet)
Tank 3 Harvest Moon	2N	154	2.0	4905.0 (0 feet)	4908.2 (3.2 feet)	4921.0 (16.0 feet)
Tank 4 Wildflower Zone 3	3N	120	1.2	5066.7 (0 feet)	5074.1 (7.4 feet)	5082.5 (15.8 feet)
Tank 5 Bluebell	1N	152	3.0	4740.4 (0 feet)	4745.0 (4.6 feet)	4763.4 (23.0 feet)
Tank 6N Israel Canyon Zone 2	2S	152	3.0	4898.0 (0 feet)	4902.8 (4.8 feet)	4919.5 (21.5 feet)
Tank 7 Fox Hollow Zone 3	3S	124	2.0	5060.2 (0 feet)	5067.2 (7.0 feet)	5082.0 (21.8 feet)
Tank 9 Banner Drive	2N	105	1.0	4905.0 (0 feet)	4,909.7 (4.7 feet)	4921.0 (16 feet)
Tank 10 Mt. Saratoga Zone 3	3N	100	1.4	5033.0 (0 feet)	5041.2 (8.2 feet)	5055.0 (22 feet)
Tank 11 Wildflower Zone 4	4N	87	0.75	5227.0 (0 feet)	5234.6 (7.6 feet)	5245.0 (18 feet)

EXISTING WATER STORAGE REQUIREMENTS

According to DDW standards outlined in Section R309-510-8, storage tanks must be able to provide: 1) equalization storage volume to make up the difference between source and demand; 2) fire suppression storage to supply water for firefighting; and 3) emergency storage, if deemed necessary. Each of the requirements is addressed below. Since the PI system provides water for outdoor use, only the indoor storage requirement applies to the DW storage tanks.

Equalization Storage

The City's current level of service requires 267 gallons/ERC of equalization storage for indoor use (HAL 2025a). With 16,084 ERCs under existing conditions, the City needs 4.29 MG of equalization storage for the DW system. Table 4-3 lists the existing storage requirements by pressure zone.

Fire Suppression Storage

Fire suppression storage is required for water systems that provide water for firefighting (Subsection R309-510-8(3)). The local fire authority determines the need for fire suppression storage. The City's Fire Chief provided fire flow requirements for each zone according to the International Fire Code (IFC), building size, flow rates, and fire duration. Jess Campbell is the City's Fire Chief, the contact information for the City Fire department is as follows:

Phone: 801-766-6505

Address: (North Fire Station)
995 West 1200 North
Saratoga Springs, UT 84045

(South Fire Station)
2021 S Ring Road
Saratoga Springs, UT 84045

Storage was allocated to each tank according to simulations of fire flow during peak day conditions, considering that fire flow may be supplied by storage in higher zones. Fire suppression storage was determined with the following assumptions:

- Tank 1—The recommended fire flow for Zone 1 is 4,000 gpm for 4 hours, or 0.96 MG. Tank 1 supplies about 1,000 gpm, or 0.24 MG. The remainder was assigned to Tanks 5 and 3.
- Tank 5—The recommended fire flow for Zone 1 is 4,000 gpm for 4 hours, or 0.96 MG. Tank 5 supplies about 2,000 gpm, or 0.48 MG. The remainder was assigned to Tanks 1 and 3.
- Tank 3—The recommended fire flow for Zone 2 North is 3,000 gpm for 3 hours, or 0.54 MG. Tank 3 supplies 0.30 MG. The remainder was assigned to Tank 9. Tank 3 may also supply fire flow to Zone 1.
- Tank 9—The recommended fire flow for Zone 2 North is 3,000 gpm for 3 hours, or 0.54 MG. Tank 9 supplies 0.24 MG. The remainder was assigned to Tank 3.
- Tank 2—The recommended fire flow for Zone 2 South is 4,000 gpm for 4 hours, or 0.96 MG. Tank 2 supplies about 850 gpm, or 0.20 MG. The remainder was assigned to Tanks 6 and 7.
- Tank 6N—The recommended fire flow for Zone 2 South is 4,000 gpm for 4 hours, or 0.96 MG. Tank 6N supplies about 2,000 gpm, or 0.48 MG. The remainder was assigned to Tanks 2 and 7.

- Tank 4—The recommended fire flow for Zone 3 North is 2,000 gpm for 2 hours, or 0.48 MG. Half of the requirement (1,000 gpm or 0.24 MG) was assigned to Tank 4. Tank 4 may also supply fire flow to Zone 2 North.
- Tank 10—The recommended fire flow for Zone 3 North is 2,000 gpm for 2 hours, or 0.48 MG. Half of the requirement (1,000 gpm or 0.24 MG) was assigned to Tank 10. Tank 10 may also supply fire flow to Zone 2 North or Zone 1.
- Tank 7—The recommended fire flow for Zone 3 South is 2,000 gpm for 2 hours, or 0.48 MG. Half of the requirement (1,000 gpm or 0.24 MG) was assigned to Tank 7. Tank 7 may also supply fire flow to Zone 2 South.
- Tank 11—The recommended fire flow for Zone 4 North is 2,000 gpm for 2 hours, or 0.24 MG. This entire requirement was assigned to Tank 11. Tank 11 may also supply fire flow to Zone 3 North.

Table 4-3 summarizes the fire suppression storage assumed in each storage tank. Table 4-3 lists the fire suppression storage by pressure zone.

Table 4-2
Existing Fire Suppression Storage by Tank

Tank	Zone	Fire Suppression Storage (MG)
1	1N	0.24
5	1N	0.48
3	2N	0.30
9	2N	0.24
2	2S	0.20
6N	2S	0.48
4	3N	0.24
10	3N	0.24
7	3S	0.24
11	4N	0.24
Total		**2.90**

Emergency Storage

While there are no specific DDW requirements for emergency storage (Subsection R309-510-8(4)), most water systems maintain emergency storage to mitigate risks, provide system reliability, and protect public health and welfare. Emergency storage may be used in case of pipeline failures, equipment failures, power outages, source contamination, and natural disasters.

The City's current level of service requires 100 gallons/ERC. With 16,084 ERCs under existing conditions, the City needs 1.61 MG of emergency storage for the DW system. Table 4-3 lists the existing storage requirements by pressure zone.

Table 4-3
Existing Drinking Water Storage Requirements

Zone	ERCs	Required Storage (MG)				Existing Storage (MG)	Remaining Capacity (MG)
		Demand Equalization	Fire Suppression	Emergency	Total		
1N	6,888	1.84	0.72[1]	0.69	3.25	3.75	+0.50
1S	633	0.17	0[1]	0.06	0.23	0.00	**-0.23**
2N	3,078	0.82	0.54	0.31	1.67	3.00	+1.33
2S	3,201	0.85	0.68	0.32	1.85	4.00	+2.15
3N	1,898	0.51	0.48	0.19	1.18	2.60	+1.42
3S	359	0.10	0.24	0.04	0.37	2.00	+1.63
4N	27	0.01	0.24	0.00	0.24	0.75	+0.50
Total	**16,084**	**4.29**	**2.90**	**1.61**	**8.80**	**16.10**	**+7.30**

1. Zone 1 South fire suppression storage is provided by storage in Zone 2 South.

FUTURE WATER STORAGE REQUIREMENTS

Table 4-4 presents the future drinking water storage requirements by pressure zone. These are then discussed below. A total of 28.15 MG of storage is needed at build-out.

Table 4-4
Future Drinking Water Storage Requirements

Zone	ERCs	Required Storage (MG)				Existing Storage (MG)	Remaining Capacity (MG)
		Equalization	Fire Suppression	Emergency	Total		
1N	20,558	5.49	0.96	2.06	8.50	3.75	**-4.75**
1S	4,943	1.32	0[1]	0.49	1.81	0.00	**-1.81**
2N	9,094	2.43	0.30	0.91	3.64	3.00	**-0.64**
2S	13,642	3,64	0.96	1.36	5.97	4.00	**-1.97**
3N	4,369	1.17	0.24	0.44	1.84	2.60	+0.76
3S	7,522	2.01	0.24	0.75	3.00	2.00	**-1.00**
4N	1,027	0.27	0.24	0.10	0.62	0.75	+0.13
4S	2,929	0.78	0.24	0.29	1.31	0.00	**-1.31**
5	1,970	0.53	0.24	0.20	0.96	0.00	**-0.96**
6	667	0.18	0.24	0.07	0.48	0.00	**-0.48**
Total	**66,720**	**17.81**	**3.66**	**6.67**	**28.15**	**16.10**	**-12.05**

Equalization Storage

Following the methodology described for existing conditions, and calculating 66,720 ERCs at build-out, the projected indoor equalization storage requirement is 17.81 MG.

Fire Suppression Storage

Firefighting capacity is assumed to remain similar to current conditions and requirements, with new capacity required for future Zones 4S, 5, and 6.

Emergency Storage

Following the methodology described for existing conditions, and calculating 66,720 ERCs at build-out, the projected emergency storage requirement is 6.67 MG.

WATER STORAGE RECOMMENDATIONS

The City will need about **28 MG** of drinking water storage at build-out, of which about **16 MG** has already been constructed. An additional **12 MG** is recommended for build-out. Potential locations for future drinking water storage tanks are shown on Figure 6-1. The cost for constructing new storage facilities varies based on the costs of land, labor, and construction materials. However, $2 per gallon of storage has been found to be a reasonable, conservative estimate. In addition, it is recommended that 20% of the estimated cost should be added for contingency and 15% for engineering. Therefore, the total cost that should be planned for providing adequate build-out storage is $32,500,000.

To improve water system efficiency, it is recommended that at least one tank is constructed for each pressure zone. The City currently enforces this recommendation for ongoing development. This practice should be continued with future development towards buildout

CHAPTER 5 WATER DISTRIBUTION

EXISTING DISTRIBUTION SYSTEM DEMANDS

The City's DW distribution system consists of all pipelines, valves, fittings, and other appurtenances used to convey water from sources and storage tanks to water users. The existing water system contains approximately 238 mi of pipe with diameters of 8 in. to 30 in. Figure 5-1 presents a summary of pipe length by diameter. Four pressure zones comprise the current system, where Zone 1 is the lowest in elevation and Zone 4 is the highest.

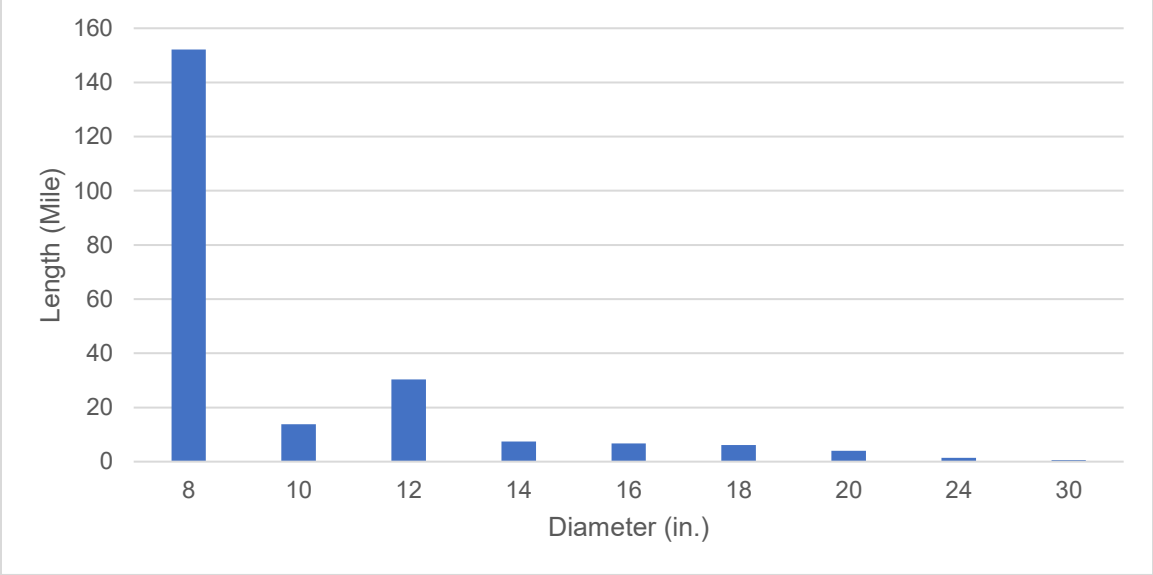


Figure 5-1: Summary of Pipe Length by Diameter

Existing Peak Day Conditions

A minimum pressure of 40 psi must be maintained during peak day demand (Subsection R309-105-9(2)). The City's level of service is 375 gallons per day/ERC (or 0.26 gpm/ERC); therefore, the total peak day demand for the City is 4,189 gpm under existing conditions.

Existing Peak Instantaneous Conditions

A minimum pressure of 30 psi must be maintained during peak instantaneous demand (Subsection R309-105-9(2)). Peak instantaneous demand was defined based on the diurnal curve for the indoor water demand of Saratoga Springs. The highest peaking factor present on the peak day diurnal curve was 1.72; therefore, the existing peak instantaneous demand was calculated as 4,189 x 1.72 = 7,205 gpm.

Existing Peak Day plus Fire Flow Conditions

A minimum pressure of 20 psi must be maintained while delivering fire flow to a particular location within the system and supplying the peak day demand to the entire system (Subsection R309-105-9(2)). For modeling analysis, a minimum fire flow of 1,500 gpm was selected for all fire hydrants in the system. Higher flows were modeled for select locations as directed by the Saratoga Springs Fire Chief.

Identifying every pipe which is not capable of supplying the required fire flow is beyond the scope of this study. The computer analysis should not replace physical fire flow tests at fire hydrants as the primary method of determining fire flow capacity.

FUTURE WATER DISTRIBUTION SYSTEM DEMANDS

Future Peak Day Conditions

Future build-out peak day demand was calculated based on the same level of service as defined for existing conditions. The future ERCs are 66,720; therefore, the future peak day demand was calculated as 34,750 gpm.

Future Peak Instantaneous Conditions

Peak instantaneous demands were calculated in a similar manner to existing conditions. The future peak instantaneous demand was calculated as 59,770 gpm.

Future Peak Day plus Fire Flow Conditions

A minimum pressure of 20 psi must be maintained while delivering fire flow to a particular location within the system and supplying the peak day demand to the entire system (Subsection R309-105-9(2)). For modeling analysis, a fire flow of 1,500 gpm was selected for all fire hydrants in the system. Additional analyses were performed for larger buildings as required by the Fire Marshal. Hydraulic modeling indicated that the future system can meet the future fire flow requirements.

HYDRAULIC MODEL

Development

A computer model of the City's DW system was developed to analyze the performance of the existing and future distribution system and to prepare solutions for existing facilities not meeting the distribution system requirements. The model was developed with InfoWater Pro, published by AutoDesk. InfoWater Pro simulates the hydraulic behavior of pipe networks. Sources, pipes, tanks, valves, controls, and other data used to develop the model were obtained from GIS data of the city's drinking water system and other updated information supplied by the City.

HAL developed models for two phases of drinking water system development. The first phase was a model representing the existing system (existing model). This model was used to calibrate the model and identify deficiencies in the existing system. Calibration was performed using fire hydrant tests and by comparing model results to the City's SCADA output.

The second phase was a model representing future conditions and the improvements necessary to accommodate growth (future model).

Model Components

The two basic elements of the model are pipes and nodes. A pipe is described by its inside diameter, length, minor friction loss factors, and a roughness value associated with friction head losses. A pipe can contain elbows, bends, valves, pumps, and other operational elements. Nodes are the endpoints of a pipe and can be categorized as junction nodes or boundary nodes. A

junction node is a point where two or more pipes meet, where a change in pipe diameter occurs, or where flow is added (source) or removed (demand). A boundary node is a point where the hydraulic grade is known (a reservoir, tank, or PRV). Other components include tanks, reservoirs, pumps, valves, and controls.

The model is not an exact replica of the actual water system. Pipeline locations used in the model are approximate and not every pipeline may be included in the model, although efforts were made to make the model as complete and accurate as possible. Moreover, it is not necessary to include all of the distribution system pipes in the model to accurately simulate its performance.

Pipe Network

The pipe network layout originated from GIS data provided by the City. HAL verified its accuracy by reviewing a model prepared for the previous master plan. Elevation information was obtained recent LiDAR digital elevation models. Within the Saratoga Springs distribution system, pipes with a diameter of 12 inches or larger are generally concrete-lined ductile iron. Smaller 8-inch and 10-inch pipes are generally PVC. Darcy-Weisbach roughness coefficients for pipes in this model ranged from 0.4 – 0.6 millifeet, which is typical for these pipe materials in EPANET (Rossman 2000, 31).

Water Demands

Water demands were allocated in the model based on billed usage and billing addresses. Demand was determined for each billing address, and the addresses were geocoded in order to link the demands to a physical location. The geocoded demands were then assigned to the closest model node. With the proper spatial distribution, demands were scaled to reach the peak day demand determined in Chapter 3. For the future model, future demands were estimated according to current land use and densities. Future demands were assigned to new nodes representing the expected location of new development in each pressure zone.

The pattern of water demand over a 24 hr period is called the diurnal curve or daily demand curve. HAL developed a diurnal curve for peak day conditions using SCADA reports with a peaking factor of 1.72 (the ratio of peak instantaneous demands to peak day average demand) in the previous master plan. The diurnal curve was input into the model to simulate changes in the water system throughout the day. This diurnal curve has proven to be an accurate representation of demand changes since the previous master plan.

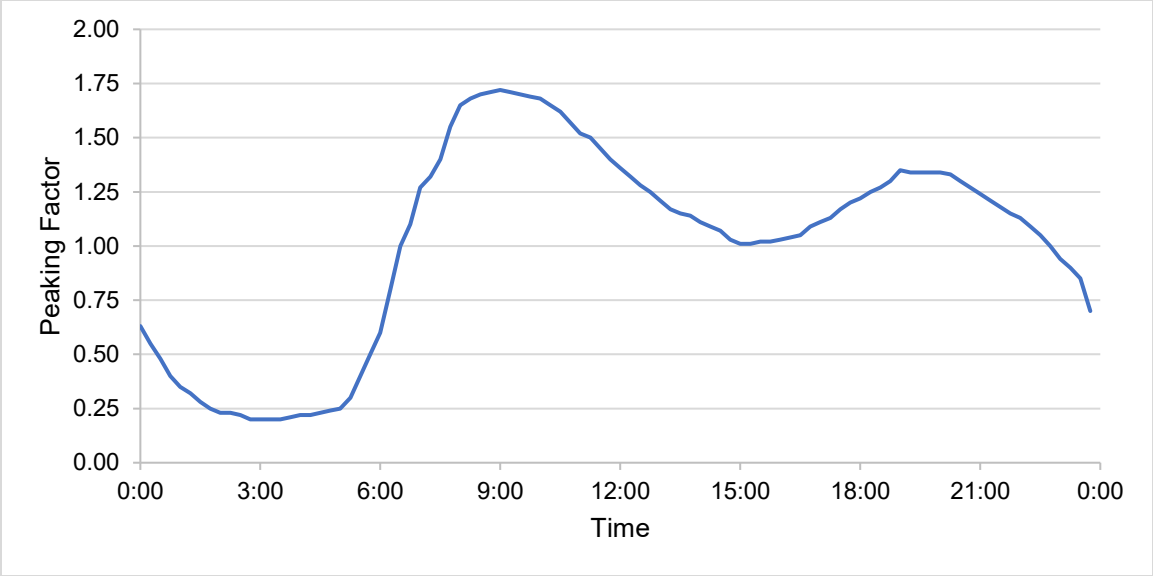


Figure 5-2: Saratoga Springs Drinking Water Diurnal Curve

In summary, the spatial distribution of demands followed geocoded water use data; the flow and volume of demands followed DDW standards described in Chapter 3; and the temporal pattern of demand followed a diurnal curve developed from SCADA data.

Water Sources and Storage Tanks

The sources of water in the existing model are the wells and, wholesale connections from CUWCD. A well is represented by a reservoir and pump. A CUWCD connection is represented by a reservoir and a flow control valve. Storage tank location, height, diameter, and volume are represented in the model. The extended-period model predicts water levels in the tanks as they fill from sources and as they empty to meet demand in the system.

ANALYSIS METHODOLOGY

HAL used extended-period and steady-state modeling to analyze the performance of the water system with current and projected future demands. An extended-period model represents system behavior over a period of time: tanks filling and draining, pumps turning on or off, pressures fluctuating, and flows shifting in response to demands. A steady-state model represents a snapshot of system performance. The peak day extended period model was used to set system conditions for the steady-state model, calibrate zone to zone water transfers, analyze system controls and the performance of the system over time, and to analyze system recommendations for performance over time. The steady-state model was used for analyzing the peak day plus fire flow conditions.

Two operating conditions were analyzed with the extended period model: peak day conditions and peak instantaneous conditions. Peak day plus fire flow conditions were analyzed using a static model. Each of these conditions is a worst-case situation so the performance of the distribution system may be analyzed for compliance with DDW standards and City preferences.

WATER DISTRIBUTION SYSTEM RECOMMENDATIONS

The model output primarily consists of the computed pressures at nodes and flow rates through pipes. The model also provides additional data related to pipeline flow velocity and head loss to help evaluate the performance of the various components of the distribution system. Recommendations for distribution improvement projects were based on the modeling, as outlined above, and guidance provided by City personnel.

There are two locations at the top of Zone 2 South that are recommended to be moved to Zone 3 South to provide increased pressure. These locations are shown in Figure 5-3. Moving these locations over to Zone 3 South will be dependent on the construction of Zone 3 South facilities.

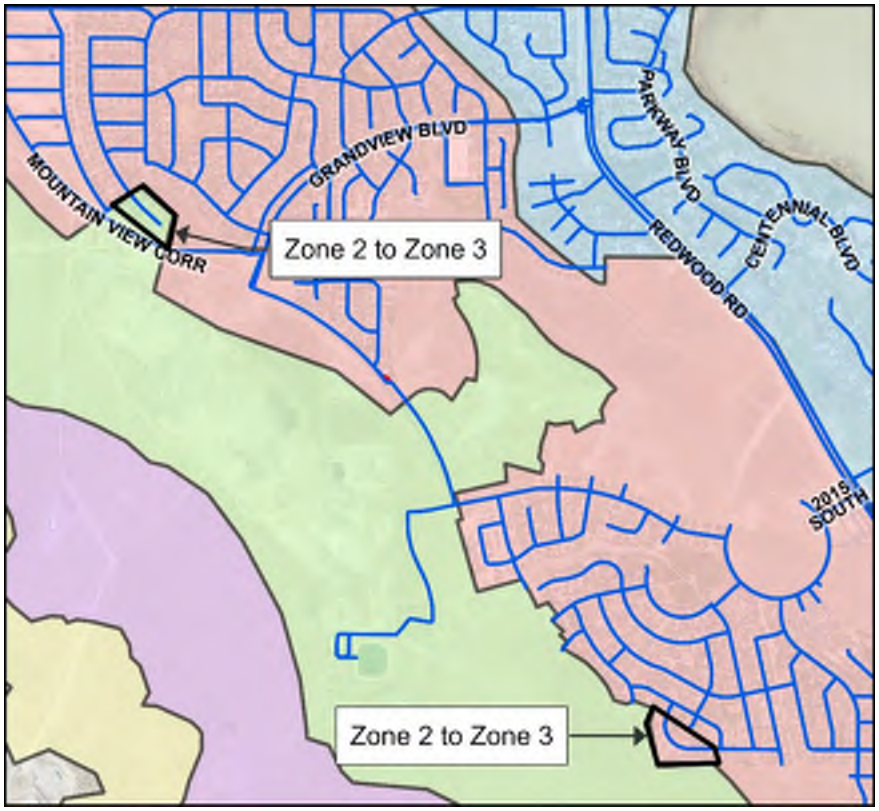


Figure 5-3: Location of Proposed Zone Changes

The future distribution projects are associated with providing transmission capacity to and from future storage tanks and sources. It is expected that these projects may change somewhat as compared to current projections depending on the availability of land and other considerations that may affect the final locations of the proposed storage tanks.

Future additional transmission pipelines are expected to be installed as the City expands. The locations and lengths of these transmission pipelines depend on the final location of future streets and configuration of developments. It is recommended that each development be reviewed to ensure adequate system capacity. It is also recommended that developments be checked for dead end pipelines of more than 600 feet to safeguard water quality and provide supply redundancy.

ZONE 1 TRANSIENT ANALYSIS

The City requested an analysis of the drinking water infrastructure within Zone 1 for resilience against power outage events which could create surge pressures in the City's drinking water system. HAL analyzed the City's drinking water Zone 1 system for surge impacts following a sudden loss of powers to all pumps in Zone 1. The study concluded that the drinking water distribution system is adequately protected from the impacts of transient surge waves. This conclusion applies to the existing system and the projected future expansion of Zone 1 in a buildout condition.

CHAPTER 6 CAPITAL FACILITY PLAN

GENERAL

The purpose of this section is to identify the drinking water facilities that are required, for the 20-year planning period, to meet the demands placed on the system by future development. Proposed facility capacities were sized to adequately meet the 20-year growth projections and were compared to current master planned facilities. Buildout facility sizing and location may be found in Appendix A. A detailed design analysis will need to be provided before construction of the facilities to ensure that the location and sizing is appropriate for the actual growth that has taken place since this capital facility plan (CFP) was developed. Specific projects with costs are presented at the end of this chapter.

METHODOLOGY

The future water demands were added incrementally by year to the facility analysis. At the year a facility reaches capacity, a solution was identified that will accommodate growth for the 20-year planning period. A hydraulic model was developed for the purpose of assessing the system operation and capacity with future demands added to the system. The model was used to identify problem areas in the system and to identify the most efficient way to make improvements to transmission pipelines, sources, pumps, and storage facilities.

Currently the DW System supplements the PI System as needed during peak demands in portions of the City. For both the Drinking Water System CFP and the Pressurized Irrigation System CFP, each system was analyzed with no sharing of capacity for future projections. It was assumed for all calculations that no PI System facilities are being supplemented by DW System capacity.

The future system was evaluated in the same manner as the existing system, by modeling (1) Peak Instantaneous Demands and (2) Peak Day Demands plus fire flow conditions.

FUTURE WATER SOURCE

Future growth projections indicate that the City will need to acquire additional drinking water sources. The CFP analysis utilized a source capacity level of service of 375 gpd/ERC for indoor water use. It was assumed that CUWCD will provide for mechanical redundancy in their own system at 375 gpd/ERC.

FUTURE WATER STORAGE

The proposed level of service requires that the water system have 267 gallons per ERC for equalization storage, plus 100 gallons per ERC of emergency storage, along with appropriate fire suppression storage requirements. The 20-year growth projection requires five additional tanks to supply storage to future pressure zones. It is anticipated that pressure reducing valves (PRVs) will be placed between zones to convey fire flows from upper zones to lower zones during fire events. The following tanks are recommended to meet future requirements:

- Zone 1 North – Tank 8, 5.0 MG
- Zone 2 South – Tank 20, 1.0 MG
- Zone 3 South – Tank 13, 1.0 MG
- Zone 3 South – Tank 14, 1.1 MG
- Zone 4 South – Tank 15, 0.9 MG

FUTURE ZONE PUMPING

Future zone pumping requirements were evaluated to determine pump station needs to meet future peak day demands. All zones requiring pump stations were evaluated using the source capacity level of service of 375 gpd/ERC for indoor water use with the largest pump out of service. The growth model required new pump stations to provide water to meet future demands. Zone pumping must provide source capacity to the pump station from the lower zone and provide the needed source to the zone above. The required pump stations to meet future demands are shown below:

- Zone 3 South – Booster 12, 500 gpm
- Zone 3 South – Booster 6, 900 gpm
- Zone 4 South – Booster 14, 500 gpm

FUTURE TRANSMISSION PIPING

Future transmission lines need to be constructed to allow for future growth in the undeveloped areas of the City. The model was used to determine the most efficient way to keep waterline velocities and pressures within the criteria limits with added future demands. The majority of the waterline projects are required to connect sources to storage tanks and to the existing and future areas of the system. These transmission lines are described below:

- Zone 1 North - Well 7 Pipeline, 500 LF of 10-inch pipeline across Pioneer Crossing
- Zone 1 North – 1,400 LF of 16-inch pipeline along Pony Express Parkway
- Zone 1 North – 5,300 LF of 24-inch pipeline along Pony Express Parkway
- Zone 2 North – 3,500 LF of 16-inch pipeline along Mountain View Corridor
- Zone 2 South – 6,000 LF of 16-inch pipeline to Tank 20
- Zone 3 North – 300 LF of 12-inch pipeline across SR73
- Zone 3 South – 5,200 LF of 16-inch pipeline to Tank 13
- Zone 3 South – 2,500 LF of 16-inch pipeline to Tank 14
- Zone 4 South – 1,500 LF of 12-inch pipeline to Tank 15

FUTURE WATER RIGHTS

It is not anticipated that the City will acquire significantly more water rights specifically for its drinking water system due the general lack of available groundwater in the area. Those coming into the system will need to bring their own water rights, purchase from a developer who has water right credits, or purchase water rights from CUWCD.

The existing demand at the proposed level of service is 4,825 acre-feet, while the existing supply is 6,684 acre-feet (see Table 3-10). The excess capacity of 1,859 acre-feet (owned by developers as credit), together with additional water contracted through CUWCD, is sufficient to cover the additional demands imposed by growth over the next ten years. For development beyond ten years it is anticipated that the majority of water rights will come from CUWCD.

MASTER PLANNING

Throughout the master planning process, the three main components of the City's water system (source, storage, and distribution) were analyzed to determine the system's ability to meet existing demands and also the anticipated future demands. This section of the report will specifically detail

development over the next 20 years. Each of the system deficiencies identified in the master planning process and described previously in this report were presented in an alternatives workshop with City staff. Possible solutions were discussed for each of the identified system deficiencies as well as possible solutions for maintenance and other system needs not identified in the system analysis. After the workshop, HAL studied the feasibility of the solution alternatives and developed conceptual costs.

One important method of paying for system improvements is through impact fees. Impact fees are collected from new development and should only be used to pay for system improvements related to new development. For this reason it is important to identify which projects are related to resolving existing deficiencies, and which projects are related to providing anticipated future capacity for new development.

PRECISION OF COST ESTIMATES

When considering cost estimates, there are several levels or degrees of precision, depending on the purpose of the estimate and the percentage of detailed design that has been completed. The following levels of precision are typical:

Type of Estimate	Precision
Master Planning	-50% to +100%
Preliminary Design	-30% to +30%
Final Design or Bid	-10% to +10%

For example, at the master planning level (or conceptual or feasibility design level), if a project is estimated to cost $1,000,000, then the precision or reliability of the cost estimate would typically be expected to range between approximately $500,000 and $2,000,000. While this may seem very imprecise, the purpose of master planning is to develop general sizing, location, cost, and scheduling information on a number of individual projects that may be designed and constructed over a period of many years. Master planning also typically includes the selection of common design criteria to help ensure uniformity and compatibility among future individual projects. Details such as the exact capacity of individual projects, the level of redundancy, the location of facilities, the alignment and depth of pipelines, the extent of utility conflicts, the cost of land and easements, the construction methodology, the types of equipment and material to be used, the time of construction, interest and inflation rates, permitting requirements, etc., are typically developed during the more detailed levels of design.

At the preliminary or 10% design level, some of the aforementioned information will have been developed. Major design decisions such as the size of facilities, selection of facility sites, pipeline alignments and depths, and the selection of the types of equipment and material to be used during construction will typically have been made. At this level of design the precision of the cost estimate for a $1,000,000 project would typically be expected to range between approximately $700,000 and $1,300,000.

After the project has been completely designed, and is ready to bid, all design plans and technical specifications will have been completed and nearly all of the significant details about the project should be known. At this level of design, the precision of the cost estimate for the same $1,000,000 project would typically be expected to range between approximately $900,000 and $1,100,000.

SYSTEM IMPROVEMENT PROJECTS

As discussed in previous chapters, source, storage and distribution system capacity expansion will be needed to meet the demands of future growth. Figure 6-1 includes recommended projects over the period from existing conditions through 20 years into the future. Cost estimates have been prepared for the recommended projects and are included in Appendix D.

Unit costs for the construction cost estimates are based on conceptual level engineering. Sources used to estimate construction costs include:

1. “Means Heavy Construction Cost Data, 2025"
2. Price quotes from equipment suppliers
3. Recent construction bids for similar work

All costs are presented in 2025 dollars. Recent price and economic trends indicate that future costs are difficult to predict with certainty. Engineering cost estimates provided in this study should be regarded as conceptual level for use as a planning guide. Only during final design can a definitive and more accurate estimate be provided for each project.

Cost estimates for each project are detailed in Table 6-1 and Appendix D, while Figure 6-1 illustrates the location of each improvement. Figures in Appendix A illustrate the buildout locations and capacity of each master planned facility. Table 6-2 also summarizes the projected costs for the recommended system improvements through 2045.

Table 6-1
Recommended 20 Year Projects

Project Type	Map ID[1]	Recommendation	Cost Estimate
Source	DW01	**Well 7 Pipeline** - Construct 500 LF of 10-inch pipeline to connect Well 7 to the DW System.	$448,000
Storage Transmission	DW02	**Tank 13 & Pump Station 12** - Construct a 1.0 MG Storage Tank (Tank 13), 5,200 LF of 16-inch pipeline, and a 500 gpm pump station (Booster 12).	$8,473,000
Storage Transmission	DW03	**Tank 8** - Construct a 5.0 MG Storage Tank (Tank 8) and 5,300 LF of 24-inch pipeline.	$17,876,000
Transmission	DW04	**Zone 1 16-inch Pipeline** - Construct 1,400 LF of 16-inch pipeline.	$571,000
Transmission	DW05	**Zone 2 North 16-inch Pipeline** - Construct 3,500 LF of 16-inch pipeline.	$1,428,000
Storage Transmission	DW06	**Tank 14 & Pump Station 6** - Construct a 1.1 MG Storage Tank (Tank 14), a 900 gpm pump station (Booster 6), and 2,500 LF of 16-inch pipeline.	$7,717,000
Storage Transmission	DW07	**Tank 15 & Pump Station 14** - Construct a 0.9 MG Storage Tank (Tank 15), a 500 gpm pump station (Booster 14), and 1,500 LF of 12-inch pipeline.	$6,658,000
Storage Transmission	DW08	**Tank 20** - Construct a 1.0 MG Storage Tank (Tank 20) and 6,000 LF of 16-inch pipeline.	$5,336,000
Transmission	DW09	**SR 73 Crossing** - Construct 300 LF of 12-inch pipeline across SR73.	$708,000
Total			**$48,507,000**

1. The Map ID corresponds to the project number on Figure 6-1.

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SUMMARY OF COSTS

Table 6-2 is a summary of the project costs listed in Table 6-1. An engineering and administrative contingency plus a general contingency are included in the cost estimates presented in Table 6-1. Table 6-2 shows the total costs for each project type without contingencies. These tables do not include any financing costs associated with funding options.

Table 6-2
Summary of Costs

Project Type	Cost
Source	$373,250
Storage	$23,400,000
Transmission	$18,908,000
Total	**$42,681,250**
Total with Contingencies	**$48,507,000**

ASSET DEPRECIATION

In addition to planning for future growth, the City may also wish to allocate funds for the eventual replacement of aging infrastructure. Because most of the City's drinking water system was constructed within the past 25 years and remains in good condition, this report does not include specific replacement recommendations. Instead, Appendix F provides an asset depreciation analysis that can be used to determine the annual funding needed to replace infrastructure as it reaches the end of its service life. Appendix F also includes an estimate of the depreciation value for the City's drinking water assets and facilities.

FUNDING OPTIONS

Funding options for the recommended projects, in addition to water use fees, include: general obligation bonds, revenue bonds, State/Federal grants and loans, and impact fees. In reality, the City may need to consider a combination of these funding options. The following discussion describes each of these options.

Revenue Bonds

This form of debt financing is also available to the City for utility-related capital improvements. Unlike General Obligation (G.O.) bonds, revenue bonds are not backed by the City as a whole, but constitute a lien against the water service charge revenues of a Water Utility. Revenue bonds present a greater risk to the investor than G.O. bonds, since repayment of debt depends on an adequate revenue stream, legally defensible rate structure /and sound fiscal management by the issuing jurisdiction.

Due to this increased risk, revenue bonds generally require a higher interest rate than G.O. bonds. This type of debt also has very specific coverage requirements in the form of a reserve fund specifying an amount, usually expressed in terms of average or maximum debt service due in any future year. This debt service is required to be held as a cash reserve for annual debt service payment to the benefit of bondholders. Typically, voter approval is not required when issuing

revenue bonds. For growth-related projects, this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

State or Federal Grants and Loans

Historically, both local and county governments have experienced significant infrastructure funding support from state and federal government agencies in the form of block grants, direct grants in aid, interagency loans, and general revenue sharing. Federal expenditure pressures and virtual elimination of federal revenue sharing are clear indicators that local government may be left to its own devices regarding infrastructure finance in general. However, state or federal grants and loans should be further investigated as a possible funding source for needed water system improvements.

It is also important to assess likely trends regarding state or federal assistance in infrastructure financing. Future trends indicate that grants will be replaced by loans through a public works revolving fund. Local governments can expect to access these revolving funds or public works trust funds by demonstrating both the need for and the ability to repay the borrowed monies, with interest. As with the revenue bonds discussed earlier, the ability of infrastructure programs to wisely manage their own finances will be a key element in evaluating whether many secondary funding sources, such as federal/state loans, will be available to the City.

User Fees

Similar to property taxes on existing residents, user fees to pay for improvements related to new growth-related projects places an unfair burden on existing residents as they had previously paid for their level of service.

Impact Fees

The Utah Impact Fees Act, codified in Title 11, Chapter 36a, of the Utah Code, authorizes municipalities to collect impact fees to fund public facilities. An impact fee is “a payment of money imposed upon new development activity . . . to mitigate the impact of the new development on public infrastructure” (Subsection 11-36a-102(8)). Impact fees enable local governments to finance infrastructure improvements without burdening existing development with costs that are exclusively attributable to growth.

Impact fees can be applied to water-related facilities under the Utah Impact Fees Act. The Act is designed to provide a logical and clear framework for establishing new development assessments. It is also designed to establish the basis for the fee calculation which the City must follow in order to comply with the statute. The fundamental objective for the fee structure is the imposition on new development of only those costs associated with providing or expanding water infrastructure to meet the capacity needs created by that specific new development. Impact fees cannot be applied retroactively.

Saratoga Springs completed an Impact Fee Facilities Plan and Impact Fee Analysis for its drinking water system in February 2025.

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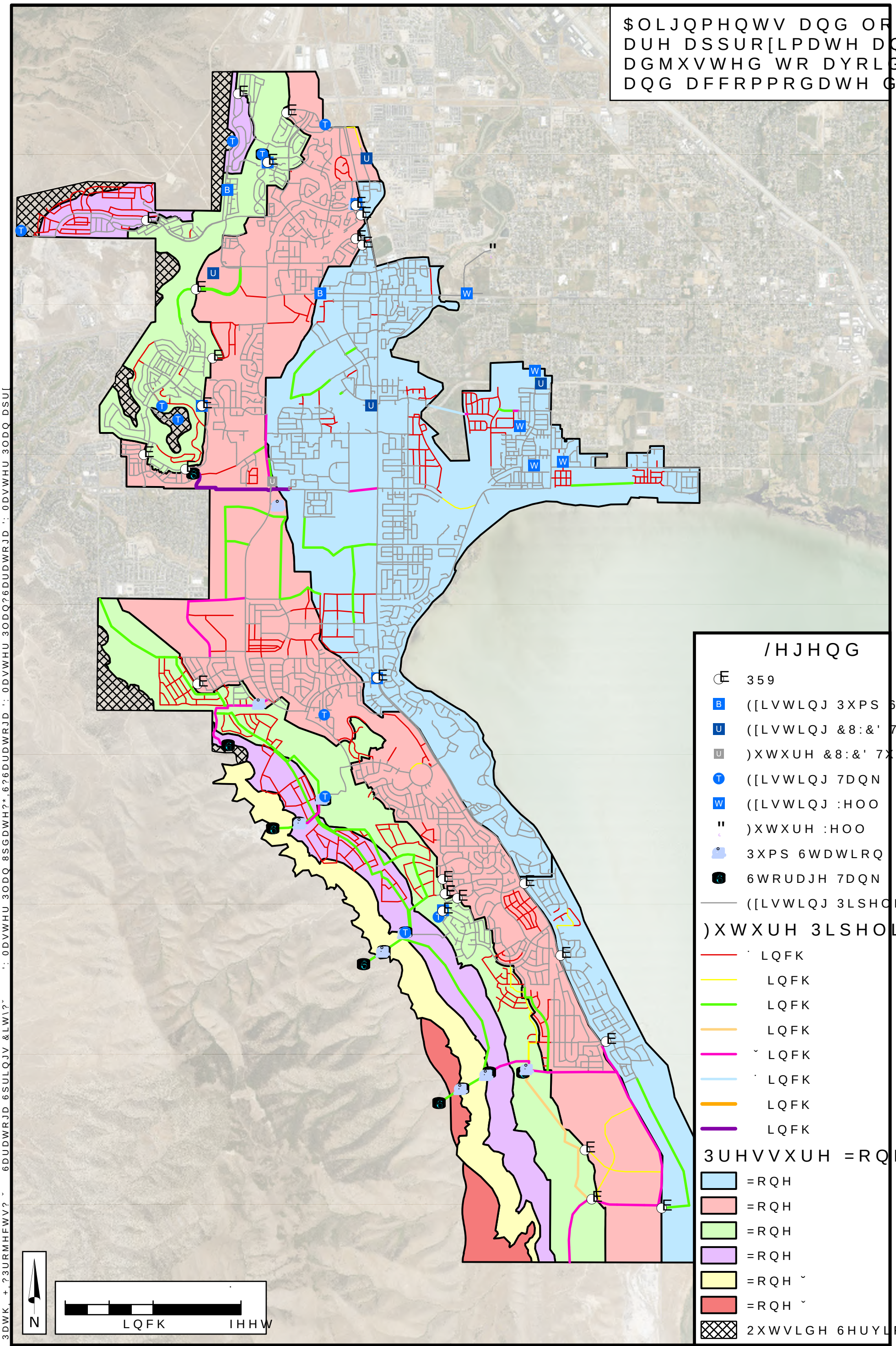
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APPENDIX A

Future Drinking Water System Map and Schematic

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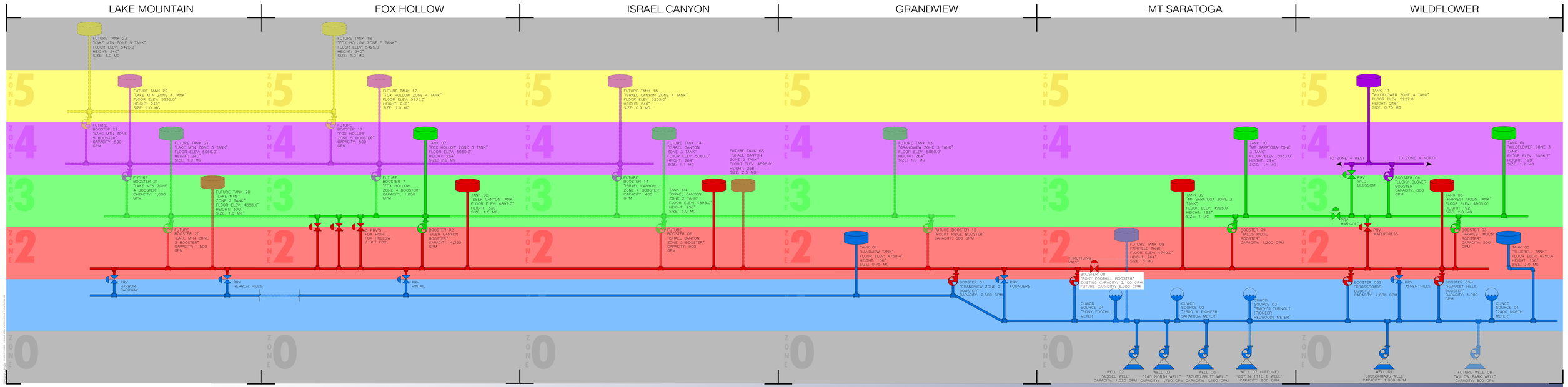
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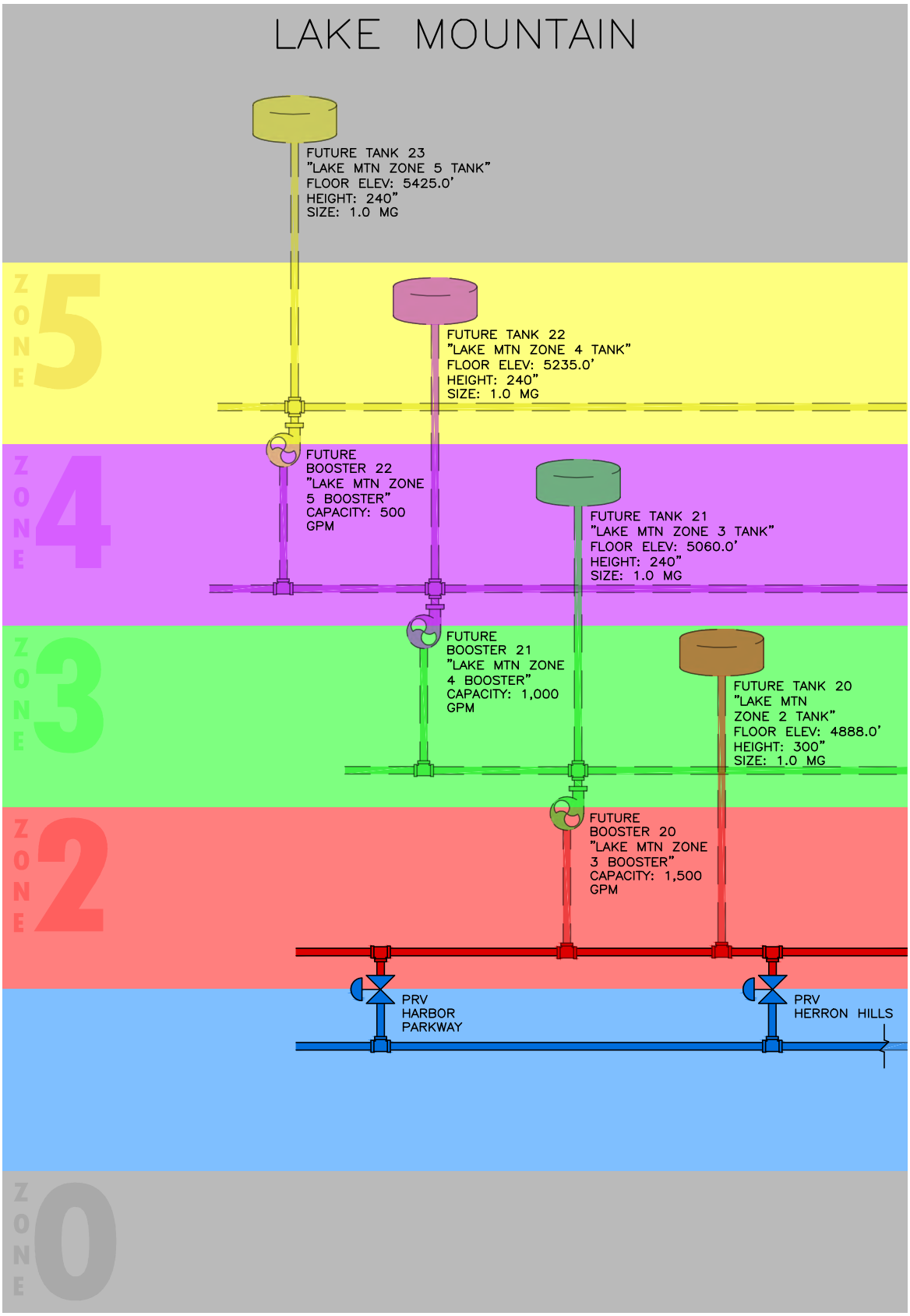
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ENGINEERS

CITY OF SARATOGA SPRINGS HYDRAULIC PROFILE - DRINKING WATER





TO FOX HOLLOW >

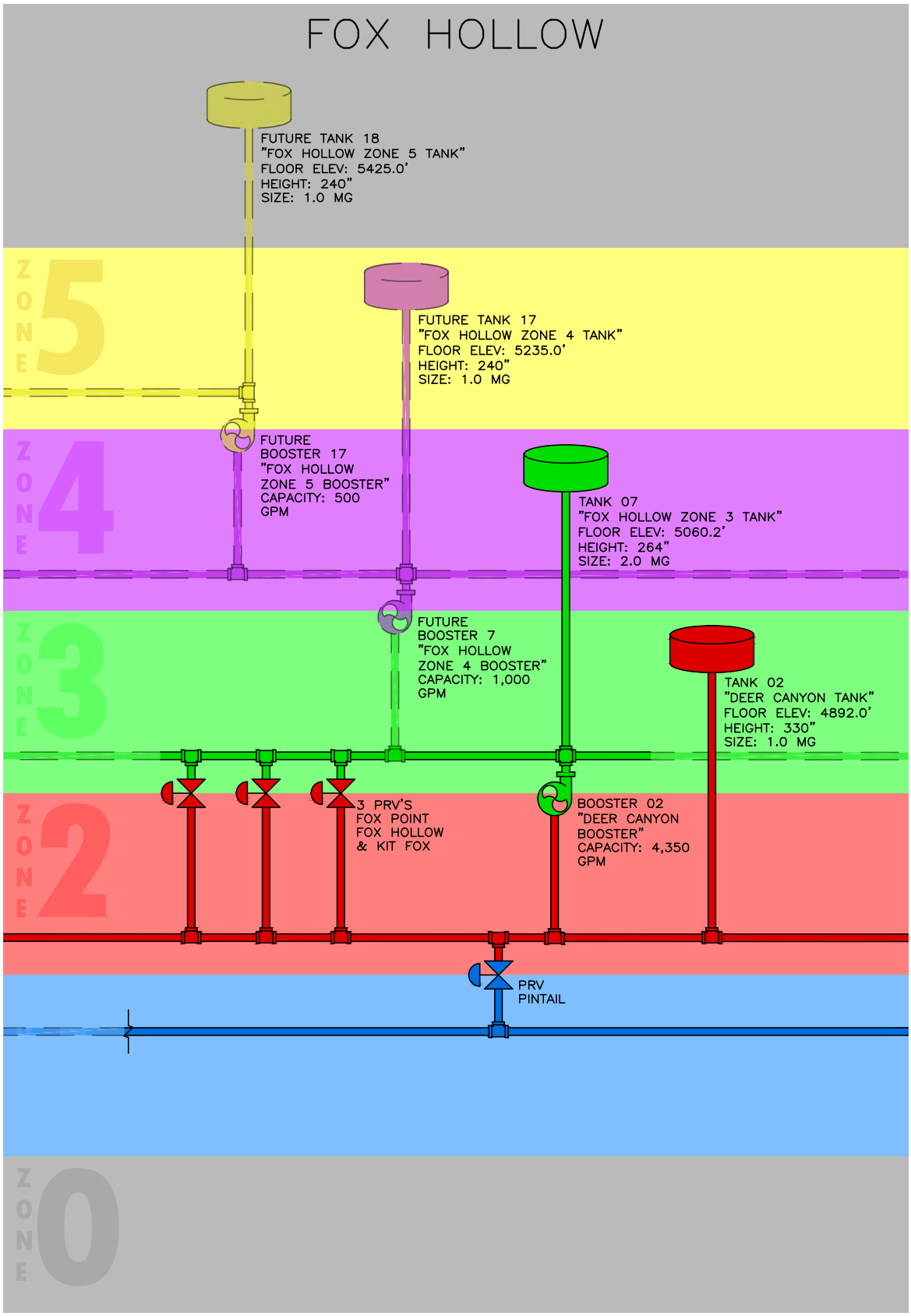
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FILE DATE: 1.20.2026 12:28:18 (LRH)

HANSEN ALLEN & LUCE inc ENGINEERS

CITY OF SARATOGA SPRINGS
DRINKING WATER SYSTEM KEY INFRASTRUCTURE

SARATOGA SPRINGS Life's just better here

FOX HOLLOW



< TO LAKE MOUNTAIN

TO ISRAEL CANYON >

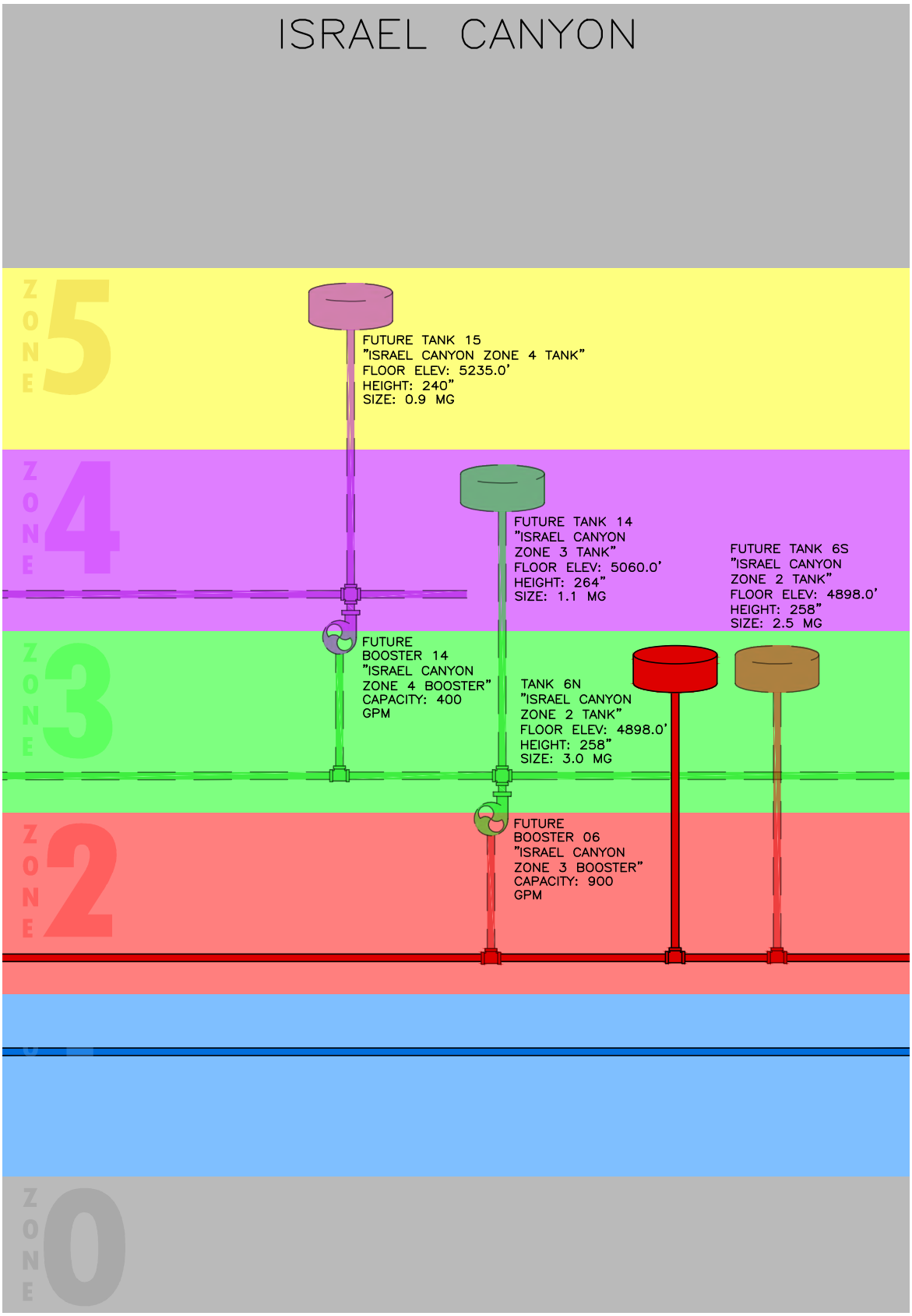
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FILE DATE: 1.20.2026 12:29:11 (LRH)

ISRAEL CANYON



< TO FOX HOLLOW

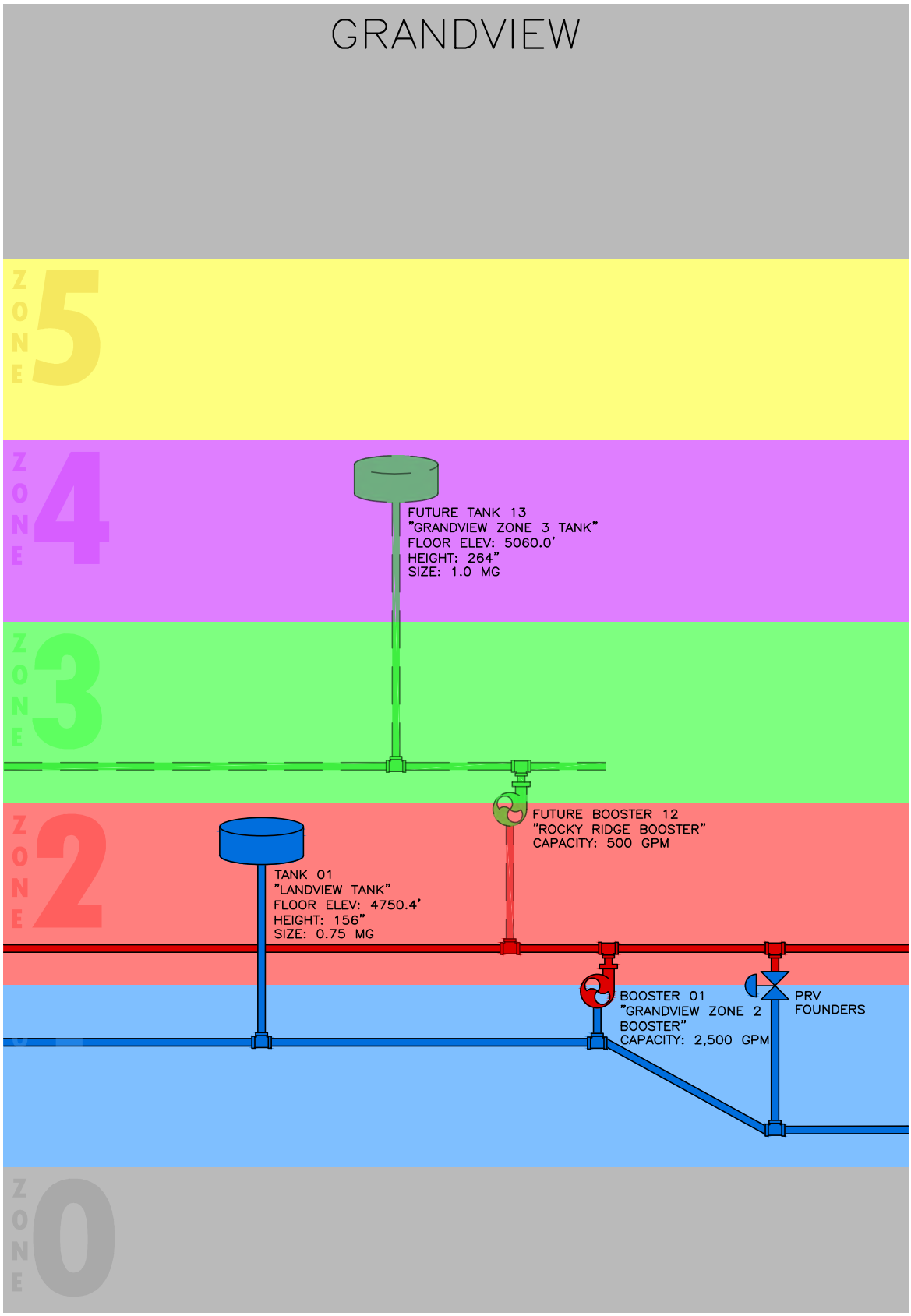
TO GRANDVIEW >

CITY OF SARATOGA SPRINGS
DRINKING WATER SYSTEM KEY INFRASTRUCTURE

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< TO ISRAEL CANYON

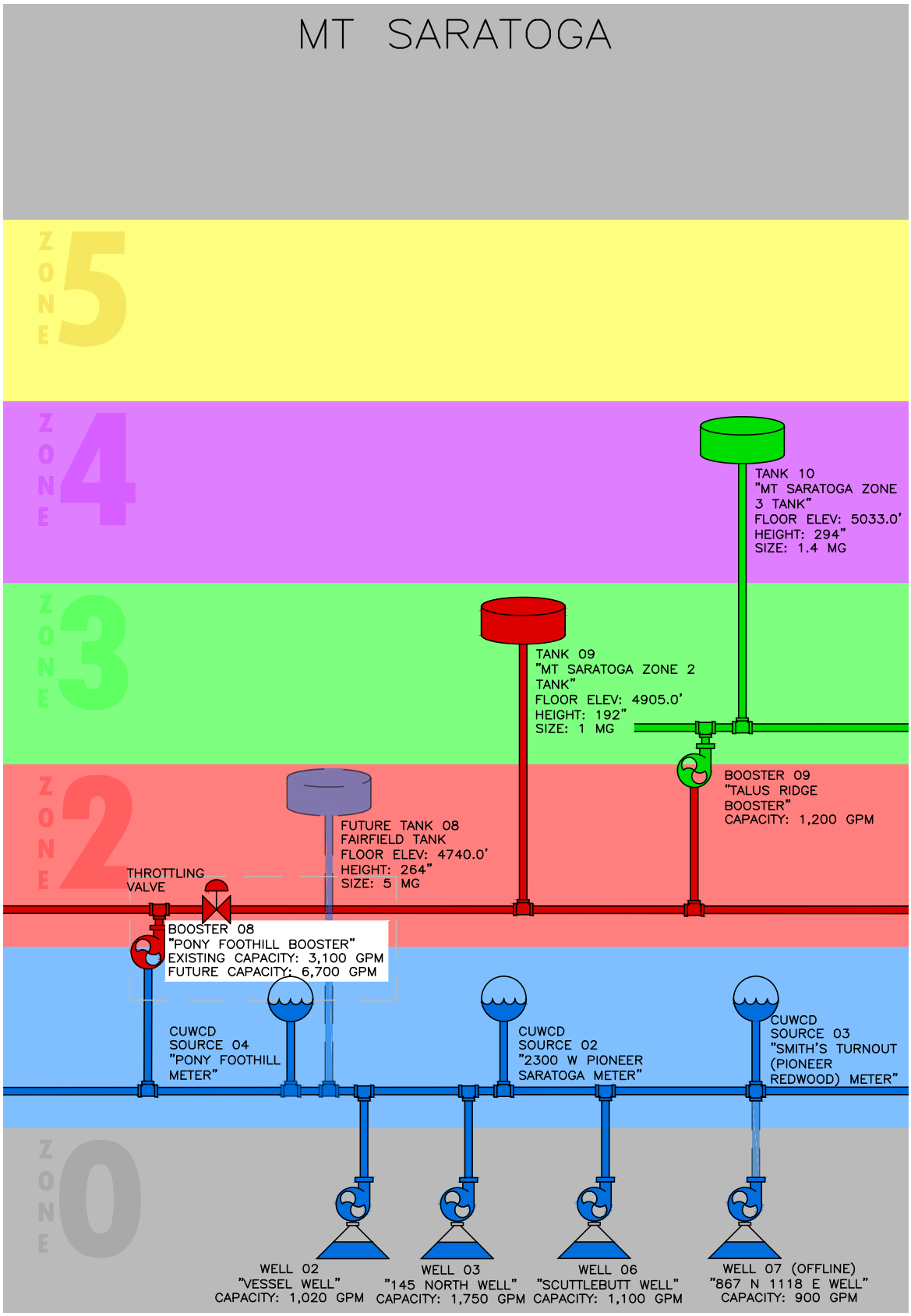
TO MT SARATOGA >

CITY OF SARATOGA SPRINGS
DRINKING WATER SYSTEM KEY INFRASTRUCTURE

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FILE DATE: 1.20.2026 12:30:57 (LRH)



< TO GRANDVIEW

TO WILDFLOWER >

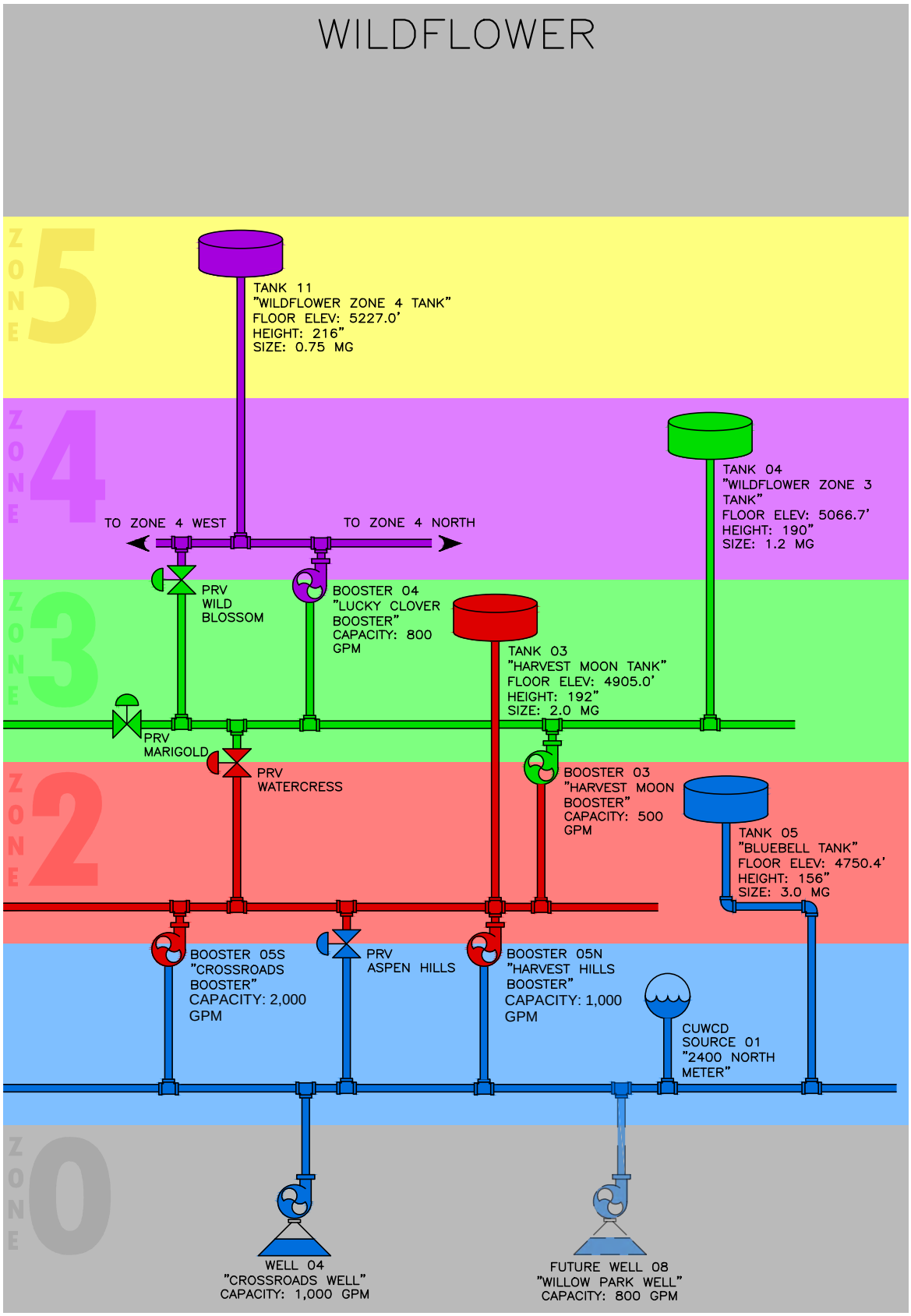
CITY OF SARATOGA SPRINGS
DRINKING WATER SYSTEM KEY INFRASTRUCTURE

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WILDFLOWER



< TO MT SARATOGA

CITY OF SARATOGA SPRINGS
DRINKING WATER SYSTEM KEY INFRASTRUCTURE

HANSEN ALLEN & LUCE inc ENGINEERS

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FILE DATE: 1.20.2026 12:55:04 (LRH)

APPENDIX B

Zions Public Finance Growth Projections Memorandum

ZIONS PUBLIC FINANCE, INC.

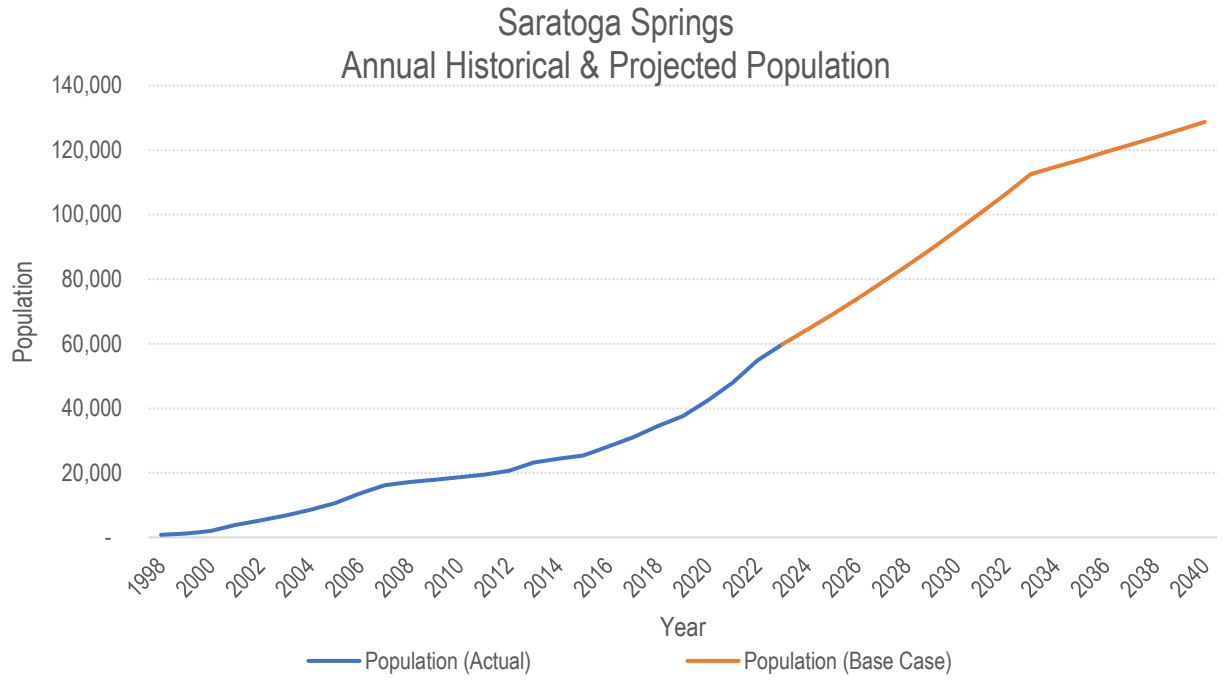
GROWTH PROJECTIONS MEMORANDUM

Historic and Projected Growth

Saratoga Springs continues its historically robust pace of growth as of March 2024. Indeed, over the trailing five-year period from 2018-2023, the City's population has increased at an average annual growth rate of 11.6 percent, reaching a new record population of 59,812 as of 2023. This comprises an absolute increase of 25,288 people since the close of 2018.

Zions projects Saratoga Springs to grow at an average annual growth rate of 6.1 percent, or 4,996 people, per-year over the period 2024-2034. Over the longer period of 2035-2040, Zions projects an average annual growth rate of 4.8 percent, at 4,157 people per year. In the year 2040 this would place Saratoga Springs total population at approximately 130,000 people.

CHART 1: SARATOGA SPRINGS ANNUAL HISTORICAL AND PROJECTED POPULATION



In generating these projections, Zions implemented a linear model coupled with upper and lower prediction intervals calculated at the 95% probability level to provide a base case long-term population growth scenario.

- Base Case – this scenario projects forward population levels assuming the mean growth of the City throughout its history. This is Zions recommended scenario.

The total population scenario is provided in the table below.

TABLE 1: HISTORIC ACTUAL AND PROJECTED POPULATION SCENARIO

Year	Population (Actual)	Projected Population (Base Case)
1998	795	-
1999	1,240	-
2000	1,984	-
2001	3,898	-
2002	5,267	-
2003	6,714	-
2004	8,520	-
2005	10,645	-
2006	13,574	-
2007	16,162	-
2008	17,135	-
2009	17,817	-
2010	18,624	-
2011	19,452	-
2012	20,663	-
2013	23,180	-
2014	24,403	-
2015	25,401	-
2016	28,138	-
2017	31,059	-
2018	34,524	-
2019	37,581	-
2020	42,449	-
2021	47,840	-
2022	54,875	-
2023	59,812	-
2024	-	64,334
2025	-	69,022
2026	-	73,877
2027	-	78,898
2028	-	84,085
2029	-	89,438
2030	-	94,958
2031	-	100,644
2032	-	106,496
2033	-	112,514
2034	-	114,764
2035	-	117,035
2036	-	119,328
2037	-	121,641
2038	-	123,974
2039	-	126,327
2040	-	128,698

Next, considering the recommended population scenario, we highlight annual percentage changes in the table below.

TABLE 2: ANNUAL PERCENT CHANGE IN PROJECTED POPULATION GROWTH

Year	Projected Population (Base Case)	YoY% Growth
2024	64,334	7.6%
2025	69,022	7.3%
2026	73,877	7.0%
2027	78,898	6.8%
2028	84,085	6.6%
2029	89,438	6.4%
2030	94,958	6.2%
2031	100,644	6.0%
2032	106,496	5.8%
2033	112,514	5.7%
2034	114,764	2.0%
2035	117,035	2.0%
2036	119,328	2.0%
2037	121,641	1.9%
2038	123,974	1.9%
2039	126,327	1.9%
2040	128,698	1.9%

Additionally, we provide year-over-year growth figures in count of people below in table 3.

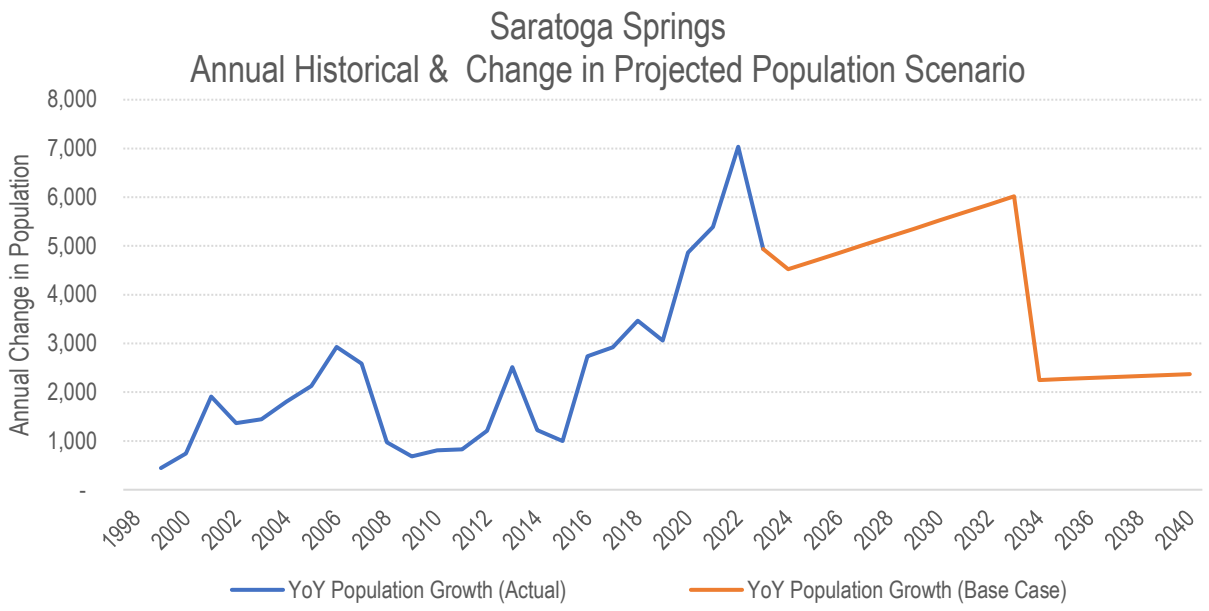
TABLE 3: ANNUAL CHANGE IN HISTORIC AND PROJECTED POPULATION GROWTH

Year	YoY Population Growth (Actual)	YoY Population Growth (Base Case)
1998	-	-
1999	445	-
2000	744	-
2001	1,914	-
2002	1,369	-
2003	1,447	-
2004	1,806	-
2005	2,125	-
2006	2,929	-
2007	2,588	-
2008	973	-
2009	682	-
2010	807	-
2011	828	-
2012	1,211	-
2013	2,517	-
2014	1,223	-
2015	998	-
2016	2,737	-
2017	2,921	-

Year	YoY Population Growth (Actual)	YoY Population Growth (Base Case)
2018	3,465	-
2019	3,057	-
2020	4,868	-
2021	5,391	-
2022	7,035	-
2023	4,937	
2024	-	**4,522**
2025	-	**4,688**
2026	-	**4,855**
2027	-	**5,021**
2028	-	**5,187**
2029	-	**5,353**
2030	-	**5,520**
2031	-	**5,686**
2032	-	**5,852**
2033	-	**6,018**
2034	-	**2,249**
2035	-	**2,271**
2036	-	**2,292**
2037	-	**2,313**
2038	-	**2,333**
2039	-	**2,353**
2040	-	**2,372**
Avg. Forward Growth/Year		**4,052**

Next, utilizing historical data regarding residential units added annually, we can understand the relationship between population growth and the growth of residential units in the community. This historical record of residential units added annually with forward projections is provided below.

CHART 2: SARATOGA SPRINGS HISTORICAL & PROJECTED RESIDENTIAL UNITS ADDED ANNUALLY



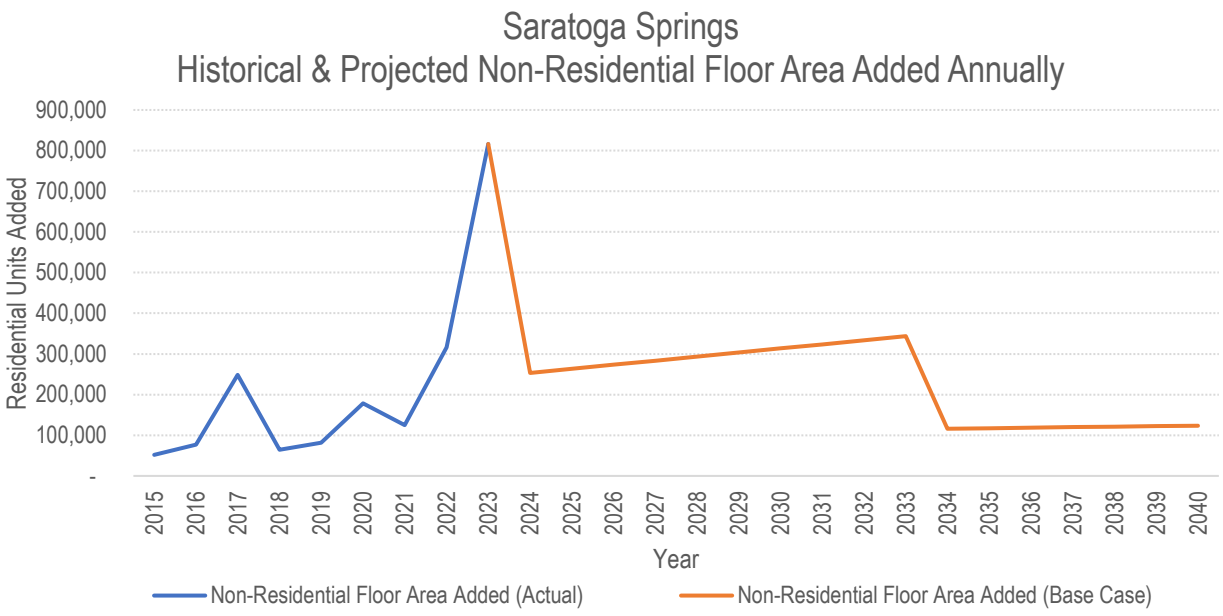
When analyzing the forward growth of residential units within Saratoga Springs, we again note the recommended base case scenario. This data is provided in table 4 below.

TABLE 4: HISTORICAL AND PROJECTED RESIDENTIAL UNITS ADDED ANNUALLY

Year	Residential Units Added (Actual)	Residential Units Added (Base Case)
2013	438	-
2014	315	-
2015	382	-
2016	812	-
2017	620	-
2018	666	-
2019	730	-
2020	1,536	-
2021	1,763	-
2022	1,091	-
2023	1,161	-
2024	-	**1,065**
2025	-	**1,100**
2026	-	**1,135**
2027	-	**1,169**
2028	-	**1,204**
2029	-	**1,238**
2030	-	**1,273**
2031	-	**1,307**
2032	-	**1,342**
2033	-	**1,377**
2034	-	**592**
2035	-	**597**
2036	-	**601**
2037	-	**606**
2038	-	**610**
2039	-	**614**
2040	-	**618**
Avg. Forward Growth/Year		**968**

Finally, we also provide a forecast of non-residential floor area added annually. We note that 2023 added non-residential floor area in an amount of 816,317 square feet, which stands 5.7x the historical average from 2015-2022. This is above trend, and while certainly possible to continue in the future, 2024 floor area constructed thus far is 151,770 square feet. Our statistical calculations predict 2024 to end with 322,719 square feet constructed in total. However, we acknowledge that the City has additional tangible, on-the-ground, knowledge regarding permitted construction that may diverge from this figure. Please see the historical chart and projections below.

CHART 3: SARATOGA SPRINGS HISTORICAL & PROJECTED NON-RESIDENTIAL FLOOR AREA ADDED ANNUALLY



Regarding non-residential floor area added, the Mid-Upper Range growth scenario is again selected. Over the future period from 2024-2040 we project an annual average of 224,844 square feet of non-residential floor area added annually. This data is provided directly in table 5 below.

TABLE 5: HISTORICAL AND PROJECTED NON-RESIDENTIAL FLOOR AREA ADDED ANNUALLY

Year	Non-Residential Floor Area Added (Actual)	Non-Residential Floor Area Added (Base Case)
2015	51,777	-
2016	76,676	-
2017	248,586	-
2018	64,614	-
2019	81,699	-
2020	178,188	-
2021	125,249	-
2022	316,469	-
2023	816,317	-
2024	-	**253,217**
2025	-	**263,255**
2026	-	**273,293**
2027	-	**283,332**

Year	Non-Residential Floor Area Added (Actual)	Non-Residential Floor Area Added (Base Case)
2028	-	**293,370**
2029	-	**303,409**
2030	-	**313,447**
2031	-	**323,485**
2032	-	**333,524**
2033	-	**343,562**
2034	-	**116,002**
2035	-	**117,318**
2036	-	**118,598**
2037	-	**119,843**
2038	-	**121,056**
2039	-	**122,239**
2040	-	**123,392**
Avg. Forward Growth/Year		**224,844**

Additional Considerations

As part of this analysis, Zions implemented a linear regression model coupled with prediction intervals calculated using Saratoga Springs historical data, including a prediction for year 2024 which is yet to close. As mentioned above, we acknowledge that the City may have additional tangible, on-the-ground, knowledge regarding growth in 2024 that is yet to be reflected in data.

APPENDIX C

DDW Minimum Sizing Standards

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Tim Davis
Executive Director

DIVISION OF DRINKING WATER
Nathan Lunstad, Ph.D., P.E.
Director

March 12, 2025

Via Email: janderson@saratogasprings-ut.gov
Jodi Anderson
Saratoga Springs City
1307 North Commerce Drive
Saratoga Springs, Utah 84045

Subject: **2025 Renewal System-Specific Minimum Sizing Standards—Final Determination**
Saratoga Springs City System #25138, File #11604

Dear Jodi Anderson:

DETERMINATIONS

Based on the findings set forth below, the Division of Drinking Water (the Division) hereby establishes the following system-specific minimum sizing standards for Saratoga Springs City (the System):

Peak Day Source Demand (gallons/day/ERC) – 375
Average Annual Demand (gallons/year/ERC) – 97,755
Equalization Storage (gallons/ERC) – 267
Fire Storage (gallons) – 2,138,000

Introduction

Pursuant to Utah Code Section 19-4-114, the Director of the Division (Director) is required to establish system-specific minimum sizing standards based on, among other factors, water use data submitted to the Division of Water Rights (DWRi). The Director's determinations may also be based on engineering analyses and other evidence if this is available. This final determination letter is addressed to you in your capacity as the Administrative Contact for the System. The Director has delegated the responsibility for making system-specific minimum sizing standards under Utah Code Section 19-4-114 to the Engineering Manager for the Division.

Prior to issuing this final determination letter, the Division analyzed applicable DWRi water use data and sent a draft summary of the Division's proposed system-specific minimum sizing standards to the System on January 28, 2025. The Division allowed for 30 days for the System to review the draft system-specific minimum sizing. The System's consultant Kai Krieger, P.E., of Hansen Allen and

Luce submitted an Engineering Study on February 12, 2025. The Division has taken the engineering study into account in reaching this final determination of the system-specific minimum sizing standards for the System. A summary of the water use data and calculations the Division used to make these determinations is attached as part of the administrative record.

Water Use Data Definitions

As used in this Final Determination, the following terms have the following meanings:
Peak Day Source Demand is the total flow into a public water system to meet the demand of the water system on the day of the highest water consumption in a calendar year.

Average Annual Demand is the total quantity of drinking water flowing into a public water system within a calendar year.

Total Equivalent Residential Connections (ERCs) term represents the number of residential service connections and the number of equivalent residential connections for non-residential connections (commercial, industrial, institutional connections).

Minimum Equalization Storage requirement is a volume that is equivalent to the amount of water needed to meet the average day culinary demand for public water systems. Equalized storage per ERC is calculated by dividing the Average Annual Demand per ERC data by the number of operational days in a year.

Water System Background Facts

The System is a community water system in Utah County. The system currently has 11,925 residential connections serving an approximate population of 49,405 residents. Additionally, the System provides water to 225 commercial, and 80 institutional connections. The System operates and maintains five (5) active sources, four (4) wells and a consecutive connection to Central Utah WCD - Utah Valley (UTAH25112), and ten (10) storage tanks with the associated distribution lines.

System-Specific Minimum Sizing Standards—Background

Under Utah Code Section 19-4-114, the legislature required that the Director establish minimum sizing standards on a system-specific basis instead of statewide, as the Division has done in the past. System-specific determinations need to be based on system-specific information. The code allows the Director to rely on water use data submitted to DWRi. Alternatively, a community water system may perform and submit an engineering study to the Division if the water system's water use data is not representative of future use or the water system does not yet have actual water use data. In this matter, an engineering study was submitted to the Division for review.

Additional System-Specific Basis for Determinations

The Division established Fire Storage requirements based on information from Saratoga Springs Master Report dated July 19, 2018.

Storage Capacity

Based on the System's storage facilities and the storage minimum sizing requirement established in this letter, the Director hereby determines that the System is compliant with the minimum storage capacity requirements.

Source Capacity

The Division has adequate documentation of established safe yields (wells) for all the System's sources. Using total system-wide safe yields and the source minimum sizing requirement established in this letter indicates that the System is compliant with minimum source capacity requirements.

Effective Date

The determinations made in this letter are effective immediately and will become final 30 days from the date of this letter unless the System files a contest as provided below.

Notice of Right to Contest

The Director has determined this determination made under Section 19-3-114 qualifies as a "permit order" within the meaning of Utah Code Section 19-1-301.5(1)(f). *See* Utah Code § 19-1-301.5(1)(e) (defining "permit" to include a "plan" or "other administrative authorization").

The System may contest any determinations made herein by delivering a notice of contest to the Director. The notice of contest must be in writing and must be delivered to the Director on or before 30 days after the date this letter is signed. There is no particular form for the notice of contest, but it must include the System's reasons and rationale for the contest. The Director's address for purposes of submitting a notice of contest is as follows:

U.S. Mail

Division of Drinking Water
Attention: Director
P.O. Box 144830
Salt Lake City, UT 84114-4830

Email

A notice of contest may be submitted to the Director by email, provided, however, that the Director confirms receipt of the email. The Director's email address is: nlunstad@utah.gov. The email submission must be received by the Director before the expiration of the contest deadline.

If the System files a timely notice of contest, the Director will evaluate the matter and attempt to resolve the matter through negotiations. If the Director is not able to resolve the matter, the Director will issue a final agency action regarding the contest. At that point in the process, the System shall

have the right to seek further internal agency and judicial review pursuant to Utah Admin. Code R305-7 and Utah Code Section 19-1-301.5.

Right to Request Reconsideration

The Director plans to evaluate the determinations made herein every three years. However, this requirement is not mandatory. At any time, a water system whose system-specific minimum sizing standards have been established by the Division under Section 19-4-114 may request reconsideration of the Director's determinations by submitting a written request. A request for reconsideration shall be submitted to the Director in the same manner as a notice of contest provided above.

Conclusion

If the System management has any questions regarding this letter, please contact Dani Zebelean, P.E., of this office, at (385) 278-5110, or me at (385) 515-1464.

Sincerely,



Michael Newberry, P.E.
Permitting and Engineering Support Manager

DZ/mrn/mdb

Enclosures
1. 25138 11604 - Sizing Standard Renewal Calculation

cc: Daymon Swenson, Utah County Health Department, daymons@utahcounty.gov
Jodi Anderson, Saratoga Springs City, janderson@saratogasprings-ut.gov
Dean Free, Saratoga Springs City, dfree@saratogasprings-ut.gov
Jeremy Lapin, Saratoga Springs City, jlapin@saratogasprings-ut.gov
Jon Torrence, Saratoga Springs City, jtorrence@saratogasprings-ut.gov
Tyler Hoover, Saratoga Springs City, thoover@saratogasprings-ut.gov
Kai Krieger, Hansen Allen and Luce, kkrieger@halengineers.com
Tyler Daynes, Hansen Allen and Luce, tdaynes@halengineers.com
Dani Zebelean, Division of Drinking Water, dzebelean@utah.gov
Ted Black, Office of the State Fire Marshal, tblack@utah.gov

DDW-2025-002366

Utah Department of Environmental Quality
Division of Drinking Water
Minimum Sizing Standards

SARATOGA SPRINGS CITY — PWS ID: UTAH25138

Admin Name: JODI L ANDERSON
Address: 1307 North Commerce Drive
City, State, Zip: Saratoga Springs, Utah 84045
Phone: 801-766-6506
Email: JANDERSON@saratogasprings-ut.gov

System Type: Community
Population: 58,000

MINIMUM SIZING STANDARD

Date Standard Effective: Tue Mar 11 08:18:25 MDT 2025
Peak Day Source Demand per ERC (gal/day): 375[a]
Average Annual Demand per ERC (gal/year): 97,755[b]
Equalization Storage per ERC (gal): 267[c]

[a]Adjusted per Engineering Report Dated February 10, 2025
[b]Adjusted per Engineering Report dated February 10, 2025
[c]Adjusted per Engineering Report dated February 10, 2025

MINIMUM SIZING STANDARD CALCULATIONS — VARIABILITY

Data from these reporting years: 2021, 2022, 2023, 2024

Peak Day Source Demand per ERC (gal/day): 265	x	(1 + 0.0)	=	265
Average Annual Demand per ERC (gal/year): 70,873	x	(1 + 0.0)	=	70,873
Equalization Storage per ERC (gal): 194	x	(1 + 0.0)	=	194

DWRi WATER USE DATA REPORTED

Year	Peak Day Source Demand (gal/day)	Average Annual Demand (gallons)	ERCs	Peak Demand per ERC (gal/day)	Avg Annual Demand per ERC (gal/year)	Equalization Storage per ERC (gal)	OP Days
2024	3,818,973	1,351,111,844.91	17,533	218	59,424	162	366
2023	3,095,584	1,268,772,555.72	13,275	233	66,126	181	365
2022	2,704,563	1,191,435,079.38	11,654	232	70,873	194	365
2021	3,062,999	1,042,661,288.31	11,567	265	68,590	188	365
Variability:			0.516	0.0	0.0	0.0	

Year	Peak Month Average (gal/day)	Peak Month Average per ERD (gal/day)	Ratio of PD/ERC to Peak Month Avg/ERC
2024	3,118,709	178	1.22
2023	2,429,692	183	1.27
2022	2,213,369	190	1.22
2021	2,568,031	222	1.19

CAPACITY CALCULATIONS FOR STORAGE

Equalization per ERC (gal): 267
Existing Storage (gal): 17,120,000
ERCs: 17,533
Required Storage w/o Fire Flow: 4,681,311
Required Fire Storage (gal): 2,180,000
Required Storage w/Fire (gal): 6,861,311
Storage Deficiency: 0
Storage Deficiency (%): 0.0
No Storage Deficiency

CAPACITY CALCULATIONS FOR SOURCES

Peak Day Source Demand per ERC (gpm): 0.26
Existing Source Capacity (gpm): 11,450
ERCs: 17,533
Required Source Capacity (gpm): 4,559
Source Deficiency: 0
Source Deficiency (%): 0.0

No Source Deficiency

SYSTEM STORAGE AND SOURCE INVENTORY

Storage ID	Storage Name	Effective Volume (GAL)
ST001	ISRAEL CANYON ZONE 2 (T6)	3,000,000
ST002	FOX HOLLOW ZONE 2 (T2)	2,000,000
ST003	GRANDVIEW ZONE 1 (T1)	750,000
ST004	HARVEST HILLS ZONE 2 (T3)	2,000,000
ST005	HARVEST HILLS ZONE 1 (T5)	3,000,000
ST006	WILDFLOWER ZONE 3 (T4)	1,200,000
ST007	FOX HOLLOW ZONE 3 (T7)	2,000,000
ST008	MT SARATOGA ZONE 3 (T10)	1,420,000
ST009	WILDFLOWER ZONE 4 (T11)	750,000
ST010	MT. SARATOGA ZONE 2 (T9)	1,000,000
		Storage Totals: 17,120,000 GAL

Source ID	Source Name	Flow Rate (GPM)
WS002	WELL #2	350
WS003	WELL #3	200
WS004	WELL #6	900
WS005	WELL #7	
WS006	WELL #8	
WS007	WELL #4	1,000
WS008	UTAH25112 CENTRAL UTAH WCD- UTAH VALLEY	9,000
		Source Totals: 11,450 GPM

APPENDIX D

Project Cost Estimates

Saratoga Springs Capital Facility Plan
Drinking Water System
Preliminary Engineers Cost Estimates

	Item	Unit	Pipe Diameter	2025 Unit Price	Quantity	Total Price	Category
DW01	***Well 7 Pipeline***						
	Install 10-inch pipeline	LF	10	$ 270	375	$ 101,250	Wells
	Directional drill 10-inch HDPE pipeline	LF	10	$ 1,600	170	$ 272,000	Wells
					Total	$ 373,250	
					Engineering & Admin. (10%)	$ 37,325	
					Contingency (10%)	$ 37,325	
					Total to Well 7 Pipeline	**$ 448,000**	
DW02	***Tank 13 & Pump Station 12***						
	Construct 1 MG Tank	GAL	NA	$ 2.60	1,000,000	$ 2,600,000	Storage
	Construct 500 gpm Pump Station	LS	NA	$ 3,000,000	1	$ 3,000,000	Source Conveyance
	Install 16-inch Pipeline	LF	16	$ 340	5,200	$ 1,768,000	Source Conveyance
					Total	$ 7,368,000	
					Engineering & Admin. (10%)	$ 736,800	
					Contingency (5%)	$ 368,400	
					Total to Tank 13 & Pump Station 12	**$ 8,473,000**	
DW03	***Tank 8***						
	Construct 5 MG Tank	GAL	NA	$ 2.60	5,000,000	$ 13,000,000	Storage
	Install 24-inch pipeline	LF	24	$ 480	5,300	$ 2,544,000	Source Conveyance
					Total	$ 15,544,000	
					Engineering & Admin. (10%)	$ 1,554,400	
					Contingency (5%)	$ 777,200	
					Total to Tank 8	**$ 17,876,000**	
DW04	***Zone 1 16-Inch Pipeline***						
	Install 16-inch pipeline	LF	16	$ 340	1,400	$ 476,000	Source Conveyance
					Total	$ 476,000	
					Engineering & Admin. (10%)	$ 47,600	
					Contingency (10%)	$ 47,600	
					Total to Zone 1 16-Inch Pipeline	**$ 571,000**	
DW05	***Zone 2 North 16-Inch Pipeline (Pony Express to Talus Ridge)***						
	Install 16-inch pipeline	LF	16	$ 340	3,500	$ 1,190,000	Source Conveyance
					Total	$ 1,190,000	
					Engineering & Admin. (10%)	$ 119,000	
					Contingency (10%)	$ 119,000	
					Total to Zone 2 North 16-Inch Pipeline (Pony Express to Talus Ridge)	**$ 1,428,000**	
DW06	***Tank 14 & Pump Station 6***						
	Construct 1.1 MG Tank	GAL	NA	$ 2.60	1,100,000	$ 2,860,000	Storage
	Construct 900 gpm Pump Station	LS	NA	$ 3,000,000	1	$ 3,000,000	Source Conveyance
	Install 16-inch Pipeline	LF	16	$ 340	2,500	$ 850,000	Source Conveyance
					Total	$ 6,710,000	
					Engineering & Admin. (10%)	$ 671,000	
					Contingency (5%)	$ 335,500	
					Total to Tank 14 & Pump Station 6	**$ 7,717,000**	
DW07	***Tank 15 & Pump Station 14***						
	Construct 0.9 Tank	GAL	NA	$ 2.60	900,000	$ 2,340,000	Storage
	Construct 500 gpm Pump Station	LS	NA	$ 3,000,000	1	$ 3,000,000	Source Conveyance
	Install 12-inch Pipeline	LF	12	$ 300	1,500	$ 450,000	Source Conveyance
					Total	$ 5,790,000	
					Engineering & Admin. (10%)	$ 579,000	
					Contingency (5%)	$ 289,500	
					Total to Tank 15 & Pump Station 14	**$ 6,658,500**	
DW08	***Tank 20***						
	Construct 1 MG Tank	GAL	NA	$ 2.60	1,000,000	$ 2,600,000	Storage
	Install 16-inch Pipeline	LF	16	$ 340	6,000	$ 2,040,000	Source Conveyance
					Total	$ 4,640,000	
					Engineering & Admin. (10%)	$ 464,000	
					Contingency (5%)	$ 232,000	
					Total to Tank 20	**$ 5,336,000**	

	Item	Unit	Pipe Diameter	2025 Unit Price	Quantity	Total Price	Category
DW09	***SR 73 Crossing***						
	1/2 Trench under SR 73	LS	NA	$ 500,000	1	$ 500,000	Source Conveyance
	Install 12-inch Pipeline	LF	12	$ 300	300	$ 90,000	Source Conveyance
					Total	$ 590,000	
					Engineering & Admin. (10%)	$ 59,000	
					Contingency (10%)	$ 59,000	
					Total to SR 73 Crossing	**$ 708,000**	

Total By Category	
Wells	$ 373,250
Source Conveyance	$ 18,908,000
Storage	$ 23,400,000
Total without Contingency	$ 42,681,250
Total with Contingency	$ 48,507,500

APPENDIX E

CUWCD Annual Purchase Schedule

EXHIBIT A

February, 2017

Take-Down Schedule - Purchased Water Take-Down Schedule (By Volume) for Purchased Water Under this Agreement

COLUMN	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	Annual Volume (Block) of Purchased Water For Which One-Time Development Fee is Due (AF)	One Time Development Charge for Blocks of Purchased Water (per AF)	Annual Volume of Purchased Water Subject to Capital Recovery Component of Annual Fee (AF)	*Actual* and Estimated Capital Recovery Component of Annual Fee for Volume of Water in Column C (per AF)	Annual Volume of Purchased Water which becomes Deliverable Water (AF)	Cumulative Annual Volume of Deliverable Water (AF)	*Actual* and Estimated OM&R Component of Annual Fee for Deliverable Water in Column (F) (per AF)	*Actual* and Estimated Future Annual Fee (As set annually by the District) (Fee includes the OM&R and Capital Recovery Components in Columns D & G
2008-09	0	*$6,200*	0		0	0		*$300*
2009-10	0	*$6,200*	0		0	0		*$314*
2010-11	0	*$6,200*	0		0	0		*$328*
2011-12	0	*$6,200*	0		0	0		*$343*
2012-13	0	*$6,200*	0		0	0		*$358*
2013-14	0	*$6,200*	0		0	0		*$374*
2014-15	0	*$6,200*	0	*$222*	0	0	*$169*	*$391*
2015-16	0	*$6,200*	0	*$203*	0	0	*$205*	*$408*
2016-17	0	*$6,200*	0	*$252*	0	0	*$175*	*$427*
2017-18	50	$6,200	50	$280	50	50	$166	$446
2018-19	50	$6,200	100	$310	50	100	$156	$466
2019-20	9900	$6,200	10,000	$346	380	480	$141	$487
2020-21	0		10,000	$364	380	860	$145	$509
2021-22	0		10,000	$383	380	1,240	$149	$532
2022-23	0		10,000	$400	380	1,620	$156	$556
2023-24	0		10,000	$421	380	2,000	$160	$581
2024-25	0		10,000	$442	380	2,380	$165	$607
2025-26	0		10,000	$464	380	2,760	$170	$634
2026-27	0		10,000	$484	380	3,140	$179	$663
2027-28	0		10,000	$508	380	3,520	$185	$693
2028-29	0		10,000	$530	380	3,900	$194	$724
2029-30	0		10,000	$556	380	4,280	$200	$756
2030-31	0		10,000	$583	380	4,660	$207	$790
2031-32	0		10,000	$609	380	5,040	$217	$826
2032-33	0		10,000	$639	380	5,420	$224	$863
2033-34	0		10,000	$668	380	5,800	$234	$902
2034-35	0		10,000	$702	380	6,180	$241	$943
2035-36	0		10,000	$733	380	6,560	$252	$985
2036-37	0		10,000	$7	380	6,940	$259	$266
2037-38	0		10,000	$8	380	7,320	$271	$279
2038-39	0		10,000	$11	380	7,700	$280	$291
2039-40	0		10,000	$12	380	8,080	$293	$305
2040-41	0		10,000	$16	380	8,460	$302	$318
2041-42	0		10,000	$16	380	8,840	$316	$332
2042-43	0		10,000	$20	380	9,220	$327	$347
2043-44	0		10,000	$21	380	9,600	$342	$363
2044-45	0		10,000	$25	400	10,000	$355	$380

- Actual previous or present fee amounts are in Italics and Blue as set by District Board of Trustees

Continues at 10,000 AF

- Fee amounts are estimated amounts and set annually by District Board of Trustees

CWP-Saratoga Springs Exhibit A Summary and Calculation

Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	CWP One Time Development Charge Removed from Reserved Status (AF)	Actual and Estimated Capital Recovery Portion of Annual Fee (per AF)	Actual and Estimated OM&R Portion of Annual Fee (per AF)	Actual and Estimated Future Annual Fee (As set annually by the District) (Fee Includes the OM&R and Capital Recovery Components (per AF)	Capital Prepayment No Discount (per AF)	Capital Prepayment with 2.5% Discount (per AF)	Cost per Discounted Typical Single Family = .45 AF = WFSU .40
2008-09	$5,850				$15,949	$12,827	$5,772
2009-10	$6,200				$16,299	$13,168	$5,926
2010-11	$7,000				$17,099	$13,949	$6,277
2011-12	$7,800				$17,899	$14,729	$6,628
2012-13	$8,400				$18,499	$15,314	$6,891
2013-14	$8,500				$18,599	$15,412	$6,935
2014-15	$9,100	$222	$169	$391	$19,199	$15,997	$7,199
2015-16	$9,370	$203	$205	$408	$19,247	$16,222	$7,300
2016-17	$9,600	$252	$175	$427	$19,274	$16,426	$7,391
2017-18	$9,840	$280	$166	$446	$19,262	$16,590	$7,466
2018-19	$10,090	$310	$156	$466	$19,232	$16,736	$7,531
2019-20	$10,340	$346	$141	$487	$19,172	$16,850	$7,582
2020-21	$10,600	$364	$145	$509	$19,086	$16,935	$7,621
2021-22	$10,870	$383	$149	$532	$18,992	$17,008	$7,654
2022-23	$11,140	$400	$156	$556	$18,879	$17,058	$7,676
2023-24	$11,420	$421	$160	$581	$18,759	$17,095	$7,693
2024-25	$11,720	$442	$165	$607	$18,638	$17,126	$7,707

APPENDIX F

Facility Asset Depreciation

City of Saratoga Springs Drinking Water Asset Depreciation

	Source	Name	Zone		Capacity/Size		Unit Cost	Asset Cost	Year Installed	Expected Useful Life (Years)	Remaining Useful Life (Years)	Depreciation
Water Source	Well No. 2	Vessel	1		1,020	gpm	$ 2,250	$ 2,295,000	2000	30	5	$ 76,500
	Well No. 3	145 North	1		1,750	gpm	$ 2,250	$ 3,937,500	2000	30	5	$ 131,250
	Well No. 4	Crossroads	1		1,000	gpm	$ 2,250	$ 2,250,000	2000	30	5	$ 75,000
	Well No. 6	Scuttlebutt	1		1,100	gpm	$ 2,250	$ 2,475,000	2000	30	5	$ 82,500
	Well No. 7	867 N 1110 E	1		900	gpm	$ 2,250	$ 2,025,000	2000	30	5	$ 67,500
Water Storage		Tank 1 (Landview)	1N		0.75	MG	$ 2,750,000	$ 2,062,500	2000	50	25	$ 41,250
		Tank 2 (Deer Canyon)	2S		1.00	MG	$ 2,750,000	$ 2,750,000	2000	50	25	$ 55,000
		Tank 3 (Harvest Moon)	2N		2.00	MG	$ 2,750,000	$ 5,500,000	2000	50	25	$ 110,000
		Tank 4 (Wildflower Zn 3)	3N		1.20	MG	$ 2,750,000	$ 3,300,000	2000	50	25	$ 66,000
		Tank 5 (Bluebell)	1N		3.00	MG	$ 2,750,000	$ 8,250,000	2000	50	25	$ 165,000
		Tank 6N (Israel Zn 2)	2S		3.00	MG	$ 2,750,000	$ 8,250,000	2000	50	25	$ 165,000
		Tank 7 (Fox Hollow Zn 3)	3S		2.00	MG	$ 2,750,000	$ 5,500,000	2000	50	25	$ 110,000
		Tank 9 (Banner Dr Zn 2)	2N		1.00	MG	$ 2,750,000	$ 2,750,000	2000	50	25	$ 55,000
		Tank 10 (Mt Saratoga Zn 3)	3N		1.40	MG	$ 2,750,000	$ 3,850,000	2000	50	25	$ 77,000
		Tank 11 (Wildflower Zn 4)	4N		0.75	MG	$ 2,750,000	$ 2,062,500	2000	50	25	$ 41,250
Pressurized Pipes		**PVC**										
		6"			5,608	LF	$ 175	$ 981,364	2000	75	50	$ 13,085
		8"			865,256	LF	$ 190	$ 164,398,658	2000	75	50	$ 2,191,982
		10"			73,974	LF	$ 230	$ 17,014,054	2000	75	50	$ 226,854
		12"			90,088	LF	$ 260	$ 23,422,807	2000	75	50	$ 312,304
		14"			4,932	LF	$ 290	$ 1,430,348	2000	75	50	$ 19,071
		16"			25,203	LF	$ 290	$ 7,308,896	2000	75	50	$ 97,452
		18"			8,550	LF	$ 335	$ 2,864,345	2000	75	50	$ 38,191
		20"			953	LF	$ 360	$ 343,152	2000	75	50	$ 4,575
		24"			772	LF	$ 435	$ 335,759	2000	75	50	$ 4,477
		30"			0	LF	$ 560	$ -	2000	75	50	$ -
		DI										
		6"			0	LF	$ 215	$ -	2000	100	75	$ -
		8"			217	LF	$ 230	$ 49,841	2000	100	75	$ 498
		10"			873	LF	$ 270	$ 235,833	2000	100	75	$ 2,358
		12"			73,902	LF	$ 300	$ 22,170,660	2000	100	75	$ 221,707
		14"			37,067	LF	$ 315	$ 11,676,260	2000	100	75	$ 116,763
		16"			16,213	LF	$ 330	$ 5,350,297	2000	100	75	$ 53,503
		18"			21,635	LF	$ 375	$ 8,113,296	2000	100	75	$ 81,133
		20"			20,499	LF	$ 400	$ 8,199,590	2000	100	75	$ 81,996
		24"			8,154	LF	$ 475	$ 3,872,938	2000	100	75	$ 38,729
		30"			2,994	LF	$ 600	$ 1,796,652	2000	100	75	$ 17,967
Pump Stations			From Zone	To Zone								
	2 x 2,500 gpm	BS 1 (Grandview)	1N	2S	2,500	gpm	$ 1,000	$ 2,500,000	2000	30	5	$ 83,333
	2 x 1,000 gpm	BS 5N (Harvest Hills)	1N	2N	1,000	gpm	$ 1,000	$ 1,000,000	2000	30	5	$ 33,333
	3 x 1,000 gpm	BS 5S (Crossroads Blvd)	1N	2N	2,000	gpm	$ 1,000	$ 2,000,000	2000	30	5	$ 66,667
	2 x 500 gpm	BS 3 (Harvest Moon)	2N	3N	1,250	gpm	$ 1,000	$ 1,250,000	2000	30	5	$ 41,667
	2 x 4,350 gpm	BS 2 (Deer Creek)	2S	3S	4,350	gpm	$ 1,000	$ 4,350,000	2000	30	5	$ 145,000
	3 x 600 gpm	BS 9 (Talus Ridge)	2N	3N	1,200	gpm	$ 1,000	$ 1,200,000	2000	30	5	$ 40,000
	3 x 400 gpm	BS 4 (Lucky Clover)	3N	4N	1,200	gpm	$ 1,000	$ 1,200,000	2000	30	5	$ 40,000

APPENDIX G

40 Year Water Rights Plan

MEMORANDUM

DATE: September 30, 2025

TO: Jeremy Lapin, P.E.
City Engineer and Public Works Director
City of Saratoga Springs
1307 N Commerce Drive
Saratoga Springs, UT 84045



FROM: Celinda F. Jensen, P.E.
Hansen, Allen & Luce, Inc. (HAL)
859 West So. Jordan Pkwy – Suite 200
South Jordan, Utah 84095

SUBJECT: City of Saratoga Springs 40-Year Plan

PROJECT NO.: 360.09.300 Water Rights Assistance

PURPOSE

The City of Saratoga Springs was incorporated in 1997 and has experienced rapid growth. Securing water resources has been a primary focus from the beginning. Continued growth depends on strategic planning for obtaining, managing, and protecting City water rights and resources.

The purpose of this memorandum is to satisfy the requirements of a 40-Year Plan as specified in Utah Code 73-1-4. Utah Code protects the City's water rights from forfeiture, provided the City can show the water will be needed for future use through the year 2065.

REQUIREMENTS OF A 40-YEAR PLAN

The reasonable future water requirement of the public is defined by statute as the amount of water needed in the next 40 years by the persons within the public water supplier's projected service area, based on anticipated population growth or other water use demand. To show this comparison, standards for a 40-Year Plan are specifically defined in Administrative Code Reference R655-18 as summarized below:

- The amount of physical water currently diverted and used in their water system;
- Description of the systems and sources of water;
- Projected future water requirements for the system.
- Comprehensive inventory list for water rights, shares in water companies, or any contracts or documents evidencing its right to receive water from other entities to use in the system.
- Explanation of how each specific water right, for which the 40-Year Plan is being submitted, is needed to meet the projected future water requirements of the system;

- Population projection within a Public Water Supplier's service area.
- Projected water use per capita and other water demand estimates based upon established engineering principles, actual water use data, or other reliable measures.

In the following sections and addressed in this memorandum for the City summarizes the water rights the City will need to sustain itself through at least the next 40 years.

WATER RIGHT DATA REFERENCE

Information on water rights listed in this report was obtained from the DWRi's database accessed through January 2025. Original documents on each water right such as memorandum decisions and certificates issued by the State Engineer, decrees, etc. are the controlling source of this summarized information and can be found in the scanned documents of the DWRi's website for each water right unless otherwise cited (DWRi, 2025).

PUBLIC WATER SUPPLIER

Physical Water Diverted

The City is a public water supplier. They own and operate separate drinking water and secondary pressurized irrigation (PI) water systems.

As a public water supplier, the City annually reports water diverted into its water systems to the Division of Water Rights (DWRi). Table 1 and Table 2 summarize the City's reported water use for the past five years for the drinking water system and their irrigation systems respectively.

TABLE 1
REPORTED DRINKING WATER USE (DWRI 2025)

Drinking Water Source Name	2020 (acre-feet)	2021 (acre-feet)	2022 (acre-feet)	2023 (acre-feet)	2024 (acre-feet)
Drinking Water Well #2	185.74	437.30	221.85	10.91	187.45
Drinking Water Well #3	1,000.20	827.60	556.25	747.14	614.64
Drinking Water Well #4	595.63	351.88	246.43	503.13	262.05
Drinking Water Well #6	494.58	598.78	520.03	521.14	144.37
Drinking Water Well #7	0.00	0.00	0.00	0.00	0.00
Drinking Water Well #8	0.00	0.00	0.00	0.00	0.00
Subtotal Wells	2,276.15	2,215.56	1,544.56	1,782.32	1,208.51
Purchased from CUWCD	1,275.53	984.25	2,111.82	2,111.40	2,937.9
Crossover to Irrigation	-1,209.53	-765.13	-1,121.54	-1,199.79	-1,043.48
Total:	**2,342.15**	**2,434.68**	**2,534.84**	**2,693.93**	**3,102.93**

Drinking Water System

The City diverts groundwater from wells on the east side of the Jordan River to supply its drinking water system. Drinking Water Wells #7 and #8 are drilled but not completed and have not provided water to the City's drinking water system in the past five years.

Drinking Water Well #1 was renamed Secondary Well #1 and is used today in the PI system. Water rights approved on this point of diversion may refer to the common name as Drinking Water Well #1 (HAL DW Master Plan, 2020).

The City is dedicated to maintaining and constructing new wells and supporting infrastructure to have the capacity necessary to deliver their portfolio of groundwater water rights at buildout.

The City also has a multi-year service agreement to purchase water from Central Utah Water Conservancy District (CWP Water). The amount of water required by the City increases each year up to 10,300 acre-feet.

For the past five years, as shown in Table 1, the City uses some of the water from its drinking water sources in its secondary water system. Drinking water usage has steadily increased in the past five years due to rapid development.

TABLE 2
REPORTED IRRIGATION WATER USE (DWRI 2025)

PI Source Name	2020 (acre-feet)	2021 (acre-feet)	2022 (acre-feet)	2023 (acre-feet)	2024 (acre-feet)
Marina Pump Station	1,543.96	1,042.67	1,468.56	1,107.33	1,353.88
Welby Jacob Pump Station	0.00	197.77	346.24	383.02	726.02
ULDC Pump Station	1,028.18	1,162.21	1,499.57	1,415.71	1,675.44
Crossover from Drinking Water Sources	1,209.53	765.13	1,121.54	1,199.79	1,043.48
Surface Water	3,781.67	3,167.78	4,435.91	4,105.85	4,798.82
Secondary Well #1	0.00	0.00	231.81	0.00	704.01
Secondary Well #2 (Sunrise)	613.79	535.86	258.19	396.96	340.36
Secondary Well #3 (Vinyard)	351.66	181.60	187.18	162.54	182.26
Secondary Well #4 (Mink)	403.36	162.54	265.81	926.32	265.33
Secondary Well #5 (Jacobs)	1,028.18	1,162.21	1,499.57	1,415.71	1,439.72
Groundwater	2,822.22	2,614.83	1,877.68	1,759.34	2,931.68
Total:	**6,603.89**	**5,782.61**	**6,313.59**	**5,865.19**	**7,730.5**

Pressurized Irrigation System

The City uses five wells and surface water sources in their PI system as shown in Table 2 as reported by the City to the DWRi. The City also uses water from their drinking water sources that cross over to the PI system.

Secondary Well #1 was used prior to 2020 in the drinking water system, but as of 2022 has been used solely as a source for the PI system. The secondary wells are located on the west side of the Jordan River except Secondary Well #1, which is located on the east side of the Jordan River near the City drinking water wells.

The City collects water in ponds and has pump stations adjacent to a Utah Lake Distributing Company (ULDC) canal and Welby Jacob Water Users Association (WJWUA) canal respectively. This water is pumped into the PI system. The Marina Pump Station on the north west side of Utah Lake pumps water directly from the Lake into the PI system.

Total Reported Use

The City reported its highest use of water on record last year, with **3,103 acre-feet** of water from the drinking water system and **7,731 acre-feet** from the PI system. The total use from both systems was **10,833 acre-feet** in 2024.

MUNICIPAL WATER RIGHTS

Groundwater

City groundwater rights are summarized in Table 3 from the full list of groundwater water rights found in Attachment A. Attachment A lists the groundwater rights recognized by the State Engineer for diversion from City well sources (DWRi, 2025).

In Table 3, water rights approved for diversion on a drinking water source are counted as drinking water rights in the subtotal of water rights. All water rights in Table 3 are approved for municipal use within the service area of the City.

The DWRi defines a perfected water right as, “a fully developed water right that has been certificated by the State Engineer, decreed by a court of law, or has been legislated as such.” Table 1 lists municipal groundwater water rights in the name of the City of Saratoga Springs that are recognized by the State Engineer as approved for municipal use from City wells as recorded by the Division of Water Rights, (DWRi, 2025).

TABLE 3
MUNICIPAL GROUNDWATER WATER RIGHTS SUMMARY
(DWRI, 2025)

Municipal Ground Water Rights	Water System	Quantity (acre-feet)
Perfected (Culinary Wells)	Drinking	3,660
Perfected (Secondary Wells)	PI	654
Perfected	**PI and Drinking**	**4,313**
Elections Recommended for Approval	Drinking	703
Perfected and Recommended Elections	**PI and Drinking**	**5,016**
Approved Change Application (Culinary Wells)	Drinking	4,393
Approved Change Application (Secondary Wells)	PI	1,010
Approved Change Applications	PI and Drinking	5,403
Subtotal (Culinary Wells)	Drinking	8,352

Municipal Ground Water Rights	Water System	Quantity (acre-feet)
Subtotal (Secondary Wells)	PI	1,664
TOTAL	**PI and Drinking**	**10,016**

Perfected
A Perfected water right is a fully developed water right that has been certificated by the State Engineer and decreed by a court of law. Water rights perfected for municipal use on City groundwater sources in Table 3 are separated out by those approved on drinking water sources and those approved only on secondary wells. The total diversion from perfected water rights is **4,313 acre-feet**.

Elections
During an active adjudication, an election can be filed in lieu of submitting proof on a change application. When an adjudication was opened in 2021 in the Lehi Subdivision, Area 55 Book 4, the City submitted elections on several water rights. The State has recommended to the State Engineer that the City can perfect the quantity of water shown in Table 3 as elections. The City has filed signed WUC claiming the elections for about 703 acre-feet of water on several water rights. When the Proposed Determination is published, the City anticipates a total of approximately **5,016 acre-feet** of perfected water rights.

Approved
Approved change applications for municipal use on active City sources make up most groundwater water rights approved on City wells. Table 3 summarizes how many water rights are approved on at least one drinking water source and water rights approved on secondary wells only. The total amount of groundwater water rights in approved change applications for municipal use on active City wells is about **5,403 acre-feet**, as listed in Table 3.

All Groundwater Water Rights
The City has a total of about **10,016 acre-feet** of water approved for diversion from City wells for municipal use in the service area of the City. This total includes water rights with approved change applications, perfected that are perfected, and water rights with recommended elections of water rights for municipal use. Most of these water rights, 8,352 acre-feet, can be used in the drinking water system.

Surface Water

The City has filed municipal change applications on all surface water rights listed in Attachment B. Table 4 is a summary of their surface water rights approved for municipal use. The water rights are approved for diversion at the Marina Pump Station on Utah Lake and the City's pump station adjacent to the Utah Lake Distributing Company (ULDC) canal known as the ULDC Pump Station. The City also has municipal water rights that can be diverted at the pump station off the Welby Jacob Water Users Association (WJWUA) canal known as the Welby Jacob Pump Station.

TABLE 4
MUNICIPAL SURFACE WATER RIGHTS SUMMARY
(DWRI, 2025)

Municipal Surface Water Rights	Water System	Depletion (acre-feet)	Diversion (acre-feet)
Marina Pump Station Only	PI	166	345
ULDC Pump Station	PI	2,208	4,150
Marina Pump Station	**PI**	**2,374**	**4,494**
Welby Jacob Pump Station	PI	258	547
TOTAL	**PI**	**2,632**	**5,041**

RELIABLE SUPPLY

For the City's well water rights, we assume additional infrastructure can be constructed as needed and the aquifer can deliver the City's portfolio of groundwater water rights. Table 3 shows the City has the right to divert 10,016 acre-feet per year from City wells.

It is understood that groundwater water rights in North Utah County are overallocated, it is possible that in the future, priority dates may be used to determine what water rights can be used. A study by HAL, used June 24, 1952, as a proposed cut-off date as an exercise to show how overallocated groundwater water rights may be managed in the future. Evaluating the City's well water rights with their base priority date, this would render some of their groundwater supply unavailable. This, however, was not considered in Table 5.

TABLE 5
ESTIMATED RELIABLE SUPPLY OF WATER RIGHTS

Water Rights/Shares	Reference	Approved Quantity (acre-feet)	Source	Reliable Supply Quantity (acre-feet)
Well Water Rights[1]	Table 3	10,016	Groundwater	10,016
Surface Water Rights	Table 4	5,041	Utah Lake & Jordan River	4,105
Deliverable CUP Water[2]	Attachment B	3,060	Central Utah Water (CUWCD)	3,060
Reserved CUP Water by Contract[3]	Attachment B	7,240	Central Utah Water (CUWCD)	7,240
			Total	**24,421**

[1]It is assumed that all groundwater water rights will be available for future use.

[2]Deliverable water purchased for the 2025-2026 season which started July 1, 2025 according to the 2009 and 2018 CUP and City Water Supply Agreements found in Attachment B.

[3]Reserved CUP water for the City according to the 2009 and 2018 CUP and City Water Supply Agreements found in Attachment B.

As shown in Table 4, the City has the right to divert 5,041 acre-feet from Utah Lake and the Jordan

River through approved surface water rights as recognized by the State Engineer. The depletion limit as specifically stated on each approved change application by the Order of the State Engineer is 52.2% as an average of depletion limits on approved surface change applications.

The City, however, is more efficient at using water in their secondary system than historical irrigation and returns a smaller percentage of the water to Utah Lake, thus depleting more than the historical use. To account for this, the City understands it must divert less than allowed on the water right to keep within their depletion allowance. It is estimated to be about 81.5% less, reducing the reliable supply in Table 5 for surface water rights to 4,105 acre-feet.

The result of considering reliable supply for the City's water right portfolio, reduces the amount of available water rights for well and surface sources to 10,514 acre-feet.

The City's agreements with Central Utah Water Conservancy District (CUWCD) dictate the amount of water available for the City to purchase and have delivered in their service area according to "Take Down and Delivery Schedules" found in Attachment B from agreements with CUWCD from 2009 and 2018. From the 2018 agreement, the City receives the annual delivery of 300 acre-feet of water. The 2009 contract includes incremental blocks of water available for purchase annually through 2045.

As of July 1st, 2025, the City purchased a cumulative annual volume of 2,760 acre-feet of deliverable water from the 2009 contract and 300 acre-feet from the 2018 contract for a total delivery in the 2025-2026 season of 3,060 acre-feet of water. In twenty years, the full allotment of 10,300 acre-feet of water is expected to be available.

REUSE WATER

Available Water For Reuse

The City along with other cities of northern Utah County that send their sewage effluent to Timpanogos Special Service District (TSSD), filed a Notice of Sewage Effluent to the Division of Water Rights. The City's Water Reuse Application NS039 (Reuse Application) was filed on September 25, 2023. The application is pending.

The City's Reuse Application to the State Engineer proposes a quantity of 13,717 acre-feet of water be allowed for reuse based on the City's water rights and diversion and depletion limits. The purpose of the Reuse Application is to augment the secondary irrigation water supply with a drought resistant water source.

If the City's reuse application is rejected, additional water from Utah Lake will need to be acquired to meet future water demand requirements.

FUTURE WATER REQUIREMENTS

40-Year Projected Demand

The reasonable future water requirement of the public is defined by the statute as the amount of water needed in the next 40 years by the persons within the public water supplier's projected service area based on projected population growth and other water use demands.

Population Projection

The population in the City has rapidly increased since incorporation in 1997. The first census data for the City reports a population of 1,003 from the 2000 census as illustrated in Figure 1. The U.S. Census in 2010 and 2020 showed the population increase of 17,781 to 39,085, a rate of increase of 119.8%, much greater than the rest of Utah County which during the same census years increased 28%. Figure 1 shows the historical and forecasted population from 2000 to 2065.

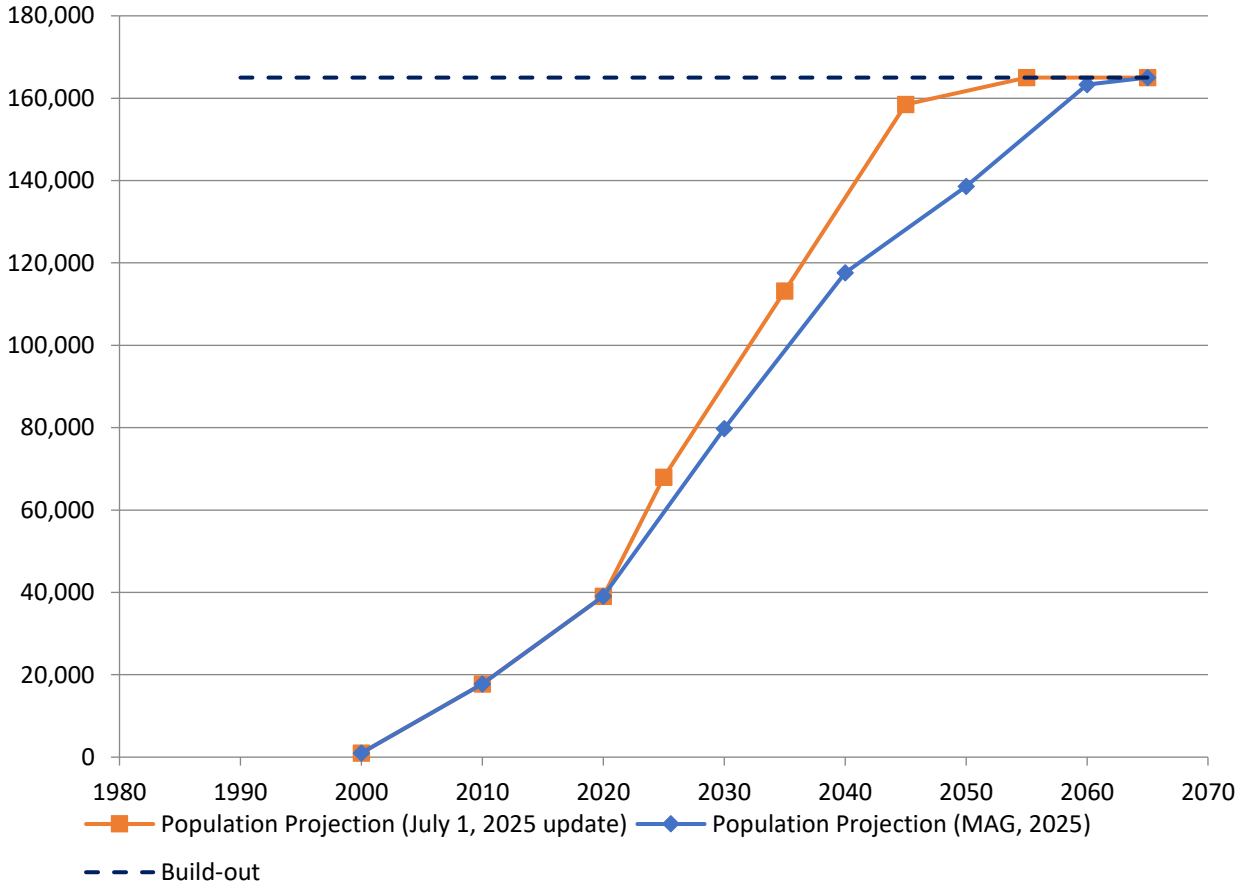


FIGURE 1 SARATOGA SPRINGS HISTORICAL AND PROJECTED POPULATION

According to the City's General Plan, the population is expected to continue its rapid growth in the future (General Plan, 2022). Mountainland Association of Governments (MAG) population projections were used to project population growth, with projections extended beyond 2050 based on previous growth rates (MAG, 2025). The MAG population projection was adjusted based on a household count on July 1, 2025 of 68,000 residents, exceeding the projected growth. Build-out population is estimated to be 165,000 based on the City's General Plan assumptions and is used

in Figure 1 as the cutoff for all projections. Although population projections are important for planning purposes, land-use changes, new development, regulatory changes, and City choices will ultimately serve as the trigger for when the City reaches build-out. The build-out population of 165,000 is based on the availability of drinking water.

Average Yearly Demand

Average yearly demand is the volume of water used during an entire year and is used to ensure the water rights can supply enough volume to meet demand under existing and future conditions. The City is in the process of updating their Master Plans for their drinking water and PI system. The average yearly future demand for the drinking water system and PI system were estimated based on build out conditions which is estimated to be reached prior to 2065.

Drinking Water System

The most recent Drinking Water Master Plan was prepared for the City in 2017 by HAL (HAL DW Master Plan, 2017). The City is in the process of updating their master plan for 2025. In these plans, future average yearly demand for the City was calculated by computing the demand from actual water use data with a level of service of 0.30 acre-feet/ERC, where ERC stands for Equivalent Residential Connections. This future demand is based on build-out conditions according to the current general plan which is assumed to be reached prior to the year 2065 for the 40 Year Plan. The break down of ERCs at build-out for residential, commercial, institutional, and industrial use, shown in Table 6, is also based on the City's General Plan adopted in 2022 (General Plan, 2022).

In future master plans for drinking water, the City plans to use the amount of water available for diversion on City water rights approved on drinking water wells along with the maximum contracted supply of CUP Water as build-out conditions. With this definition of build-out, Table 6 shows the number of ERCs and average annual demand for drinking water at build-out.

TABLE 6
FUTURE AVERAGE YEARLY DEMAND

Water System	Connections at Build-out (ERCs)	Irrigated Acres at Build-out	Level of Service	Average Yearly Demand (acre-feet)
Drinking Water	62,173 (48,705 Residential, 12,161 Commercial, 917 Institutional 390 Industrial)	N/A	0.30 acre-feet per ERC	18,652
PI System	N/A	7,500	3.2 acre-feet per acre	24,000

PI Water System

The future demand for the PI Water System was estimated in the PI Water System Master Plan completed in 2017 (HAL PI Master Plan 2017) and is being updated for 2025. Estimating 7,500 irrigated acres at build out conditions, and applying the future level of service of 3.2 acre-

feet/irrigated acre the average yearly demand per the City's level of service is projected to be 24,000 acre-feet as shown in Table 6.

This future demand is based on build-out conditions according to the current general plan and build-out is assumed to be reached prior to the year 2065 for the 40-Year Plan.

WATER SUPPLY VS. PROJECTED WATER DEMAND

The City expects to reach build-out prior to 2065. Growth over the coming decades will result in an increase in water demand. Based on a decision by the City, build-out is assumed to be reached when the availability of reliable drinking water for the City has been reached. Table 7 compares reliable supply of various City sources of water to projected demand.

In addition to the City as a whole, Table 7 shows the projected water requirements for both their drinking water and irrigation systems.

TABLE 7
WATER SUPPLY VS. PROJECTED WATER DEMAND

	Drinking Water System Volume (acre-feet)	Pressurized Irrigation System Volume (acre-feet)
Existing Water Rights[1]	8,352	6,705
Deliverable CUP Water[2]	3,060	0.0
Reserved CUP Water by Contract[3]	7,240	0.0
Subtotal	18,652	6,705
Reliable Water Supply[4]	18,652	5,769
Potential Reuse[5]	0.0	13,717
City Projected Water Demand	-18,652[6]	-24,000
Additional Source Needed:	**0.0**	**-4,514**

[1]Total approved quantity in acre-feet of well and surface water rights summarized in Table 3 and Table 4.
[2]Contracted deliverable water by CUWCD as shown in Appendix B as of the 2025-2026 season.
[3]Additional contracted CUP water to be available for purchase and delivery to the City by 2045.
[4]Amount of reliable water supply based on water rights and availability of source from Table 5.
[5]The City has a pending reuse application submitted to the DWRi which, if approved, would allow reuse of effluent from TSSD, not to exceed approved depletion limits on the City's water rights.
[6]In future Drinking Water Master Plans, the City plans to use the reliable water supply from water rights and contracted CUP Water as the build-out water demand for the future.

The City plans to use the amount of water available for diversion on City water rights approved on drinking water wells along with the maximum contracted supply of CUP Water as build-out conditions for the drinking water system. All CUWCD contract water is assumed to serve the drinking water system at build-out.

The City has a pending reuse application submitted to the DWRi which, if approved would allow

reuse of effluent from TSSD and supplement the City's secondary water supply with up to 13,717 acre-feet of water. The CUP water reserved by contract should become fully available by 2045.

As shown in Table 7, the PI system has insufficient water rights and sources to meet projected future demands at build-out. It is crucial that the City preserve and protect all existing City water rights to meet future demand for water. The contract for CUP Water is also essential for future drinking water needs. Understanding that additional water from CUWCD is not available, the City's plan is to continue to acquire water rights with development, for surface water to meet the projected future demand for the PI system. Reuse is also being pursued as a possible option for the City.

The City's plans to meet future water demand shown in Table 7 is directly affected by State legislation and policy decisions. It is recommended that the City continue to work with legislators and federal and state agencies to provide input and perspective to shape laws and policy that support the water resources the City is relying on to meet future demand. This includes but isn't limited to involvement with water reuse, contracted CUP water, and groundwater management plans.

This analysis does not include the potential scenario that one or more of the major water sources is rendered unusable. Individual water systems can be affected by terrorist activities, accidental chemical spills, forest fires, impacts involving direct water contamination or turbidity, water treatment plant failures, earthquakes, etc. The City should consider system interconnections, constructing redundant facilities, and other measures to provide backup supplies in emergency situations.

CONCLUSIONS AND RECOMMENDATIONS

The City has a clear need to protect its existing water rights and acquire additional access to water to meet anticipated demands through at least the next 40 years. To that end, HAL offers the following recommendations:

- Take all necessary actions to preserve existing water rights. Such actions include updating ownership records with the DWRi, filing change applications to establish municipal use in irrigation company shares, and filing proof of beneficial use or extension of time requests as dictated by Utah law.
- Consider exchanges, purchases, or other options to continue to acquire water rights.
- Continue to file change applications to convert shares in irrigation companies acquired by the City to municipal use.
- Prepare Proof of Beneficial Use applications to submit to the DWRi for as many rights as possible without exceeding the City's record of use.
- Continue to support efforts for reuse of sewer effluent, fulfillment of contracts for CUP water distribution, and groundwater management plans that consider City water assets.

The City can submit this report to the DWRi when required to show reasonable future water requirements and a 40-Year Plan. When submitting a 40-Year Plan, regulation states, each part of the Plan must be up-to-date and current.

The report becomes the water rights action plan going forward, and it is important that the City track actionable changes to their water rights, sources, etc., so that the 40-Year Plan can be easily

updated as actions are implemented, or a supplement to the plan prepared, for future required submission. The 40-Year Plan becomes the water asset road map for the City as it pertains to water rights and water supply.

REFERENCES

City of Saratoga Springs Drinking Water Master Plan and Capital Facility Plan, prepared by Hansen, Allen & Luce. Adopted in 2017. (HAL DW Master Plan, 2017)

City of Saratoga Springs Secondary Water Master Plan and Capital Facility Plan, prepared by Hansen, Allen & Luce. Project 360.07.400. Adopted in 2017. (HAL PI Master Plan, 2017)

DWRi (Utah Division of Water Rights). 2025. Water Rights Database. Accessed July 2025. https://waterrights.utah.gov/search/ (DWRi, 2025)

Mountainland Association of Governments (MAG). 2025. Data Population of Governments. https://magutah.gov/mag-population-projections/ (MAG, 2025)

Saratoga Springs General Plan Update 2022-2042. Making It Better Together. Adopted September 6, 2022. (General Plan, 2022) https://www.saratogasprings-ut.gov/196/General-Master-Plans

ATTACHMENT A – MUNICIPAL WATER RIGHTS

CITY OF SARATOGA SPRINGS MUNICIPAL GROUNDWATER WATER RIGHTS (DWRI, 2025)

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
54-1226	Certificated	SHAR – NJIC	1853	294.12	132.940	C & S
54-1086	Certificated	SHAR - USLCC	1870	201.96	85.630	C & S
54-1227	Certificated	SHAR - USLCC	1870	82.62	37.340	C & S
54-1223	Certificated	SHAR - USLCC	1870	330.48	149.400	C & S
54-1214	Certificated	SHAR - USLCC	1870	142.29	64.315	C & S
54-1360	Certificated	SHAR - USLCC	1870	64.26	29.046	C & S
55-9343	Certificated	SHAR - EJIC	1877	401.72	170.330	C & S
54-1088	Certificated	SHAR - EJIC	1877	15.488	10.938	C & S
54-1204	Certificated	SHAR - EJIC	1877	62.92	26.678	C & S
54-1203	Certificated	SHAR - EJIC	1877	62.92	26.678	C & S
54-1212	Certificated	SHAR - EJIC	1877	579.59	261.945	C & S
55-9726	Certificated	SHAR - ULDC	1908	246.00	104.300	C & S
55-11899	Certificated	SHAR - ULDC	1908	270.81	114.810	C & S
55-11913	Certificated	SHAR - ULDC	1908	235.06	99.670	C & S
54-1141	Certificated	SHAR – ULDC	1908	444.57	188.500	C & S
54-1195	Certificated	SHAR - ULDC	1908	224.84	101.630	C & S
Perfected (Culinary Wells) - Subtotal				3,659.648	1,604.15	
54-1134	Certificated	SHAR – SJCC	1870/2004	69.16	29.320	S
54-1085	Certificated	SHAR - USLCC	1870/2007	270.81	114.82	S
54-1136	Certificated	SHAR - EJIC	1877/2004	58.08	30.780	S
55-11924	Certificated	SHAR - ULDC	1908/2003	255.5	108.332	S
Perfected (Secondary Wells Only) - Subtotal				653.55	283.252	
Perfected Water Rights				4,313.20	1,887.402	
55-963	Election	A31503	1959	3.25	2.89	C
55-542 55-9680	Election	A21900 U11123	1899	67.36	38.546	C & S
55-2905	Election	U11123	1899	16.00	9.040	C & S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
55-9727	Election	A29064	1957	30.882	17.448	C & S
55-695 55-860 55-2433 55-2820 55-2821 55-3303 55-3304 55-3541	Election	A26026 A29311 U6867 U11013 U11014 U13549 U13550 U16970	1954 1957 1936 1936 1890 1895 1895 1895	203.384	119.875	C & S
55-1849 55-2398 55-4016	Election	U2650 U6484 U21583	1910 1910 1900	150.12	85.3	C & S
55-2799	Election	U10992	1906	15.952	9.159	C & S
55-3556	Election	U17027	1905	2.94	2.84	C & S
55-2913 55-3667 55-6488	Election	U11131 U17594 A54380	1919 1900 1980	44.47	27.216	C & S
55-9250 55-9229	Election	U4955 A57606	1905 1994	3.996	2.240	C & S
55-2907 55-6091 55-8193 55-12957	Election	U11125 U22900 A65256 U11130	1899 1934 1991 1899	94.794	55.075	C & S
55-12896 55-12898	Election	A23522 U4935	1894 1952	28.458	16.292	C & S
55-12918	Election	A31728	1905	6.79	3.836	C & S
55-11977	Election	U11123	1899	7.000	3.955	C & S
55-13151	Election	A23276	1951	16.315	9.355	C & S
55-2807	Election	U11000	1890	8.940	6.330	C & S
55-6613	Election	A55941	1981	1.898	1.103	C & S
Recommended Elections (Culinary wells) - Subtotal				702.55	410.5	
Perfected and Recommended Elections - Subtotal				5,015.75	2,297.902	
55-9572	a48409	SHAR – ULDC	1908/2022	638.75	288.720	C & S
55-9582	a26478	SHAR – EJIC	1877/2002	101.64	43.100	C & S
54-863 54-864 54-865 54-866 54-867 54-868	a29654	A26748b	1955/2004	187.91	99.589	C & S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
54-869 54-870 54-871 54-872 54-873 54-874 54-875 54-876 54-877 54-878 54-879 54-880 54-881 54-882 54-916 54-917 54-918 54-975 54-976 54-977 54-978						
54-39 54-68 54-100 54-102 54-126 54-127 54-1097 54-1098 55-2242 55-3828 55-11969	a28929	A23385 A33356 U6139 U8360 U11068 U11071 A33112 A37227 U5029 U19680 U13562	1952/2004 1976/2004 1932/2004 1934/2004 1930/2004 1930/2004 1961/2004 1965/2004 1899/2004 1909/2004 1917/2004	107.849	82.855	C & S
51-8050	a36936	Decree	1889/2010	50	28.250	C & S
53-1686	a36127	A33374b	1961/2009	450	237.656	C & S
54-623	a36309	A26748	1955/2010	239.25	135.180	C & S
57-10880	a45314	SHAR - EJIC	1877/2019	231.06	107.892	C & S
55-243 55-373	a45861	A15823 A18488	1944/2020 1947/2020	18.280	10.450	C & S
55-1975 55-1974 55-2436 55-3783	a45904	U3231 U3230 U6878 U19055	1901/2020 1899/2020 1900/2020 1910/2020	74.072	42.752	C & S
55-13261	a46561	D2236	1870/2021	100.000	56.500	C & S
55-13267	a46602	U13560	1890/2021	9.000	5.085	C & S
54-364	a47572	A43033	1973/2021	2.000	1.130	C & S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
55-9488	a47578	SHAR - WJWUC	1877/2021	384	173.570	C & S
55-9490	a47579	SHAR - EJIC	1877/2021	48.4	21.880	C & S
55-13310 55-13312 55-13313 55-13314	a49246	A29311 U6867 U11013 U11014	1957/2022 1910/2022 1890/2022 1890/2022	66.242	37.311	C & S
55-11959	a48410	SHAR - ULDC	1908/2022	71.54	32.34	C & S
55-8950	a18982	SHAR - WJWUC, EJIC	1877/1995	394.4	167.36	C & S
55-8873	a19096	SHAR – HCFF, SJCC	1870/1995	420	225.75	C
55-1961	a22239	U3199	1895/1998	393.3	209.07	C & S
55-8999	a50345	A69304	1995/2023	1.87	1.075	C & S
Approved Water Rights (Culinary wells) – Subtotal				4,392.553	2,007.515	
54-887 54-888 54-889 54-890 54-891 54-892 54-893 54-894 54-895 54-896 54-897 54-903 54-905 54-906 54-907 54-908 54-909 54-910 54-912 54-915	a31062	A26748b	1955/2006	161.8556	82.626	S
54-904	a31944	A26748b	1955/2006	1.078	0.588	S
54-622	a33123	A26748b	1955/2007	282.83	159.800	S
55-3117	a28772	U12177	1910/2007	31	27.580	S
54-1278	a37898	A26748b	1955/2012	42.187	22.433	S
54-1209	a43672	A26748b	1955/2018	5.9594	3.367	S
54-1347	a47553	A2136a	1908/2021	80.38	36.330	S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
54-301	a47571	A42442	1977/2021	2.178	1.383	S
55-9693	a26962	SHAR - ULDC	1908/2002	402.99	170.830	S
Approved Water Rights (Secondary Only) - Subtotal				1,010.46	504.937	S
Groundwater Water Rights (Culinary wells)				8,351.76	3,611.3	C & S
Total Groundwater Water Rights				10,015.77	4,399.489	

[1] Certificated means the water right is perfected for municipal use. Approved means a change application for municipal use has been approved. Election means the right has been recommended to the State Engineer to be perfected.
[2]SHAR – Share Statement on canal company shares for the following companies:
USLCC-Utah and Salt Lake Canal Company,
WJWUC - Welby Jacob Water Users Company
EJIC-East Jordan Irrigation Company,
SJCC - South Jordan Canal Company
ULDC-Utah Lake Distributing Company
[3]Well Source “C” refers to Culinary Wells and “S” refers to Secondary Wells.

CITY OF SARATOGA SPRINGS MUNICIPAL SURFACE WATER RIGHTS
(DWRI, 2025)

Water Right Number	Change Application Number	Basis[1]	Base/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Source[2]
57-10462	a50755	SHAR – EJIC	1877/2023	43.56	19.69	MPS
57-10703	a43884	SHAR - EJIC	1977/2018	113.74	51.410	MPS
55-2060 55-12783	a43438	D1450 D1450	1965/2018	81.636	47.013	MPS
51-8622 59-5926	a50898	SHAR - USLCC	1870/2023	105.57	47.72	MPS
Marina Pump Station - Subtotal				344.506	165.833	MPS
59-6034	a47641	SHAR - ULDC	1908/2021	766.500	346.460	MPS & ULDC
59-5923	a42686	SHAR - ULDC	1908/2017	605.32	341.840	MPS & ULDC
59-5961	a43584	SHAR - ULDC	1908/2018	98.16	55.430	MPS & ULDC
59-5982	a44302	SHAR - ULDC	1908/2019	102.250	57.743	MPS & ULDC
59-5991	a45243	SHAR - ULDC	1908/2019	73.584	41.575	MPS & ULDC
59-5990	a45242	SHAR - ULDC	1908/2019	2064.440	1166.409	MPS & ULDC
55-11962	a46500	SHAR - ULDC	1908/2021	275.940	124.725	MPS & ULDC
59-6012	a46502	SHAR - ULDC	1908/2020	30.66	13.860	MPS & ULDC
59-6035	a48426	SHAR - ULDC	1908/2022	35.77	16.17	MPS & ULDC
59-6054	a50260	SHAR - ULDC	1908/2023	51.1	23.10	MPS & ULDC
59-6077	a45252	SHAR - ULDC	1908/2024	45.90	20.66	MPS & ULDC
Marina Pump Station and ULDC Canal- Subtotal				4,149.624	2,207.972	MPS & ULDC
59-5994	a45311	SHAR - WJWUC	1853-1908/2019	96.0	43.392	WJWUA
59-5949	a44383	SHAR – WJWUC	2017/2019	107	60.455	WJWUA
59-6022	a47554	SHAR – WJWUC	1853-1908/2021	3.000	1.356	WJWUA
59-6028	a47855	SHAR – WJWUC	1853-1908/2021	45.000	20.340	WJWUA
59-6036	a47857	SHAR – WJWUC	1853-1908/2021	7.000	3.164	WJWUA

Water Right Number	Change Application Number	Basis[1]	Base/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Source[2]
59-6062	a49996	SHAR – WJWUC	1877/2023	50	21.22	WJWUA
59-6038	a49232	SHAR – WJWUC	1877/2022	239	108.03	WJWUA
WJWUA Pond - Subtotal				547	257.957	WJWUA
			TOTAL	5,041.13	2,631.762	

[1] SHAR – Share Statement on canal company shares for the following companies:
USLCC-Utah and Salt Lake Canal Company,
WJWUC - Welby Jacob Water Users Company
EJIC-East Jordan Irrigation Company,
SJCC - South Jordan Canal Company
ULDC-Utah Lake Distributing Company

[2]Source “MPS” refers to the Marina Pump Station, “ULDC” refers to the ULDC Pond, “WJWUA” refers to the Welby Jacob Pond.

ATTACHMENT B – CUWCD AGREEMENT FOR WATER DELIVERY

WATER SUPPLY AGREEMENT BETWEEN CENTRAL UTAH WATER CONSERVANCY DISTRICT AND THE CITY OF SARATOGA SPRINGS FOR SALE OF CWP MUNICIPAL AND INDUSTRIAL WATER

This Water Supply Agreement ("Agreement") is made as of this 25th of November, 2009, by and between the Central Utah Water Conservancy District, a water conservancy district organized under the laws of the State of Utah ("District"), and The City of Saratoga Springs, a municipal corporation ("Purchaser"). The District and the Purchaser are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. The District is organized and exists pursuant to the Utah Water Conservancy Act, Utah Code Annotated §17B-2a-1001, et seq., and those provisions of §17B-1-101, et seq., applicable to all local districts, both sections as amended (collectively, the "Act"), for the purpose, among others, of making water available to contract holders residing within its boundaries and of entering into agreements with water users for the purchase and sale of water and its delivery.

B. The Purchaser is a water user organized under the laws of the State of Utah that utilizes and/or provides water service to its customers within its boundaries, and which desires to purchase an additional supply of municipal and industrial ("M&I") water from the District.

C. The District shall design, construct, operate, maintain, repair and replace the Central Utah Water Conservancy District Water Development Project ("CWP"), and has developed and obtained and will develop and obtain sources of water supply for sale and delivery to contract purchasers through the CWP.

D. The Parties enter into this Agreement to set forth the terms and conditions pursuant to which CWP water may be reserved by, purchased by and delivered to the Purchaser at the point or points designated herein, for sale and distribution by the Purchaser to meet a portion of the needs of its customers.

NOW, THEREFORE, IN CONSIDERATION of the foregoing recitals, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

TERMS

1. **Sale and Purchase of CWP Water**

(a) The District hereby agrees to sell and the Purchaser hereby agrees to purchase annually, or in any event pay for as described herein, Ten Thousand (10,000) acre-feet of M&I water developed from the CWP ("Purchased Water"), consisting of Ten Thousand (10,000) acre-feet of Deliverable Water, as defined in Paragraph 2(b)(1)(B) below, delivered using CWP or District operated infrastructure ("CWP Infrastructure Water") and Zero (0) acre-feet of Deliverable Water delivered to Purchaser by means other than CWP or District operated infrastructure ("CWP Non-Infrastructure Water").

(b) Subject to the terms and conditions of this Agreement, the Purchased Water shall be reserved and made available by the District to the Purchaser in accordance with the Take-down Schedule attached as Exhibit "A" hereto. The Deliverable Water shall then be delivered to the Purchaser at the specified point or points of delivery, and within the maximum daily flow rates ("Contract Capacity") set forth on the Delivery Schedule attached as Exhibit "B" hereto. The Parties hereby understand and acknowledge that in establishing the Contract Capacity, the District must

consider both the capacity of the available CWP water supply and the capacity of the available CWP infrastructure, including the capacity of all available reservoirs, wells, treatment plants, transmission lines, meters and meter stations, and pumps and pump stations within the CWP system (collectively, the "CWP System Capacity").

(c) The District and the Purchaser agree and understand that the sale of Purchased Water under this Agreement is under terms and conditions that are the same for similarly situated customers entering into CWP water supply agreements during the period July 1, 2009 through September 30, 2009 (said grouping of water supply agreements being referred to for purpose of identification as "CWP FY2010 A").

(d) In the event the District shall enter into any CWP supply agreement(s) having a pricing structure or terms of sale more favorable to the purchaser therein than those set forth in Paragraph 2 below, the Parties agree that this Agreement shall be amended so as to apply the same pricing structure or terms of sale herein.

2. **Sales Price of Purchased Water**

(a) General.

(1) CWP water is sold and delivered pursuant to a pricing structure containing the following four components: (i) a One-time Development Charge; (ii) an Annual Reservation Fee, (iii) an Annual Water Fee, and (iv) an Annual Service Fee, all as described in Paragraph 2(b) below. (The One-time Development Charge, the Annual Reservation Fee, the Annual Water Fee and the Annual Service Fee are sometimes referred to herein collectively as the "CWP Fees").

(2) Factors that will influence the amount for each of the four components of the pricing structure may include: (i) whether a purchaser uses or does not use any of the District's

infrastructure; and (ii) the grouping, by year, of water purchase agreements for CWP water. At the sole discretion of the District, the cost of some of the four components of the pricing structure may be zero based on the factors described above.

(3) The CWP Fees set forth herein are imposed for the sole purpose of developing and providing the CWP water supply and providing the infrastructure necessary to deliver the Purchased Water to the Purchaser and other water users and customer agencies that enter into similarly situated and dated CWP water supply agreements. CWP Fees will not include District costs from projects not directly related to the CWP. The District shall treat all CWP water purchasers, similarly situated within water sales agreements grouped according to the effective dates of said agreements as may be determined by the District, in an equal, fair and non-discriminatory manner.

(4) CWP Fees under this Agreement shall be due and payable by the Purchaser, as provided herein, regardless of whether the Purchaser calls for or uses any of the Purchased Water in any given year, subject to annual adjustment as provided in Paragraph 7 herein. Notwithstanding the foregoing, in the unlikely event the CWP infrastructure is not capable of delivering Purchased water to Purchaser in the fiscal year first set forth in the Take Down Schedule, Exhibit "A" hereto, the obligation of the Purchaser to pay the One-time Development Charge and the Reservation Fee shall be suspended, the volume of water scheduled to be removed from reserved status and become Deliverable Water, as defined in Paragraph 2(b)(1)(B), in that fiscal year shall be set back and added onto the next succeeding year, until Purchased water is available for delivery, at which time payment of the One-time Development Charge, as provided herein, shall be due for the fiscal year in which Purchased Water first becomes Deliverable Water and for each fiscal year added on thereto.

(5) Notwithstanding any provision herein to the contrary with regard to payment of

CWP Fees, the Purchaser may request in writing that it be authorized to pre-pay, in whole or in part, any one or all of the CWP Fees due and owing hereunder. The pre-payment request shall be analyzed on a case-by-case basis, and be authorized at the sole discretion of the District, subject to such terms and conditions as the District shall determine at the time. The District's authorization to pre-pay and the terms and conditions of pre-payment shall be set forth in a separate written agreement to be executed between the District and the Purchaser.

(b) CWP Pricing Structure. The pricing structure for the CWP FY2010 A water supply agreements is as follows:

(1) One-time Development Charge.

(A) The District must recover from all purchasers that enter into water supply agreements the costs of the District to develop the CWP, including the acquisition and development of the CWP water supply and the planning, design and construction of the CWP infrastructure ("CWP Development Cost"). The One-time Development Charge is charged on a per acre-foot basis as provided in Paragraph 2(c) below, and covers the majority of the Purchaser's proportionate share of the CWP Development Cost. The One-time Development Charge is fixed by this Agreement and not subject to change for CWP water reserved under this Agreement.

(B) The One-time Development Charge is paid one-time only by the Purchaser for the total volume of Purchased Water, and is due and payable on June 1 prior to the fiscal year Purchased Water is removed from reserved status as provided in Paragraph 2(b)(2)(A) below and made available to the Purchaser for delivery each year ("Deliverable Water") in accordance with the Take-down Schedule, Exhibit A.

(C) The One-time Development Charge for the CWP Infrastructure Water

reserved for Purchaser hereunder is fixed during the term of this Agreement in the amount set forth in the table under Paragraph 2 (c)(1).

(2) Annual Reservation Fee.

(A) The Annual Reservation Fee applies to Purchased Water held in reserve status for the Purchaser pursuant to the provisions of Paragraph 4 ("Reserved Water"), and is imposed inasmuch as the CWP Development Cost must be paid by the District regardless of whether the Purchaser takes delivery of Purchased Water or not. The Annual Reservation Fee is charged on a per acre-foot basis as provided in Paragraph 2(b) below and covers an additional portion of the Purchaser's proportionate share of the CWP Development Cost during the period the Purchased Water remains in reserved status. As Purchased Water is removed from its reserved status and becomes Deliverable Water pursuant to the Take-down Schedule, Exhibit A, the District will no longer impose an Annual Reservation Fee on said water. The Purchaser will then pay the One-time Development Charge on the Deliverable Water as provided in Paragraph 2(b)(1) and commence payment of the Annual Water Fee as provided in Paragraph 2(b)(3) and the Annual Service Fee as provided in Paragraph 2(b)(4). The District will continue to impose the Annual Reservation Fee on any and all Purchased Water that remains in Reserved Water status for the Purchaser.

(B) The Annual Reservation Fee is charged on a per acre-foot basis for each acre-foot of Purchased Water held in reserved status for the Purchaser pursuant to Paragraph 4 as of December 31st of the preceding calendar year, and is due and payable annually on or before February 15th of the current year.

(C) The Annual Reservation Fee for the CWP Infrastructure Water reserved for Purchaser hereunder is fixed during the term of this Agreement in the amount set forth in the table

under Paragraph 2(c)(1).

(3) Annual Water Fee.

(A) The Annual Water Fee is charged on a per acre-foot basis as provided in Paragraph 2(c) below and is imposed to cover costs associated with the operation, maintenance, repair and replacement ("O&M") of the CWP infrastructure, to fund O&M reserves for the CWP, to pay the remaining portion of the Purchaser's proportionate share of the CWP Development Cost not covered by the One-time Development Charge and the Annual Reservation Fee (proportionate share for this purpose being defined as Purchaser's total volume of CWP Infrastructure Water under this Agreement divided by the total capacity of the CWP attributable to CWP Infrastructure Water, estimated by the Parties as of the date hereof to be 53,312 acre-feet, averaged over a five-year rolling period), and to cover other related costs of the District pertaining solely to the CWP infrastructure.

(B) In payment of the Annual Water Fee, the Purchaser will only pay that amount attributed to a proportionate share of costs incurred for O&M, to fund the O&M Reserve and other related costs pertaining to CWP infrastructure, apportioned to the Purchaser based upon the annual cumulative volume of Deliverable Water, in acre-feet.

(C) The initial amount of the Annual Water Fee for the CWP Infrastructure Water reserved for Purchaser hereunder is set forth in the table under Paragraph 2 (c)(1). Payment shall be made in conformance with the following:

(i) The District will invoice the Purchaser for the Annual Water Fee commencing the end of the month following the payment of the One-time Development Charge.

(ii) Subject to the provisions of Paragraph 2(b)(3)(D) below, the Annual Water Fee is payable by the Purchaser on a monthly basis within 30 days of the date of the

District's invoice for actual water deliveries made in months prior to the date of the invoice.

(iii) Subject to the provisions of Paragraph 7 below, the Annual Water Fee is to be paid by the Purchaser as provided herein regardless of whether the Purchaser calls for or uses any of the Deliverable Water in any given year. In the event the amount paid by the Purchaser under invoices for actual water delivered in conformance with Paragraph 2(b)(3)(C)(ii) is less than the total Annual Water Fee due hereunder, the remaining balance shall be invoiced by the District in the June billing each fiscal year.

(D) Notwithstanding the provisions of Paragraph 2(b)(3)(C) above, the Purchaser, at its option, may give written notice to the District that it desires to capitalize the Annual Water Fee. The District is willing to accept an up-front capitalized payment ("Capitalized Annual Water Fee"), for a period of not to exceed five years ("Capitalization Period"), under terms and conditions established by the District in its sole discretion, subject to the following:

(i) Upon receipt of notice from the Purchaser, the District will calculate the total estimated amount of the Capitalized Annual Water Fee to be due and payable over the Capitalization Period commencing the date Deliverable Water becomes available to the Purchaser. The District will thereupon notify the Purchaser, in writing, of the amount of the Capitalized Annual Water Fee to be charged, which shall be due and payable by the Purchaser within thirty (30) days from the date it receives said notice.

(ii) Within sixty (60) days of the end of the Capitalization Period, the District shall reconcile with the Purchaser the difference between the Capitalized Annual Water Fee paid by the Purchaser and the actual amount that would have been paid had the Purchaser paid the Annual Water Fee on an annual basis. If the Capitalized Annual Water Fee paid by the Purchaser is

higher than the actual annual payments would have been pursuant to Paragraph 2(b)(3)(C), the District shall credit the difference to the Purchaser against future Annual Water Fees payable by the Purchaser as determined by the District . If the Capitalized Annual Water Fee paid by the Purchaser is lower than the actual annual payments would have been pursuant to Paragraph 2(b)(3)(C), the Purchaser shall pay the difference to the District within ninety (90) days from the end of the Capitalization Period.

(4) Annual Service Fee.

(A) The Annual Service Fee is charged on a per acre-foot basis as provided in Paragraph 2(c) below and is imposed to cover a portion of the District's CWP administrative costs and expenses.

(B) The Annual Service Fee is due and payable annually on or before February 15th of the current year for the annual cumulative volume, in acre-feet, of Deliverable Water pursuant to this Agreement as of December 31st of the preceding year. The Annual Service Fee will be due and payable regardless of whether the Purchaser calls for or uses any of the Deliverable Water in any given year.

(C) The initial amount of the Annual Service Fee for the CWP Infrastructure Water reserved for Purchaser hereunder is fixed during the term of this Agreement in the amount set forth in the table under Paragraph 2 (c)(1).

(c) Pricing Structure Applicable to the Purchaser Hereunder.

(1) The pricing structure for the CWP 2010A water supply agreements is as follows:

(A) For CWP Infrastructure Water Delivered to the Point(s) of Delivery Identified in Exhibit B:

Price Component	Price per acre-foot
(i) One-time Development Charge	$6,200

(ii)	Annual Reservation Fee	$ 0
(iii)	Annual Water Fee	$ 314**
(iv)	Annual Service Fee	$ 0

** Subject to change. The amount to be charged under the Annual Water Fee is anticipated to fluctuate based upon the District's actual costs, and as such, the amount to be charged for the Annual Water Fee will be set annually by the District.

(B) For CWP Non-Infrastructure Water Delivered to the Point(s) of Delivery Identified in Exhibit B:

Price Component		Price per acre-foot
(i)	One-time Development Charge	$5,000
(ii)	Annual Reservation Fee	$ 0
(iii)	Annual Water Fee	$ 0
(iv)	Annual Service Fee	$ 20**

** Subject to change. The amount to be charged under the Annual Service Fee is anticipated to fluctuate based upon the District's actual costs, and as such, the amount to be charged for the Annual Service Fee will be set annually by the District.

(2) Interest on Delinquent Accounts. Any CWP Fee that remains unpaid after it shall have become due and payable as provided herein shall be subject to simple interest at the rate of one and one-half percent (1.5%) of the delinquent amount per month. Interest will begin to accrue from the date of delinquency and will continue to accrue until such time as the delinquent CWP Fees and all accrued interest have been paid in full; provided, however, that no interest shall be charged to or paid by the Purchaser unless such delinquency continues for more than thirty (30) days or more beyond the date of delinquency.

3. **Quality of Water Delivered**

CWP culinary water shall be delivered to the Purchaser in conformance with standards for public drinking water set by applicable law and regulation, including the Utah Division of Drinking

Water and/or the Utah Drinking Water Board of the Department of Environmental Quality; provided, however, that the District shall not be liable, or otherwise in breach of this Agreement, for failure to meet those standards unless the failure is due to the District's willful misconduct or gross negligence. The District and Purchaser agree that the CWP water sources will be Provo River water, high quality deep groundwater from a well field in or near Vineyard, Utah, or other sources of comparable quality. Deliveries from any other sources shall be of comparable quality.

4. **Reservation of Water**

(a) The District shall hold Purchased Water in reserve for the Purchaser pursuant to the Take-down Schedule, Exhibit A. Purchased Water must be removed from Reserved Water status based on said schedule. As Reserved Water is removed from reserved status, payments will be required for each acre-foot of Deliverable Water as set forth in Paragraph 2.

(b) The Purchaser may conclude that it has reserved more Purchased Water than it will eventually require. The District may consider an application from the Purchaser to transfer or otherwise reduce all or a portion of the amount of CWP water contracted for hereunder; however, the District will not approve the application unless and until another water user in North Utah County or Salt Lake County ("Replacement Purchaser") applies for a new contract, in an equal or greater quantity, to simultaneously replace the reduction hereunder. In such event, the District may approve such a replacement transaction, on the basis of the same terms or on differing terms, in the best interest of the District at its sole discretion. The District agrees, however, that it will not unreasonably deny Purchaser's application for or alter the terms of the replacement transaction under a new contract. The limitations and conditions that shall apply, however, to such a replacement transaction include the following:

(1) A reduction in contract volume to be taken down by Purchaser and/or the timing thereof, as set forth in Exhibit A, hereto must include a corresponding, proportional reduction in Contract Capacity under Exhibit B hereto.

(2) The reduction of contract volume and/or the timing thereof under Exhibit A hereto is limited to the corresponding amount and/or timing of the new or increased contract volume of the Replacement Purchaser.

(3) The reduction of Contract Capacity under Exhibit B hereto must be at least as great as the Contract Capacity increase of the new or increased contract of the Replacement Purchaser, except for variations in maximum daily delivery as between the Purchaser and the Replacement Purchaser.

(c) At the Purchaser's request, and provided that the District has developed the required CWP System Capacity:

(1) Purchased Water may become deliverable to the Purchaser on a year-to-year basis according to an accelerated schedule from that shown in Exhibit A, subject to terms and conditions mutually agreed to in writing by the Parties, or

(2) Purchased Water may become deliverable on a permanent basis according to an accelerated schedule from that shown in Exhibit A pursuant to the terms and conditions set forth in this Agreement;

(d) In the event of a reduction in the take-down as a result of a reduction or transfer of Purchased Water by the Purchaser as provided in subparagraph 4 (b) above, or an acceleration in the delivery of the Purchased Water as provided in subparagraph 4 (c) above, the applicable CWP Fees due and payable by the Purchaser to the District as provided in Paragraph 2 shall be correspondingly

accelerated or reduced as the case may be, as determined in the sole discretion of the District in conformance with the provisions of Paragraph 2(b).

5. **Point of Delivery**

(a) The District will deliver the Purchased Water to the Purchaser in conformance with the following:

(1) For CWP Infrastructure Water: CWP Infrastructure Water will be measured and delivered to the Purchaser only at the point or points of delivery identified in Exhibit B. The infrastructure to be constructed by the District for the purpose of delivering CWP Infrastructure Water from its main transmission lines at said point(s) of delivery include a vault, valve(s), meter(s), piping and related facilities and equipment ("Delivery Infrastructure"), as determined to be necessary by the District to deliver and measure the CWP Infrastructure Water at said point(s). The Delivery Infrastructure will be constructed and installed at the District's sole expense in connection with the development of the CWP, and the District shall own, operate, maintain, repair and replace the same for the term of this Agreement.

(2) For CWP Non-Infrastructure Water: CWP Non-infrastructure Water will be measured and delivered by the Purchaser at its infrastructure. The District will administer water right change applications as necessary to designate points of diversion for delivery of CWP Non-infrastructure Water to the Purchaser at the Purchaser's sources. The Purchaser will meter and tabulate totals of CWP water delivered on a monthly basis from Purchasers sources and report that to the District for each contract year.

(b) Once the District delivers CWP Infrastructure Water to the point(s) of delivery, or CWP Non-infrastructure water is delivered at the Purchaser's sources, it shall be the responsibility of the

Purchaser to provide its own facilities as needed to take this water from the Delivery Infrastructure or Purchasers sources into the Purchaser's own delivery and/or distribution system for its use. No new points of delivery will be allowed without the prior written approval of the District. All Purchased Water delivered by the District under this Agreement will be measured through measuring devices installed in the Delivery Infrastructure or the Purchasers infrastructure at its sources.

6. System Capacity

(a) It is understood by the Purchaser that the delivery of Deliverable Water by the District to the Purchaser is limited to the Contract Capacity set forth in Exhibit B.

(b) If CWP System Capacity is available to deliver water beyond the Contract Capacity, and the Purchaser so requests, the Purchaser may, with the prior written approval of the District, receive delivery of Deliverable Water at a flow rate higher than the Contract Capacity provided in Exhibit B, subject to the following:

(1) The maximum flow rate at which the Deliverable Water shall be delivered and resulting adjustments in the applicable CWP Fees set forth in Paragraph 2 (c) herein for said year or other costs to be applied, if any, shall be negotiated and agreed upon by the Parties prior to the delivery of Deliverable Water in the increased amount.

(2) A request by the Purchaser to exceed the Contract Capacity shall be made on an annual basis no later than April 30th.

(3) Notwithstanding the foregoing, if the Contract Capacity is exceeded by the Purchaser without receiving the prior written approval of the District, then a monthly surcharge will be assessed to the Purchaser in an amount per acre-foot set annually by the District for each acre-foot of water exceeding Contract Capacity or Contract Capacity modified in accordance with Paragraph

6(b)(1), calculated on a daily basis.

7. **Quantity of Water Delivered**

(a) The District is not a guarantor of CWP water supply or of CWP delivery capacity. It is understood by the Parties that the District's ability to deliver CWP water to the Purchaser depends, in part, on the available CWP System Capacity. Therefore, in its reasonable discretion and pursuant to its interpretation and the application of its policies, rules, and procedures as they may be amended periodically:

(1) in times of CWP water shortage due to lack of runoff or other conditions which may be beyond the control of the District, the District may make a ratable allocation of CWP water among the various CWP purchasers, which allocation shall be based on the then-current amount of Deliverable Water in proportion to the District's CWP water purchase commitments under all of its CWP water supply agreements, and the amount of Deliverable Water for that year shall be reduced pro-rata; and

(2) in the event of CWP System Capacity shortages due to potential failures of equipment and infrastructure, and limitations in water source and infrastructure capacities, and in peak demand periods and other times of limited delivery capacity, the District may allocate the available CWP System Capacity among the District's CWP purchasers, which allocation shall be based on the then-current amount of CWP System Capacity available in proportion to the total CWP delivery capacity set forth in Exhibit B.

(b) No liability shall accrue against the District or any of its trustees, officers, agents, or employees, for any damages, direct or indirect, sustained by the Purchaser and/or its customers in the event of shortages of CWP System Capacity, or the District's inability to deliver the Purchased Water to the Purchaser not resulting from the District's own negligence, or due to shortages caused by drought,

hostile diversion, prior or superior claims, or other similar causes not within the control of the District.

(c) In the event the Purchaser does not take delivery during any contract year of all of the Deliverable Water for which the One-time Development Fee has been paid in conformance with the provisions of Paragraph 2 (b) (1), the Purchaser may take delivery in the immediately following contract year of so much of the Deliverable Water not taken as does not exceed five percent (5%) of the total Deliverable Water for that year ("Deferred Water"), subject to the following:

(1) Calculation of the amount of Deferred Water shall not include any water besides Deliverable Water as of the end of the previous contract year.

(2) Deferred Water cannot be accumulated on a multi-year basis.

(3) Deferral is subject to the availability of CWP System Capacity, as reasonably determined by the District;

(4) Delivery of Deferred Water shall have a lower priority than delivery of Deliverable Water for that year;

(5) The Purchaser may take delivery of Deferred Water only after it has taken delivery of all of the Deliverable Water for the contract year in which the Deferred Water is to be taken.

8. **Use and Delivery of Purchased Water by the Purchaser**

(a) The Purchaser shall use the Purchased Water made available to it under this Agreement only for M&I purposes. No other use of Purchased Water shall be made without the prior written consent of the District.

(b) The portfolio of water rights the District has acquired for the CWP requires that a percentage of water represented by the CWP water rights be returned to the hydrologic system in Utah and Salt Lake counties in order to avoid interference with other water right appropriators and with

other District water supply operations. As such, the Purchaser shall not recycle nor otherwise utilize the Purchased Water in a manner that depletes the Purchased Water in amounts greater than fifty percent (50%) without the prior written consent of the District.

(c) Subject to the prior written consent of the District, all or some portion of the CWP Non-infrastructure Water may be utilized by the Purchaser by change application or exchange application under Utah law filed by the District. The Purchaser shall reimburse the District for any legal, engineering or other professional and consulting fees and all related costs and expenses it reasonably incurs in prosecuting any such change or exchange application to decision before the State Engineer, and through any subsequent judicial or administrative review proceedings or appeal.

(d) The Purchaser shall build its own infrastructure as required by it to take delivery of the Purchased Water from the District and utilize and distribute the same to its customers. All cost for O&M of the Purchaser's facilities shall be paid by the Purchaser and not the District.

(e) The Purchaser shall not use, deliver for use, sell, lease or otherwise dispose of any Purchased Water outside Purchaser's political boundaries or its recognized service area, without the prior written consent of the District. No user of the Purchased Water will use the Purchased Water on any basis other than the same basis as the general public.

(f) The facilities to be used to provide and deliver the Purchased Water may be financed, in whole or in part, with the proceeds of tax-exempt bonds ("Tax-exempt Bonds") of the District.

(1) The Purchaser acknowledges that in the event the District issues or has issued Tax-exempt Bonds related to the Purchased Water or its delivery, the use of Purchased Water by the Purchaser may be subject to various limitations imposed under the Internal Revenue Code of 1986 (the "Code"), and United States Treasury Regulations dealing with the tax-exempt bond provisions of the

Code (the "Regulations"), that must be complied with in order to protect the tax-exempt status of interest on the Tax-exempt Bonds; and as such, the Purchaser agrees as follows:

(A) The Purchaser shall not, without the prior written approval of the District, supply or enter into any arrangement to supply any of the Purchased Water to any person or entity, other than a state or local government, that conveys any preferential benefits, or that supplies water other than on the basis of rates that are generally applicable and uniformly applied or supplies the water to any person or entity who will resell the water in such a manner as to establish a "Private Business Use" under applicable provisions of Section 141(a) of the Code and the Regulations, thereby jeopardizing the tax-exempt status of the Tax-Exempt Bonds.

(B) The Purchaser shall not establish any fund or otherwise set aside any money or investments that it reasonably expects to use to make payments due and owing to the District under this Agreement without the prior written approval of the District (which approval may, among other requirements, limit the maximum yield for the investment or any such amounts pursuant to certain arbitrage rules under applicable provisions of Section 148(f) of the Code and the Regulations).

(2) The Purchaser shall, on an annual basis, provide to the District written verification of compliance with the requirements of this Subparagraph 8 (f).

9. Water Conservation

The Purchaser covenants that it shall prepare and file with the District a water conservation plan promulgated by the Purchaser which addresses, among other things, pricing, technical assistance and public education as components of the water conservation plan. Such plan shall be submitted to the District within one year of first delivery of Purchased Water to the Purchaser and shall be updated biennially.

10. **Collection of Fees and Charges**

In order to assure full and continuous performance of the Purchaser's obligations as set forth herein, the Purchaser hereby covenants and agrees that it will levy and collect all necessary fees, charges and assessments and reasonable contingencies in amounts which, together with other legally available funds, are sufficient to pay in full to the District all of its CWP Fee obligations under this Agreement. The Purchaser shall timely pay to the District the full amount of CWP Fees as they become due regardless of whether the Purchaser collects the full amount of its fees, charges, and assessments from its customers.

11. **Refusal of Water in the Event of Default and Termination**

(a) The District may withhold the delivery of all or any portion of the Purchased Water to the Purchaser if the Purchaser is in arrears for more than sixty (60) days in the payment to the District of any CWP Fee to be paid pursuant to Paragraph 2(b). Deliveries shall resume upon payment in full of any such arrearage including any and all accrued interest imposed by the District pursuant to this Agreement. Funds received to cure any arrearage shall be first applied by the District to payment of accrued interest and then towards the reduction of the principal on any such outstanding CWP Fee.

(b) If the Purchaser is in default under any provision of this Agreement and the default remains uncured for more than sixty (60) days after the date of written notice of default, the Parties shall reasonably mediate the dispute. However, if the dispute remains unresolved notwithstanding mediation, this Agreement may be terminated at the sole discretion of the District, subject to the following:

(1) The Purchaser shall have up to one (1) year after the date of written notice of default to seek judicial resolution of the dispute following mediation. This Agreement may not be terminated

by the District during the pendency of any judicial action, including any subsequent appeal.

(2) Should the Purchaser fail to bring legal action within said one year period and the dispute otherwise remains unresolved, the District may thereupon proceed to terminate the Agreement, effective upon written notice to the Purchaser.

(3) Upon termination of the Agreement, the Purchased Water will revert to the District for reallocation to other purchasers as determined by the District.

(4) Termination will not relieve the Purchaser of its obligations to pay any past due CWP Fees, together with any and all accrued interest; however, the Purchaser will be relieved of any future payment obligations after the termination of this Agreement.

12. Term of Agreement

The term of this Agreement shall be perpetual so long as the required payments are paid in accordance with the terms of this Agreement. However, nothing herein shall prohibit the Parties from negotiating or terminating this Agreement if the Parties mutually agree to do so. There are no third party beneficiaries of this Agreement, and no one other than the Parties hereto may enforce its terms and conditions.

13. Assignment Limited

Neither Party may assign this Agreement or any of its rights under it without the prior written consent of the other Party; provided, however, that the District may pledge and assign any monies received pursuant to this Agreement to the payment of the District's bonds.

14. Exhibits

All exhibits attached to this Agreement are incorporated into and made a part of this Agreement as though fully set forth herein.

15. **Binding Effect**

This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

16. **Severability**

If any term or provision of this Agreement shall, to any extent, be determined by a court of competent jurisdiction to be void, voidable, or unenforceable, such void, voidable or unenforceable term or provision shall not affect the enforceability of any other term or provision of this Agreement.

17. **Construction**

This Agreement is the result of negotiations between the Parties, neither of whom has acted under any duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms and provisions hereof shall be construed in accordance with their usual and customary meanings. Each Party hereby waives the application of any rule of law which otherwise would be applicable in connection with the construction of this Agreement that ambiguous or conflicting terms or provisions should be construed against the Party who (or who's attorney) prepared the executed Agreement or any earlier draft of the same. As used herein, all words in any gender shall be deemed to include the masculine, feminine, or neuter gender, all singular words shall include the plural, and all plural words shall include the singular, as the context may require.

18. *Further Action*

The Parties hereby agree to execute and deliver such additional documents and to take further action as may become necessary or desirable to fully carry out the provisions and intent of this Agreement.

19. **Business Relationship**

This Agreement neither acknowledges the existence of nor is it intended nor shall it be construed to establish, create or organize any principal-agent relationship, partnership, joint venture, or any other legal entity or form of business relationship between the Parties, and is limited solely to the purposes and interests expressed herein.

20. **Entire Agreement**

This Agreement, including exhibits, constitutes the entire agreement of the Parties and supersedes all prior undertakings, representations, or agreements of the Parties regarding the subject matter hereof.

21. **Warranty of Authority**

Each individual executing this Agreement does hereby represent and warrant that he or she has been duly authorized to sign this Agreement in the capacity and for the entities identified herein. The District and the Purchaser each represent and warrant that it has full legal right and authority to enter into this Agreement.

22. **Notices**

Notices given by or to the Parties shall be in writing and may be served personally or served by depositing them in the United States mail, postage prepaid, certified or registered mail with return receipt requested, addressed to the Parties at the addresses set forth below, or at such other addresses as the Parties may designate in writing:

DISTRICT:

Central Utah Water Conservancy District
Attention: General Manager
355 West University Parkway
Orem, Utah 84058

PURCHASER:

THE CITY OF SARATOGA SPRINGS
Attention: Mayor
3700 North Commerce Drive
Suite 200
Saratoga Springs, UT 84045

23. **Rules and Regulations Governing Service**

Subject to the terms and conditions of this Agreement, the District reserves the right to adopt rules and regulations governing the delivery of water under this Agreement, and to exercise its full statutory powers, including specifically the right to amend its rates, fees, charges, and its rules and regulations in the future, and the right to exercise its statutory powers, as they now exist or are amended or enacted in the future. It is expressly agreed that the District, by signing this Agreement, has not surrendered any of its rights in this regard.

24. Subject to Act

Subject to the terms and conditions of this Agreement, any commitment of CWP water, and payment to the District for CWP water so committed pursuant to this Agreement, shall be subject to the Act and the rules and regulations of the District's Board of Trustees now existing or hereafter legally promulgated, as the same may be supplemented or amended.

IN WITNESS WHEREOFF, the Parties hereto have executed this Agreement effective as of the day and year first written above.

CENTRAL UTAH WATER CONSERVANCY DISTRICT	THE CITY OF SARATOGA SPRINGS
By: _____	By: _____
Its: President	Its: Mayor
Attest: _____	Attest: _____
Secretary	Its:

City of SARATOGA SPRINGS CORPORATE SEAL STATE OF UTAH

EXHIBIT A

PURCHASED WATER TAKE DOWN SCHEDULE (BY VOLUME) FOR CWP INFRASTRUCTURE WATER UNDER THIS AGREEMENT

FISCAL YEAR (eg. FY 2009 = July 1, 2008 through June 30, 2009)	ANNUAL VOLUME OF CWP INFRASTRUCTURE WATER REMOVED FROM RESERVED STATUS - DELIVERABLE WATER (AF)	CUMULATIVE ANNUAL VOLUME OF CWP INFRASTRUCTURE WATER DELIVERED (AF)
2009		
2010		
2011		
2012		
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020	10,000	
2021 and thereafter		10,000
TOTAL VOLUME OF CWP INFRASTRUCTURE WATER RESERVED UNDER THIS AGREEMENT (AF)	10,000	

PURCHASED WATER TAKE DOWN SCHEDULE (BY VOLUME) FOR CWP NON-INFRASTRUCTURE WATER UNDER THIS AGREEMENT

CALENDER YEAR	ANNUAL VOLUME OF CWP NON-INFRASTRUCTURE WATER REMOVED FROM RESERVED STATUS (AF)	CUMULATIVE ANNUAL VOLUME OF CWP NON-INFRASTRUCTURE WATER DELIVERED (AF)
2009		
2010		
2011		
2012		
2013		

2014		
2015		
2016		
2017		
2018		
2019		
2020		
2021 and thereafter		
TOTAL VOLUME OF CWP NON-INFRASTRUCTURE WATER RESERVED UNDER THIS AGREEMENT(AF)	None	

EXHIBIT B

DELIVERY LOCATION AND RATE OF DELIVERY CAPACITY UNDER THIS AGREEMENT

I. FOR CWP INFRASTRUCTURE WATER

Delivery Location See Note (1)	Ultimate Contract Capacity (Maximum Daily Flow Rate in GPM But Limited by Annual Deliverable Volume) See Note (2)
1. Turnout at approximately 2300 West Pioneer Crossing, Lehi	
2. Turnout at approximately Pony Express Parkway and 800 West, Saratoga Springs	
3. Turnout at approximatery 1500 North and Utah Lake Distribution Canal, Lehi	
4. Turnout at approximately Pioneer Crossing and Redwood Road, Saratoga Springs	
See attached Figure 1	For Combined Total of up to 13,140 GPM

II. FOR CWP NON-INFRASTRUCTURE WATER

Delivery Location See Note (1)	Contract Capacity (Maximum Daily Flow Rate in GPM) See Note (3)
1. None	

Notes:
(1) The delivery location referenced herein is preliminary. A final delivery location or locations will be determined by the Parties and designated herein after final design and prior

to the commencement of construction of the CWP infrastructure or approval of water right change application.

(2) The total Contract Capacity corresponds to the Cumulative Annual Volume Delivered shown in Exhibit A in each year multiplied by 18% and divided by 31 days and converted to a gallons per minute flow rate, i.e. Delivered Water amount in AF multiplied by 0.18 divided by 31 days multiplied by 325,829 gallons per AF divided by 24 hours per day divided by 60 minutes per hour.

(3) The total Contract Capacity is anticipated to be identified in the approved water right change application.

FIGURE 1—DELIVERY POINT LOCATIONS

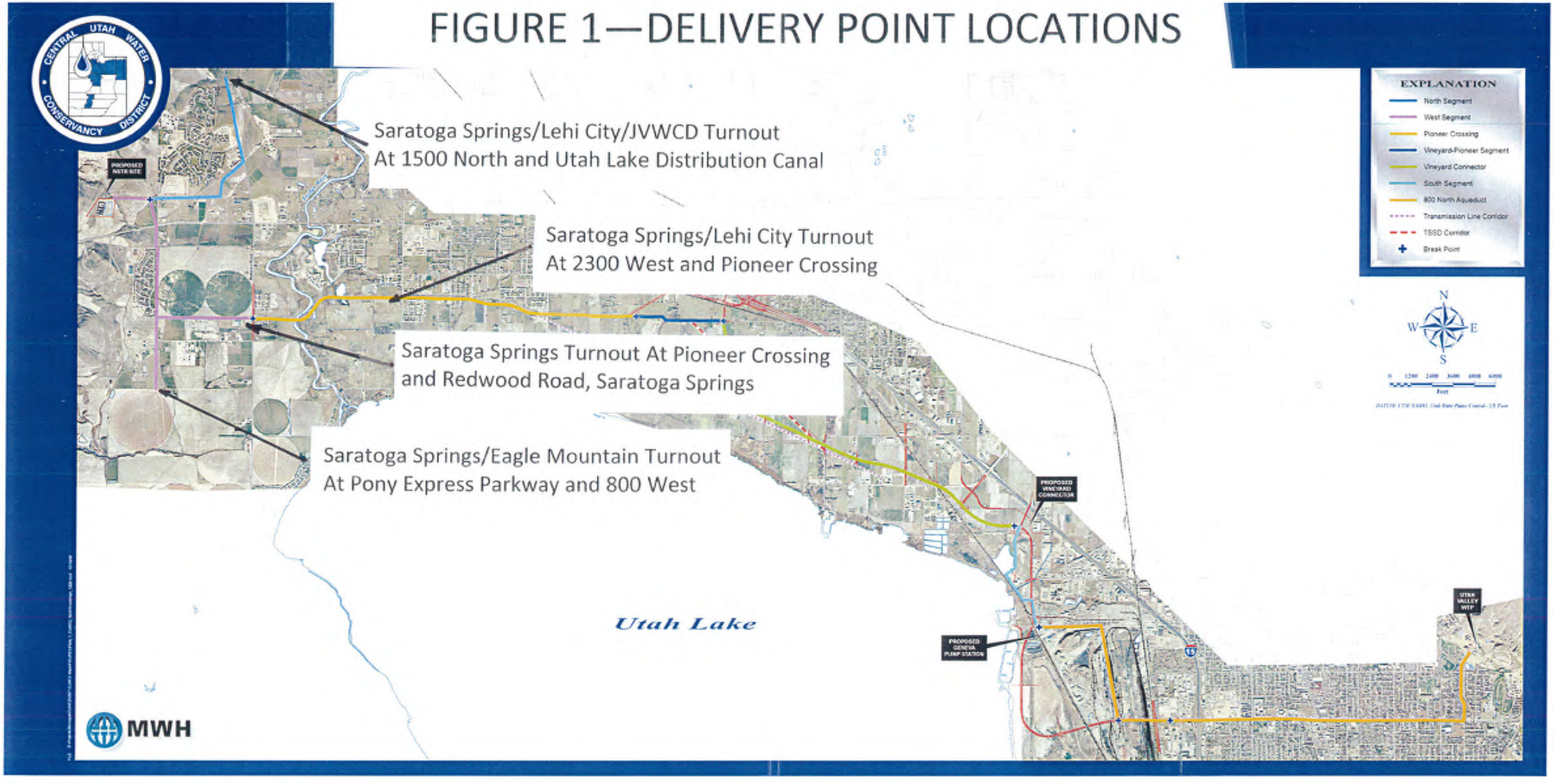


EXHIBIT A

February, 2017

Take-Down Schedule - Purchased Water Take-Down Schedule (By Volume) for Purchased Water Under this Agreement

COLUMN	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	Annual Volume (Block) of Purchased Water For Which One-Time Development Fee is Due (AF)	One Time Development Charge for Blocks of Purchased Water (per AF)	Annual Volume of Purchased Water Subject to Capital Recovery Component of Annual Fee (AF)	*Actual* and Estimated Capital Recovery Component of Annual Fee for Volume of Water in Column C (per AF)	Annual Volume of Purchased Water which becomes Deliverable Water (AF)	Cumulative Annual Volume of Deliverable Water (AF)	*Actual* and Estimated OM&R Component of Annual Fee for Deliverable Water in Column (F) (per AF)	*Actual* and Estimated Future Annual Fee (As set annually by the District) (Fee includes the OM&R and Capital Recovery Components in Columns D & G
2008-09	0	*$6,200*	0		0	0		*$300*
2009-10	0	*$6,200*	0		0	0		*$314*
2010-11	0	*$6,200*	0		0	0		*$328*
2011-12	0	*$6,200*	0		0	0		*$343*
2012-13	0	*$6,200*	0		0	0		*$358*
2013-14	0	*$6,200*	0		0	0		*$374*
2014-15	0	*$6,200*	0	*$222*	0	0	*$169*	*$391*
2015-16	0	*$6,200*	0	*$203*	0	0	*$205*	*$408*
2016-17	0	*$6,200*	0	*$252*	0	0	*$175*	*$427*
2017-18	50	$6,200	50	$280	50	50	$166	$446
2018-19	50	$6,200	100	$310	50	100	$156	$466
2019-20	9900	$6,200	10,000	$346	380	480	$141	$487
2020-21	0		10,000	$364	380	860	$145	$509
2021-22	0		10,000	$383	380	1,240	$149	$532
2022-23	0		10,000	$400	380	1,620	$156	$556
2023-24	0		10,000	$421	380	2,000	$160	$581
2024-25	0		10,000	$442	380	2,380	$165	$607
2025-26	0		10,000	$464	380	2,760	$170	$634
2026-27	0		10,000	$484	380	3,140	$179	$663
2027-28	0		10,000	$508	380	3,520	$185	$693
2028-29	0		10,000	$530	380	3,900	$194	$724
2029-30	0		10,000	$556	380	4,280	$200	$756
2030-31	0		10,000	$583	380	4,660	$207	$790
2031-32	0		10,000	$609	380	5,040	$217	$826
2032-33	0		10,000	$639	380	5,420	$224	$863
2033-34	0		10,000	$668	380	5,800	$234	$902
2034-35	0		10,000	$702	380	6,180	$241	$943
2035-36	0		10,000	$733	380	6,560	$252	$985
2036-37	0		10,000	$7	380	6,940	$259	$266
2037-38	0		10,000	$8	380	7,320	$271	$279
2038-39	0		10,000	$11	380	7,700	$280	$291
2039-40	0		10,000	$12	380	8,080	$293	$305
2040-41	0		10,000	$16	380	8,460	$302	$318
2041-42	0		10,000	$16	380	8,840	$316	$332
2042-43	0		10,000	$20	380	9,220	$327	$347
2043-44	0		10,000	$21	380	9,600	$342	$363
2044-45	0		10,000	$25	400	10,000	$355	$380

- Actual previous or present fee amounts are in Italics and Blue as set by District Board of Trustees

Continues at 10,000 AF

- Fee amounts are estimated amounts and set annually by District Board of Trustees

CWP-Saratoga Springs Exhibit A Summary and Calculation

Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	CWP One Time Development Charge Removed from Reserved Status (AF)	Actual and Estimated Capital Recovery Portion of Annual Fee (per AF)	Actual and Estimated OM&R Portion of Annual Fee (per AF)	Actual and Estimated Future Annual Fee (As set annually by the District) (Fee Includes the OM&R and Capital Recovery Components (per AF)	Capital Prepayment No Discount (per AF)	Capital Prepayment with 2.5% Discount (per AF)	Cost per Discounted Typical Single Family = .45 AF = WFSU .40
2008-09	$5,850				$15,949	$12,827	$5,772
2009-10	$6,200				$16,299	$13,168	$5,926
2010-11	$7,000				$17,099	$13,949	$6,277
2011-12	$7,800				$17,899	$14,729	$6,628
2012-13	$8,400				$18,499	$15,314	$6,891
2013-14	$8,500				$18,599	$15,412	$6,935
2014-15	$9,100	$222	$169	$391	$19,199	$15,997	$7,199
2015-16	$9,370	$203	$205	$408	$19,247	$16,222	$7,300
2016-17	$9,600	$252	$175	$427	$19,274	$16,426	$7,391
2017-18	$9,840	$280	$166	$446	$19,262	$16,590	$7,466
2018-19	$10,090	$310	$156	$466	$19,232	$16,736	$7,531
2019-20	$10,340	$346	$141	$487	$19,172	$16,850	$7,582
2020-21	$10,600	$364	$145	$509	$19,086	$16,935	$7,621
2021-22	$10,870	$383	$149	$532	$18,992	$17,008	$7,654
2022-23	$11,140	$400	$156	$556	$18,879	$17,058	$7,676
2023-24	$11,420	$421	$160	$581	$18,759	$17,095	$7,693
2024-25	$11,720	$442	$165	$607	$18,638	$17,126	$7,707

WATER SUPPLY AGREEMENT BETWEEN CENTRAL UTAH WATER CONSERVANCY DISTRICT AND THE CITY OF SARATOGA SPRINGS FOR SALE OF CWP MUNICIPAL AND INDUSTRIAL WATER

THIS WATER SUPPLY AGREEMENT ("Agreement") is made effective as of this 21 of August, 2018 (the "Effective Date"), by and between the Central Utah Water Conservancy District, a water conservancy district organized under the laws of the State of Utah ("District"), and the City of Saratoga Springs, a municipal corporation ("Purchaser"). The District and the Purchaser are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. The District is organized and exists pursuant to the Utah Water Conservancy Act, Utah Code Annotated §17B-2a-1001, et seq., and those provisions of §17B-1-101, et seq., applicable to all local districts, both sections as amended (collectively, the "Act"), for the purpose, among others, of making water available to contract holders residing within its boundaries and of entering into agreements with water users for the purchase and sale of water and its delivery.

B. The Purchaser is a water user organized under the laws of the State of Utah that utilizes and/or provides water service to its customers within its boundaries, and which desires to purchase an additional supply of municipal and industrial ("M&I") water from the District.

C. The District shall design, construct, operate, maintain, repair and replace the Central Utah Water Conservancy District Water Development Project ("CWP"), and has developed and obtained and will develop and obtain sources of water supply for sale and delivery to contract purchasers through the CWP.

D. The Parties enter into this Agreement to set forth the terms and conditions pursuant to which CWP water may be reserved by, purchased by and delivered to the Purchaser at the point or points designated herein, for sale and distribution by the Purchaser to meet a portion of the needs of its customers.

NOW, THEREFORE, in consideration of the foregoing recitals, and other good and valuable

consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

TERMS

1. **Sale and Purchase of Purchased Water**

(a) Purchase Water; Block Subscriptions; Take-down and Payment. The District hereby agrees to sell and the Purchaser hereby agrees to purchase in a given District fiscal year (July 1 – June 30) as provided below, or in any event pay for, in a given fiscal year (defined for purposes of the District as July 1 – June 30) an annual original supply and optional additional supply of District M&I water developed from the CWP (collectively, the "Purchased Water"). Purchased Water hereunder shall be made available and subscribed for in Blocks of Fifty (50) acre-feet (each, a "Block"), which shall be held in reserve for the benefit of Purchaser, and be taken-down for delivery using CWP or District operated infrastructure, in conformance with the following:

(1) Block Subscriptions.

(A) Original Contract Supply. The original contract supply of Purchased Water, which Purchaser subscribes for and agrees to purchase hereunder, shall consist of two (2) 50 acre-foot Blocks (the "Original Contract Supply").

(B) Optional Additional Contract Supply. Subject to the availability of additional CWP water, as determined in the sole discretion of the District, the Purchaser has the option of increasing the contract supply of Purchased Water hereunder up to an additional amount of Two Hundred (200) acre-feet (the "Optional Contract Supply"), for a total contract supply of Purchased Water hereunder in the amount of Three Hundred (300) acre-feet, including both the Original Contract Supply and the Optional Contract Supply.

(i) The Optional Contract Supply of Purchased Water shall be made available and may be subscribed for by Purchaser in up to a total of Four (4) additional Blocks.

(ii) The Purchaser's option to increase the contract supply of Purchased Water hereunder as provided in this Paragraph shall terminate on June 30, 2021.

(iii) Purchaser may subscribe for one or more additional Blocks of water per year, at any time in those fiscal years identified in the Take-down Schedule attached as EXHIBIT "A" hereto (the "Take-down Schedule"), by submitting to the District one or more written Block requests (each a "Block Request") for that fiscal year, duly authorized by the Purchaser and approved by the District.

(2) Take-down of Block Water. The Purchaser may take-down water (i.e. remove water subscribed for under each Block from Reserved Status to Deliverable Water), in amounts not less than ten (10) acre-feet, at any time by submitting to the District a written take-down request ("Take-down Request"), duly authorized by the Purchaser and approved by the District. Notwithstanding the foregoing, the total water supply within each Block subscribed for in any given fiscal year shall be taken-down by Purchaser within that fiscal year or in any event paid for in full as provided below as set forth in Paragraph 2(b)(1)(B).

(3) Payment. Payment of the One-time Development Charge for each additional Block shall be due and payable in conformance with the provisions of Paragraph 2(b)(1) herein, and payment of the Annual Fee for each additional Block shall be due and payable commencing with the year in which the Block request is submitted, in conformance with the provisions of Paragraph 2(b)(2) herein.

(b) Take-down and Delivery Schedule. Subject to the terms and conditions of this Agreement, Purchased Water, including the Original Contract Supply and the Optional Contract Supply, shall be held by the District in reserved status ("Reserved Status"), and be made available for delivery by the District to the Purchaser in accordance with the Take-down Schedule, and the scheduling provisions set forth in Paragraph 7. Purchased Water scheduled to be delivered in a given fiscal year which is removed from Purchased Water status to become "Deliverable Water" according to the Take-down Schedule, shall then be delivered to the Purchaser at the specified point or points of delivery, and within the maximum daily flow rates ("Contract Capacity") set forth on the Delivery Schedule attached as EXHIBIT "B" hereto (the "Delivery Schedule"). The Parties hereby understand and acknowledge that in establishing the Contract Capacity, the District must consider both the capacity of the available Purchased Water supply and the capacity of the available CWP infrastructure, including the capacity of all available reservoirs, wells, treatment plants, transmission lines, meters and meter

stations, and pumps and pump stations within the CWP system (collectively, the "CWP System Capacity").

(c) Substantially Similarly Situated Customers Offer. The District and the Purchaser agree and understand that the sale of Purchased Water under this Agreement is under terms and conditions that are substantially the same for similarly situated customers entering into CWP water supply agreements during the period July 1, 2017 through June 30, 2018 (said grouping of water supply agreements being referred to for purpose of identification as "CWP FY2018 A"), and offered to all other existing CWP Water Supply Agreement Customers as of January 1, 2018.

(d) Similar Pricing Structure Amendment. In the event the District shall enter into any CWP water supply agreement(s) having a pricing structure or terms of sale more favorable to the purchaser therein than those set forth in Paragraph 2 below, the Parties agree that this Agreement shall be amended so as to apply the same pricing structure or terms of sale herein.

2. **Sales Price of Purchased Water**

(a) General.

(1) The Purchased Water is sold and delivered pursuant to a pricing structure containing the following two components: (i) a One-time Development Charge; and (ii) an Annual Fee, with its two subcomponents, as described in Paragraph 2(b) below. (The One-time Development Charge and the Annual Fee, including its two subcomponents, are sometimes referred to herein collectively as the "CWP Fees").

(2) Factors that will influence the amount for each of the two components of the pricing structure may include among other things, the grouping, by year, of water purchase agreements for CWP water.

(3) The CWP Fees set forth herein are imposed for the sole purpose of developing and providing the CWP water supply and providing the infrastructure necessary to deliver the Purchased Water to the Purchaser and other water users and customer agencies that enter into similarly situated and dated CWP water supply agreements. CWP Fees will not include District costs from projects not directly related to the CWP. The District shall treat all CWP water purchasers, similarly situated within water sales agreements

grouped according to the effective dates of said agreements as may be determined by the District, in an equal, fair and non-discriminatory manner.

(4) CWP Fees under this Agreement shall be due and payable by the Purchaser, as provided herein, regardless of whether the Purchaser calls for or uses any of the Purchased Water in any given fiscal year, subject to monthly and annual adjustments as provided in Paragraph 7 herein. Notwithstanding the foregoing, in the unlikely event the CWP infrastructure is not capable of delivering Purchased Water to Purchaser in the amount set forth in Column C of the Take-down Schedule, in the corresponding fiscal year, the obligation of the Purchaser to pay the One-time Development Charge due and payable that fiscal year shall be suspended, and the volume of water scheduled to be delivered in that fiscal year shall be set back and added onto the next succeeding year until the Deliverable Water is available for delivery to the Purchaser, at which time payment of any unpaid One-time Development Charges, in the amount(s) set forth in Column D of the Take-down Schedule shall be due, as billed by the District.

(5) Notwithstanding any provision herein to the contrary with regard to payment of CWP Fees, the Purchaser may request in writing that it be authorized to pre-pay, in whole or in part, any one or both of the CWP Fees due and owing hereunder. The pre-payment request shall be analyzed on a case-by-case basis,and be authorized at the sole discretion of the District, subject to such terms and conditions as the District shall determine at the time. The District's authorization to pre-pay and the terms and conditions of pre-payment shall be set forth in a separate written agreement to be executed between the District and the Purchaser.

(b) CWP Pricing Structure. The pricing structure for the CWP FY2018 A water supply under this Agreement is as follows:

(1) One-time Development Charge.

(A) The District must recover from all purchasers that enter into water supply agreements the costs of the District to develop the CWP, including the acquisition and development of the CWP water supply and the planning, design and construction of the CWP infrastructure ("CWP Development Cost"). The One-time Development Charge is charged on a per acre-foot basis as provided in Paragraph 2

below, and covers a portion of the Purchaser's proportionate share of the CWP Development Cost. The respective One-time Development Charges to be paid by Purchaser for the Purchased Water reserved under this Agreement are fixed in the amounts shown in Column D of the Take-down Schedule during the term of this Agreement for each Block of Purchased Water in Column A and Column B.

(B) The One-time Development Charge due and owing for each Block designated in the Take-down Schedule is paid one-time only by the Purchaser for the Block of water constituting the Original Contract Supply of Purchased Water set forth in Column A, and the Blocks of water constituting the Optional Contract Supply set forth in Column B of the Takedown Schedule. The One-time Development Charge in the amount set forth in Column D of the Takedown Schedule shall be paid in installments when Purchased Water subscribed for under a Block is taken-down pursuant to the provisions of Paragraph 1(a)(2) herein and removed from Reserved Status to become Deliverable Water as set forth in Column C of the Takedown Schedule. The amount due shall be payable on the first day of the month next succeeding the month in which Purchased Water is taken down and removed from reserved status to become Deliverable Water pursuant to the provisions of Paragraph 1(a)(2) herein. Notwithstanding the foregoing, the total amount of the One-time Development Charge due and owing for each Block of Purchased Water set forth in Column A and Column B shall be payable for the entire Block, in full, by June 30 of the fiscal year in which the Block of water is subscribed for by the Purchaser, whether or not the full amount of said Block is taken-down within that fiscal year by the Purchaser.

(2) Annual Fee.

(A) The Annual Fee is charged on a per acre-foot basis as provided in Paragraph 2(c) below, and is imposed to cover costs associated with the operation, maintenance, repair and replacement ("OM&R") of the CWP infrastructure, to fund OM&R reserves for the CWP, to pay the remaining portion of the Purchaser's proportionate share of the CWP Development Cost not covered by the One-time Development Charge ("proportionate share" for this purpose being defined as Purchaser's total volume of Purchased Water under this Agreement divided by the total capacity of the CWP attributable to all water capable

of being delivered through CWP infrastructure, estimated by the Parties as of the date hereof to be 53,312 acre-feet, averaged over a five-year rolling period). The amount of the Annual Fee to be charged is set annually by the District's Board of Trustees and may change from year-to-year.

(B) The Annual Fee, for the purpose of this Agreement, is comprised of two separate components, as follows:

(i) The Annual OM&R Fee Subcomponent ("OM&R Component"). This subcomponent is imposed to cover costs associated with the operation, maintenance, repair and replacement of the CWP infrastructure in operation status and to fund OM&R reserves for the CWP. The OM&R Component is estimated and shall be imposed in a reasonable amount in conformance with applicable State law, annually at the beginning of each Fiscal Year (which may change from year-to-year), and is charged on a per acre-foot basis for the then cumulative total of the amount of Deliverable Water as of that Fiscal Year, as shown in "Column C" of the Take-down Schedule. The Purchaser will only pay that amount attributed to a proportionate share of costs incurred for OM&R, and to fund the OM&R reserve, apportioned to the Purchaser based upon the annual cumulative volume of Deliverable Water, in acre-feet.

(ii) The Annual Capital Recovery Fee Subcomponent (the "Capital Recovery Component"). This subcomponent is imposed to pay the remaining portion of the Purchaser's proportionate share of the CWP Development Cost not covered by the One-time Development Charge, as defined above. The Capital Recovery Component is estimated from time to time by the District as it updates its CWP System financial status (which may change from year-to-year), taking into account, among other things, the timing of additional capital facilities, if any, needed to satisfy future customer demands on the CWP System, and is charged on a per acre-foot basis for the then cumulative total amount of Purchased Water identified as of that Fiscal Year, as shown in "Column A" and "Column B" of the Take-down Schedule. The Purchaser will only pay that amount attributed to a proportionate share of capital development costs incurred in financing the CWP, apportioned to the Purchaser based upon the annual volume of Purchased Water, in acre-feet, as shown each year under Columns A and B of the Take-down Schedule, as amended from time to time.

(C) The estimated amount of the OM&R Component and the Capital Recovery Component of the Annual Fee is set forth in the Take-down Schedule, Exhibit A. Subject to the provisions of Paragraph 2(b)(2)(D) below, the Annual Fee shall be calculated, invoiced and be payable by the Purchaser as follows:

(i) The OM&R Component of the Annual Fee shall be calculated by multiplying the volume of actual water delivered in the prior month by the estimated OM&R Component amount set forth in Column F of Exhibit A, and be payable on a monthly basis within 30 days of the date of the District's invoice for actual water deliveries made in months prior to the date of the invoice. The District will invoice the Purchaser for the OM&R component of the Annual Fee commencing the end of the month following the payment of the One-time Development Charge and Capital Recovery Component.

(ii) The Capital Recovery Component of the Annual Fee shall be calculated based upon the volume of Purchased Water subscribed for under a Block which is taken-down pursuant to the provisions of Paragraph 1(a)(b) and removed from Reserved Status to become Deliverable Water, as shown in Column C of the Takedown Schedule, multiplied by the estimated Capital Recovery Component amount of the Annual Fee set forth in Column E of the Takedown Schedule. The amount due shall be payable on the first day of the month next succeeding the month in which Purchased Water is removed from Reserved Status to become Deliverable Water pursuant to the provisions of Paragraph 1(a)(2) herein.

(iii) Subject to the provisions of Paragraph 7 below, the Annual Fee is to be paid by the Purchaser as provided herein regardless of whether the Purchaser calls for or uses any of the Purchased Water in any given year. In the event the amount paid by the Purchaser under invoices for actual water delivered in conformance with Paragraph 2(b)(2)(C) is less than the total Annual Fee due hereunder, the remaining balance shall be invoiced by the District in the June billing each fiscal year.

(D) Notwithstanding the provisions of Paragraph 2(b)(2)(C) above, the Purchaser, at its option, may give written notice to the District that it desires to capitalize components of the Annual Fee. The District is willing to accept an up-front capitalized payment ("Capitalized Annual Fee"), for a

period of years agreeable to the District and Purchaser ("Capitalization Period"), under terms and conditions established by the District in its sole discretion, subject to the following:

(i) Upon receipt of notice from the Purchaser, the District will calculate the total estimated amount of the Capital Recovery Component of the Annual Fee to be due and payable over the Capitalization Period commencing the date Deliverable Water becomes available to the Purchaser. The District will thereupon notify the Purchaser, in writing, of the amount of the Capital Recovery Component of the Annual Fee to be charged, which shall be due and payable by the Purchaser within thirty (30) days from the date it receives said notice.

(ii) The Parties agree that upon payment of the Capital Recovery Component of the Annual Fee no credit or additional payment is due whether the actual amounts vary from the estimated amounts which were paid. It is agreed that "Column H" contains the calculated Capital Prepayment amount per acre-foot of the One-time Development Fee and the Estimated Capital Recovery Component of the Annual Fee as of the date of this Agreement.

(c) Pricing Structure Applicable to the Purchaser Hereunder.

(1) The pricing structure for the CWP Fees due and owing for Purchased Water hereunder, including the One-time Development Charge and the Annual Fee (including the OM&R Component and the Capital Recovery Component), is set forth in the Take-down Schedule.

(2) Interest on Delinquent Accounts. Any CWP Fee that remains unpaid after it shall have become due and payable as provided herein shall be subject to simple interest at the rate of one and one-half percent (1.5%) of the delinquent amount per month. Interest will begin to accrue from the date of delinquency and will continue to accrue until such time as the delinquent CWP Fees and all accrued interest have been paid in full; provided, however, that no inter shall be charged to or paid by the Purchaser unless such delinquency continues for more than thirty (30) days or more beyond the date of delinquency.

3. **Quality of Water Delivered**

CWP culinary water shall be delivered to the Purchaser in conformance with standards for public

drinking water set by applicable law and regulation, including the Utah Division of Drinking Water and/or the Utah Drinking Water Board of the Department of Environmental Quality; provided, however, that the District shall not be liable, or otherwise in breach of this Agreement, for failure to meet those standards unless the failure is due to the District's willful misconduct or gross negligence. The District and Purchaser agree that the CWP water sources will be Provo River water, high quality deep groundwater from a well field in or near Vineyard, Utah, or other sources of comparable quality. Deliveries from any other sources shall be of comparable quality.

4. **Reservation of Water**

The District shall hold Purchased Water in Reserved Status for the Purchaser pursuant to the Take-down Schedule, which shall be amended as each additional Block of water is requested by the Purchaser pursuant to Paragraph 1(a)(2) herein. The total Optional Contract Supply of Purchased Water must be removed from Reserved Status and become Deliverable Water based upon the Takedown Schedule, subject to the provisions of Paragraph 1(a)(1)(B)(ii) herein. As Purchased Water becomes Deliverable Water, payments will be required for each acre-foot of Deliverable Water pursuant to the provisions of Paragraph 2.

5. **Point of Delivery**

(a) Purchased Water will be measured and delivered to the Purchaser only at the point or points of delivery identified in the Delivery Schedule. The infrastructure to be constructed by the District for the purpose of delivering Purchased Water from its main transmission lines at said point(s) of delivery include a vault, valve(s), meter(s), piping and related facilities and equipment ("Delivery Infrastructure"), as determined to be necessary by the District to deliver and measure the Purchased Water at said point(s). The Delivery Infrastructure will be constructed and installed at the District's sole expense in connection with the development of the CWP, and the District shall own, operate, maintain, repair and replace the same for the term of this Agreement.

(b) Once the District delivers Purchased Water to the point(s) of delivery, it shall be the responsibility of the Purchaser to provide its own facilities as needed to take this water from the Delivery Infrastructure or Purchasers sources into the Purchaser's own delivery and/or distribution system for its use. No

new points of delivery will be allowed without the prior written approval of the District. All Purchased Water delivered by the District under this Agreement will be measured through measuring devices installed in the Delivery Infrastructure or the Purchasers infrastructure at its sources.

6. **System Capacity**

(a) It is understood by the Purchaser that the delivery of Deliverable Water by the District to the Purchaser is limited to the Contract Capacity set forth in the Delivery Schedule.

(b) If CWP System Capacity is available to deliver water beyond the Contract Capacity, and the Purchaser so requests, the Purchaser may, with the prior written approval of the District, receive delivery of Deliverable Water at a flow rate higher than the Contract Capacity provided in the Delivery Schedule, subject to the following:

(1) The maximum flow rate at which the Deliverable Water shall be delivered and resulting adjustments in the applicable CWP Fees set forth in Paragraph 2 (c) herein for said year or other costs to be applied, if any, shall be negotiated and agreed upon by the Parties prior to the delivery of Deliverable Water in the increased amount.

(2) A request by the Purchaser to exceed the Contract Capacity shall be made on an annual basis no later than April 30th.

(3) Notwithstanding the foregoing, if the Contract Capacity is exceeded by the Purchaser without receiving the prior written approval of the District, then a monthly surcharge will be assessed to the Purchaser in an amount per acre-foot set annually by the District for each acre-foot of water exceeding Contract Capacity or Contract Capacity modified in accordance with Paragraph 6(b)(1), calculated on a daily basis.

7. **Quantity of Water Delivered**

(a) The District is not a guarantor of CWP water supply or of CWP delivery capacity. It is understood by the Parties that the District's ability to deliver CWP water to the Purchaser depends, in part, on the

available CWP System Capacity. Therefore, in its reasonable discretion and pursuant to its interpretation and the application of its policies, rules, and procedures as they may be amended periodically:

(1) in times of CWP water shortage due to lack of runoff or other conditions which may be beyond the control of the District, the District may make a ratable allocation of CWP water among the various CWP purchasers, which allocation shall be based on the then-current amount of Deliverable Water in proportion to the District's CWP water purchase commitments under all of its CWP water supply agreements, and the amount of Deliverable Water for that year shall be reduced pro-rata; and

(2) in the event of CWP System Capacity shortages due to potential failures of equipment and infrastructure, and limitations in water source and infrastructure capacities, and in peak demand periods and other times of limited delivery capacity, the District may allocate the available CWP System Capacity among the District's CWP purchasers, which allocation shall be based on the then-current amount of CWP System Capacity available in proportion to the total CWP delivery capacity set forth in the Delivery Schedule.

(b) No liability shall accrue against the District or any of its trustees, officers, agents, or employees, for any damages, direct or indirect, sustained by the Purchaser and/or its customers in the event of shortages of CWP System Capacity, or the District's inability to deliver the Purchased Water to the Purchaser not resulting from the District's own negligence, or due to shortages caused by drought, hostile diversion, prior or superior claims, or other similar causes not within the control of the District.

(c) In the event the Purchaser does not take delivery during any contract year of all of the Deliverable Water for which the One-time Development Charge has been paid in conformance with the provisions of Paragraph 2 (b) (1), the Purchaser may take delivery in the immediately following contract year of so much of the Deliverable Water not taken as does not exceed five percent (5%) of the total Deliverable Water for that year ("Deferred Water"), subject to the following:

(1) Calculation of the amount of Deferred Water shall not include any water besides Deliverable Water as of the end of the previous contract year.

(2) Deferred Water cannot be accumulated on a multi-year basis.

(3) Deferral is subject to the availability of CWP System Capacity, as reasonably determined by the District;

(4) Delivery of Deferred Water shall have a lower priority than delivery of Deliverable Water for that year;

(5) The Purchaser may take delivery of Deferred Water only after it has taken delivery of all of the Deliverable Water for the contract year in which the Deferred Water is to be taken.

8. **Use and Delivery of Purchased Water by the Purchaser**

(a) The Purchaser shall use the Purchased Water made available to it under this Agreement only for M&I purposes. No other use of Purchased Water shall be made without the prior written consent of the District.

(b) The portfolio of water rights the District has acquired for the CWP requires that a percentage of water represented by the CWP water rights be returned to the hydrologic system in Utah County in order to avoid interference with other water right appropriators and with other District water supply operations. As such, the Purchaser shall not recycle nor otherwise utilize the Purchased Water in a manner that depletes the Purchased Water in amounts greater than fifty percent (50%), without the prior written consent of the District.

(c) The Purchaser shall build its own infrastructure as required by it to take delivery of the Purchased Water from the District and utilize and distribute the same to its customers. All cost for O&M of the Purchaser's facilities shall be paid by the Purchaser and not the District.

(d) The Purchaser shall not use, deliver for use, sell, lease or otherwise dispose of any Purchased Water outside Purchaser's political boundaries or its recognized service area, without the prior written consent of the District. No user of the Purchased Water will use the Purchased Water on any basis other than the same basis as the general public.

(e) The facilities to be used to provide and deliver the Purchased Water may be financed, in whole or in part, with the proceeds of tax-exempt bonds ("Tax-exempt Bonds") of the District.

(1) The Purchaser acknowledges that in the event the District issues or has issued Tax-exempt Bonds related to the Purchased Water or its delivery, the use of Purchased Water by the Purchaser may be subject to various limitations imposed under the Internal Revenue Code of 1986 (the "Code"), and United States Treasury Regulations dealing with the tax-exempt bond provisions of the Code (the "Regulations"), that must be complied with in order to protect the tax-exempt status of interest on the Tax-exempt Bonds; and as such, the Purchaser agrees as follows:

(A) The Purchaser shall not, without the prior written approval of the District, supply or enter into any arrangement to supply any of the Purchased Water to any person or entity, other than a state or local government, that conveys any preferential benefits, or that supplies water other than on the basis of rates that are generally applicable and uniformly applied or supplies the water to any person or entity who will resell the water in such a manner as to establish a "Private Business Use" under applicable provisions of Section 141(a) of the Code and the Regulations, thereby jeopardizing the tax-exempt status of the Tax-Exempt Bonds.

(B) The Purchaser shall not establish any fund or otherwise set aside any money or investments that it reasonably expects to use to make payments due and owing to the District under this Agreement without the prior written approval of the District (which approval may, among other requirements, limit the maximum yield for the investment of any such amounts pursuant to certain arbitrage rules under applicable provisions of Section 148(f) of the Code and the Regulations).

(2) The Purchaser shall, on an annual basis, provide to the District written verification of compliance with the requirements of this Subparagraph 8 (e).

9. **Water Conservation**

The Purchaser covenants that it shall prepare and file with the District a water conservation plan promulgated by the Purchaser which addresses, among other things, pricing, technical assistance and public education as components of the water conservation plan. Such plan shall be submitted to the District within one year of first delivery of Purchased Water to the Purchaser and shall be updated biennially.

10. **Collection of Fees and Charges**

In order to assure full and continuous performance of the Purchaser's obligations as set forth herein, the Purchaser hereby covenants and agrees that it will levy and collect all necessary fees, charges and assessments and reasonable contingencies in amounts which, together with other legally available funds, are sufficient to pay in full to the District all of its CWP Fee obligations under this Agreement. The Purchaser shall timely pay to the District the full amount of CWP Fees as they become due regardless of whether the Purchaser collects the full amount of its fees, charges, and assessments from its customers.

11. **Refusal of Water in the Event of Default and Termination**

(a) The District may withhold the delivery of all or any portion of the Purchased Water to the Purchaser if the Purchaser is in arrears for more than sixty (60) days in the payment to the District of any CWP Fee to be paid pursuant to Paragraph 2(b). Deliveries shall resume upon payment in full of any such arrearage including any and all accrued interest imposed by the District pursuant to this Agreement. Funds received to cure any arrearage shall be first applied by the District to payment of accrued interest and then towards the reduction of the principal on any such outstanding CWP Fee.

(b) If the Purchaser is in default under any provision of this Agreement and the default remains uncured for more than sixty (60) days after the date of written notice of default, the Parties shall reasonably mediate the dispute. However, if the dispute remains unresolved notwithstanding mediation, this Agreement may be terminated at the sole discretion of the District, subject to the following:

(1) The Purchaser shall have up to one (1) year after the date of written notice of default to seek judicial resolution of the dispute following mediation. This Agreement may not be terminated by the District during the pendency of any judicial action, including any subsequent appeal.

(2) Should the Purchaser fail to bring legal action within said one year period and the dispute otherwise remains unresolved, the District may thereupon proceed to terminate the Agreement, effective upon written notice to the Purchaser.

(3) Upon termination of the Agreement, the Purchased Water will revert to the District for reallocation to other purchasers as determined by the District.

(4) Termination will not relieve the Purchaser of its obligations to pay any past due CWP Fees, together with any and all accrued interest; however, the Purchaser will be relieved of any future payment obligations after the termination of this Agreement.

12. **Term of Agreement**

The term of this Agreement shall be perpetual so long as the required payments are paid in accordance with the terms of this Agreement. However, nothing herein shall prohibit the Parties from amending or terminating this Agreement if the Parties mutually agree to do so. There are no third party beneficiaries of this Agreement, and no one other than the Parties hereto may enforce its terms and conditions.

13. **Assignment Limited**

Neither Party may assign this Agreement or any of its rights under it without the prior written consent of the other Party; provided, however, that the District may pledge and assign any monies received pursuant to this Agreement to the payment of the District's bonds.

14. **Exhibits**

All exhibits attached to this Agreement are incorporated into and made a part of this Agreement as though fully set forth herein.

15. **Binding Effect**

This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

16. **Severability**

If any term or provision of this Agreement shall, to any extent, be determined by a court of competent jurisdiction to be void, voidable, or unenforceable, such void, voidable or unenforceable term or provision shall not affect the enforceability of any other term or provision of this Agreement.

17. **Construction**

This Agreement is the result of negotiations between the Parties, neither of whom has acted under any duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms and provisions hereof shall

be construed in accordance with their usual and customary meanings. Each Party hereby waives the application of any rule of law which otherwise would be applicable in connection with the construction of this Agreement that ambiguous or conflicting terms or provisions should be construed against the Party who (or who's attorney) prepared the executed Agreement or any earlier draft of the same. As used herein, all words in any gender shall be deemed to include the masculine, feminine, or neuter gender, all singular words shall include the plural, and all plural words shall include the singular, as the context may require.

18. **Further Action**

The Parties hereby agree to execute and deliver such additional documents and to take further action as may become necessary or desirable to fully carry out the provisions and intent of this Agreement.

19. **Business Relationship**

This Agreement neither acknowledges the existence of nor is it intended nor shall it be construed to establish, create or organize any principal-agent relationship, partnership, joint venture, or any other legal entity or form of business relationship between the Parties, and is limited solely to the purposes and interests expressed herein.

20. **Entire Agreement**

This Agreement, including exhibits, constitutes the entire agreement of the Parties and supersedes all prior undertakings, representations, or agreements of the Parties regarding the subject matter hereof.

21. **Warranty of Authority**

Each individual executing this Agreement does hereby represent and warrant that he or she has been duly authorized to sign this Agreement in the capacity and for the entities identified herein. The District and the Purchaser each represent and warrant that it has full legal right and authority to enter into this Agreement.

22. **Notices**

Notices given by or to the Parties shall be in writing and may be served personally or served by depositing them in the United States mail, postage prepaid, certified or registered mail with return receipt requested, addressed to the Parties at the addresses set forth below, or at such other addresses as the Parties may

designate in writing:

DISTRICT:

Central Utah Water Conservancy District
Attention: General Manager
355 West University Parkway
Orem, Utah 84058

PURCHASER:
THE CITY OF SARATOGA SPRINGS
Attention: Mayor
And to:
Attention: City Recorder
3700 North Commerce Drive, Suite 200
Saratoga Springs, UT 84045

23. **Rules and Regulations Governing Service**

Subject to the terms and conditions of this Agreement, the District reserves the right to adopt rules and regulations governing the delivery of water under this Agreement, and to exercise its full statutory powers, including specifically the right to amend its rates, fees, charges, and its rules and regulations in the future, and the right to exercise its statutory powers, as they now exist or are amended or enacted in the future. It is expressly agreed that the District, by signing this Agreement, has not surrendered any of its rights in this regard.

24. **Subject to the Act**

Subject to the terms and conditions of this Agreement, any commitment of Purchased Water, and payment to the District for Purchased Water so committed pursuant to this Agreement, shall be subject to the Act and the rules and regulations of the District's Board of Trustees now existing or hereafter legally promulgated, as the same may be supplemented or amended.

IN WITNESS WHEREOFF, the Parties hereto have executed this Agreement effective as of the day and year first written above.

CENTRAL UTAH WATER CONSERVANCY DISTRICT	**CITY OF SARATOGA SPRINGS**
By: _____	By: _____
Its: President	Its: Mayor
Attest:	Attest:
_____	_____
Secretary	City Recorder
8/15/18	8-21-2018

EXHIBIT A

TAKE-DOWN SCHEDULE

PURCHASED WATER TAKE-DOWN SCHEDULE (BY VOLUME) FOR PURCHASED WATER UNDER THIS AGREEMENT

EXHIBIT A

August, 2018

Take-Down Schedule - Purchased Water Take-Down Schedule (By Volume) for Purchased Water Under this Agreement

COLUMN	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	Annual Volume (Block) of Purchased Water For Which One-Time Development Fee is Due (AF)	Annual Volume (Block) of Additional CWP Water Available to Be Removed from Reserved Status (AF)	Volume of Purchased Water Removed from Reserved Status which becomes Deliverable Water (AF)	One Time Development Charge for Blocks of Purchased Water (per AF)	*Actual* and Estimated Capital Recovery Component of Annual Fee for Volume of Water in Column C (per AF)	*Actual* and Estimated OM&R Component of Annual Fee for Deliverable Water in Column (F) (per AF)	*Actual* and Estimated Future Annual Fee (As set annually by the District) (Fee includes the OM&R and Capital Recovery Components in Columns D & G	Capital Prepayment with 2.5% Discount of One-Time Development Fee and Estimated Capital Recovery Component of Annual Fee (per AF)
2008-09	0	0	0	*$5,850*			*$300*	
2009-10	0	0	0	*$6,200*			*$314*	
2010-11	0	0	0	*$7,000*			*$328*	
2011-12	0	0	0	*$7,800*			*$343*	
2012-13	0	0	0	*$8,400*			*$358*	
2013-14	0	0	0	*$8,500*			*$374*	
2014-15	0	0	0	*$9,100*	*$222*	*$169*	*$391*	
2015-16	0	0	0	*$9,370*	*$203*	*$205*	*$408*	
2016-17	0	0	0	*$9,600*	*$252*	*$175*	*$427*	*$16,426*
2017-18	0	0	0	*$9,840*	*$280*	*$166*	*$446*	*$16,590*
2018-19	100	200	60	$10,090	$310	$156	$466	$16,736
2019-20	0	200		$10,340	$346	$141	$487	$16,850
2020-21	200	0		$10,600	$364	$145	$509	$16,935
2021-22	0	0		$10,870	$383	$149	$532	$17,008
2022-23	0	0		$11,140	$400	$156	$556	$17,058
2023-24	0	0		$11,420	$421	$160	$581	$17,095
2024-25	0	0		$11,720	$442	$165	$607	$17,126

 # - Actual previous or present fee amounts are in Italics and Blue as set by District Board of Trustees

 # - Fee amounts are estimated amounts and set annually by District Board of Trustees

EXHIBIT B

DELIVERY SCHEDULE

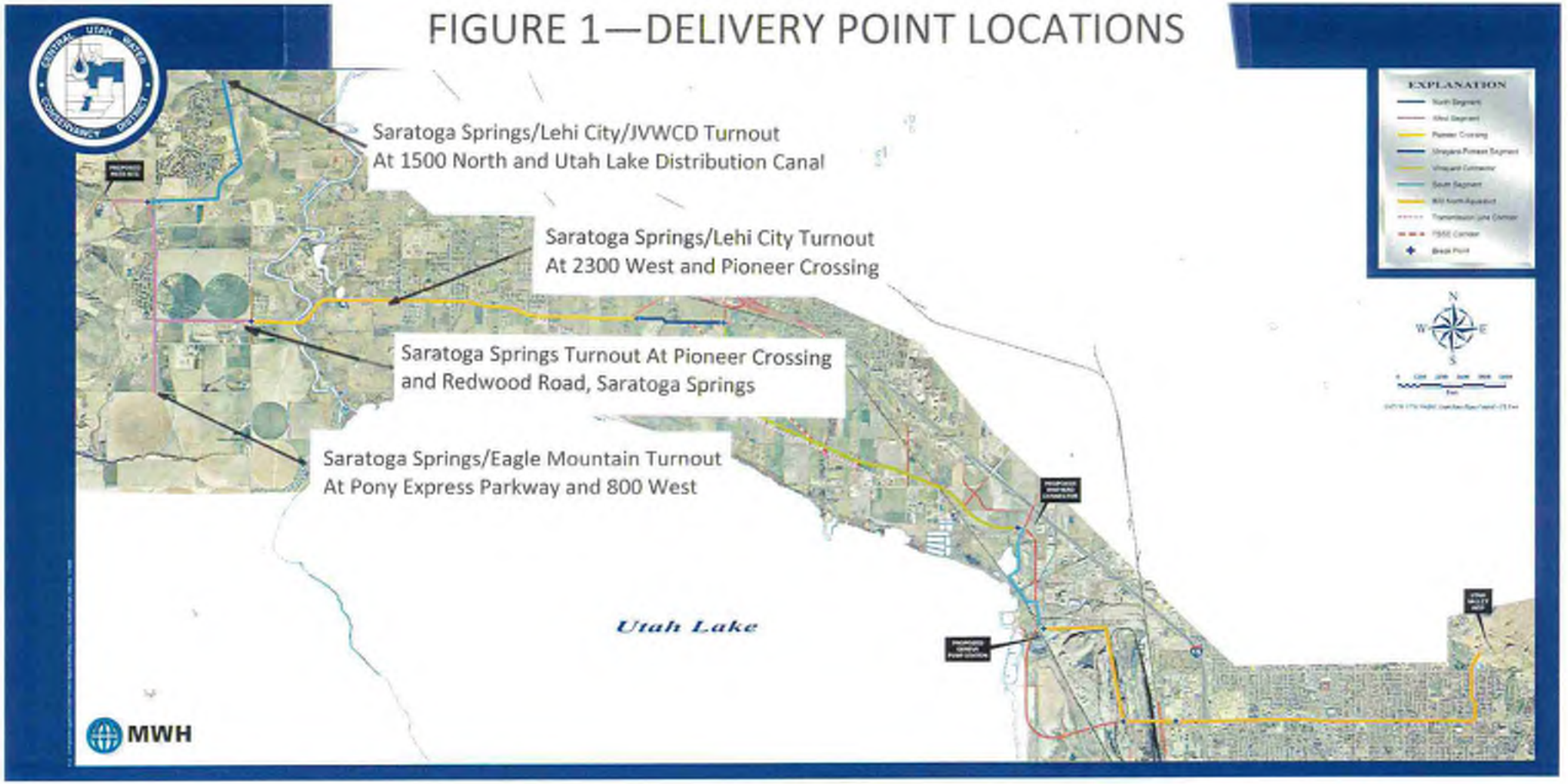
DELIVERY LOCATION AND RATE OF DELIVERY CAPACITY UNDER THIS AGREEMENT

I. FOR PURCHASED WATER

Delivery Location See Figure 1	Ultimate Contract Capacity (Maximum Daily Flow Rate in GPM But Limited by Annual Deliverable Volume) See Note (1)
1. Turnout at approximately 2300 West Pioneer Crossing, Lehi	
2. Turnout at approximately Pony Express Parkway and 800 West, Saratoga Springs	
3. Turnout at approximately 1500 North and Utah Lake Distribution Canal, Lehi	
4. Turnout at approximately Pioneer Crossing and Redwood Road, Saratoga Springs	
See attached Figure 1	For Combined Total of up to 394 GPM

Notes:
(1) The total Contract Capacity corresponds to the Cumulative Annual Volume Delivered shown in Exhibit A in each year multiplied by 18% and divided by 31 days and converted to a gallons per minute flow rate, i.e. Delivered Water amount in AF multiplied by 0.18 divided by 31 days multiplied by 325,829 gallons per AF divided by 24 hours per day divided by 60 minutes per hour.

FIGURE 1—DELIVERY POINT LOCATIONS



APPENDIX H

Water Conservation Plan

CITY OF SARATOGA SPRINGS

Water Conservation Plan

March 2021



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1.0 Introduction

The Saratoga Springs 2021 Water Conservation Plan has been developed in accordance with the revised Water Conservation Act of 2004 (House Bill 71, Section 73-10-32 Utah State Code Annotated) as an update to the Saratoga Springs 2015 Water Conservation Plan. The City of Saratoga Springs (City) has continued to experience rapid growth and continues to be one of the fastest growing communities in both Utah County and the Wasatch Front.

Growth affects the future cost and availability of both drinking and secondary water supplies. These concerns are identified and addressed in this Water Conservation Plan. This plan contains a summary of the current drinking and secondary water systems, identifies existing water conservation measures that have been implemented, and provides recommendations the City and community can pursue to build upon and improve water conservation efforts.

1.1 Population

The City of Saratoga Springs has experienced tremendous growth since the early 2000's that has transformed the once largely agricultural community into an urbanized region of northern Utah County. Residential and commercial developments are being established at a rapid pace with a significant amount of land still available for future growth.

The City has approximately 6.4 square miles of developed land within the existing boundary of 21.7 square miles. Inclusion of the future annexation boundary is expected to create a total area of 34.6 square miles. The existing City boundary and proposed annexation areas are shown on the Current Land Use Plan map provided in Appendix A.

The 2010 US Census identified the population of Saratoga Springs as 17,781 people with approximately 4,387 households. The 2019 population estimate for Saratoga Springs was 33,282. This is a 9-year increase of about 15,501 people and an 87.2% change. This growth trend is consistent with projections provided by Mountainland Association of Governments (MAG) which projects the 2030 population in Saratoga Springs at 79,815 and the 2050 population to be 138,600. Water demands for the City are expected to increase accordingly. Figure 1-1 below shows the projected population growth from 2020 to 2050.

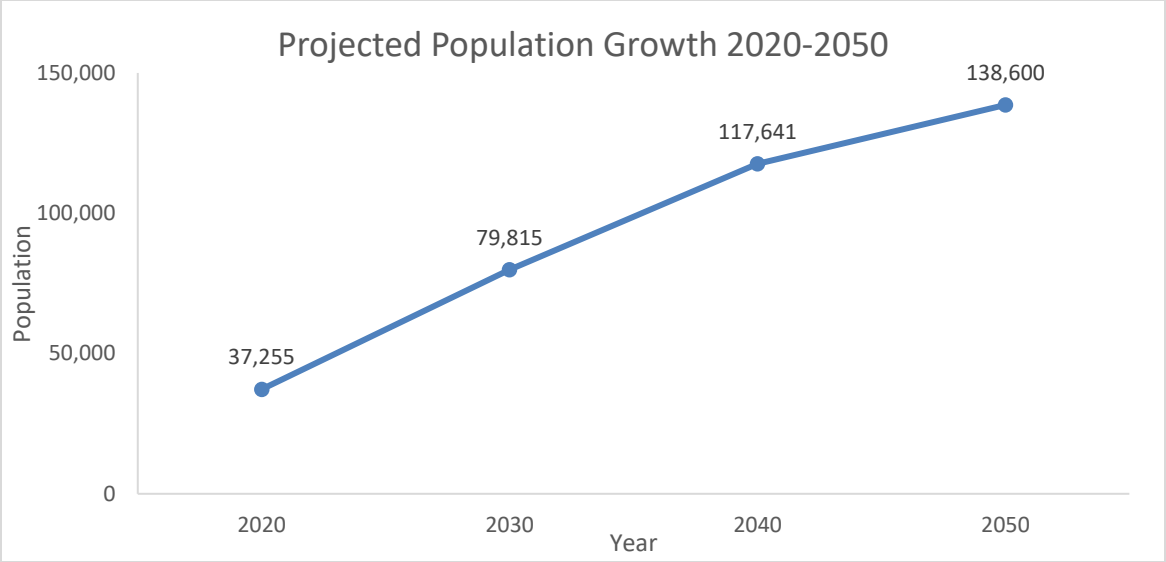


Figure 1-1: Projected population growth in Saratoga Springs 2020-2050

2.0 Existing Water System

The water system serving Saratoga Springs currently has three pressure zones; future projections and planning anticipate a total of six pressure zones. Multiple pressure zones are necessary due to changes in elevation throughout the city ranging from 4,500 feet to 5,100 feet. By creating zones, pressures between 40-120 psi can be maintained throughout the City. A map of the Saratoga Spring's existing and proposed drinking and secondary pressure zones can be found in Appendix A.

2.1 Drinking Water Inventory

According to City records, there are 8,882 metered drinking water connections in Saratoga Springs as of 2019. The connection types and corresponding connection totals are shown in Table 2-1 below.

Table 2-1: Drinking water connection types

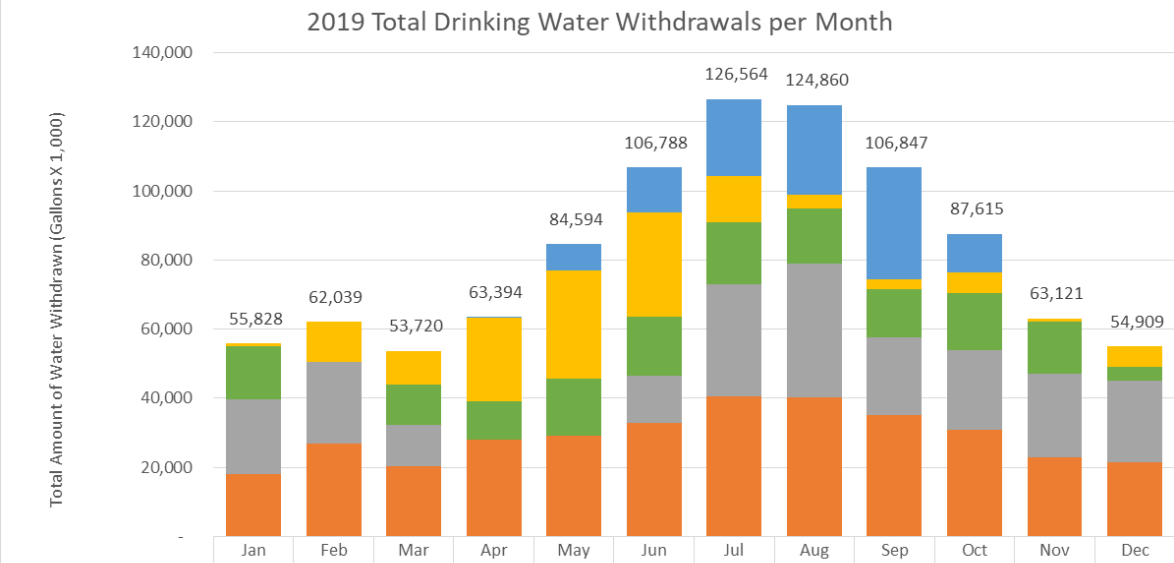
Connection Type	Connection Totals
Residential	8,627
Commercial	204
Industrial	5
Institutional	46
Total	**8,882**

The drinking water system is served by five underground wells located east of the Jordan River and two surface water connections (turnouts) from Central Utah Water Conservancy District (CUWCD). The peak drinking water production capacity from these sources is 11,870 gallons per minute (gpm). The peak capacity of each drinking water source is listed in Table 2-2.

Table 2-2: Peak capacity of drinking water sources

Name	Peak Capacity (gpm)
Well #1	1,000
Well #2	1,020
Well #3	1,750
Well #4	1,000
Well #6	1,100
CUWCD Connection #1 (Redwood Rd)	3,000
CUWCD Connection #2 (Pioneer and Redwood Rd)	3,000
Total Capacity	**11,870**

Drinking water withdrawal data is collected via Supervisory Control and Data Acquisition (SCADA) from each site. Although there is a large variation in the amount of water pumped at each site year-to-year (every year various wells are taken out of service temporarily for maintenance and repairs), the monthly and yearly total amounts withdrawn from all sites remains relatively consistent. Figure 2-1 enumerates the gallons of water withdrawn from each water source per month in 2019. Well #1 was out of service in 2019 due to water quality issues and is not included in the data presented in Figure 2-1.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CUWCD #1 & #2	-	-	-	3	7,775	13,093	22,252	26,075	32,465	11,226	-	-
Well #6	655	11,649	9,903	24,276	31,050	30,040	13,432	3,969	2,949	6,110	984	5,865
Well #2	15,455	-	11,525	10,988	16,605	17,224	17,870	15,963	13,836	16,312	14,930	3,825
Well #4	21,633	23,579	11,926	-	-	13,493	32,507	38,731	22,516	23,025	24,452	23,657
Well #3	18,085	26,811	20,366	28,127	29,164	32,937	40,503	40,122	35,081	30,943	22,754	21,562
Total	55,828	62,039	53,720	63,394	84,594	106,788	126,564	124,860	106,847	87,615	63,121	54,909

Figure 2-1: 2019 total drinking water withdrawals per month

In recent years, the City has had to reduce pumping in Wells #4 and #6 due to water levels that have dropped too close to the pump intakes, ultimately causing water quality issues. During the dry summer months (June to September), the aquifer from which these wells are pumping water is exceedingly stressed. To meet demands while alleviating the water level issues in the wells and reduce the stress placed on the aquifer, Saratoga Springs supplements its water through CUWCD.

2.2 Secondary Water Inventory

To preserve drinking water sources and utilize lower quality water sources that may not be suitable for consumption, Saratoga Springs has developed a secondary water system to provide outdoor irrigation. The secondary system was designed to be an independent system, however, it can be supplemented by excess capacity in the drinking water system if necessary. The secondary water system is operated from April 15th to October 15th each year. In October, the system is drained through connections to the storm drain system at points of low elevation throughout the City.

According to City records, there are 8,360 metered secondary water connections in Saratoga Springs as of 2019. The connection types and corresponding connection totals are shown in Table 2-3 below.

Table 2-3: Secondary water connection types

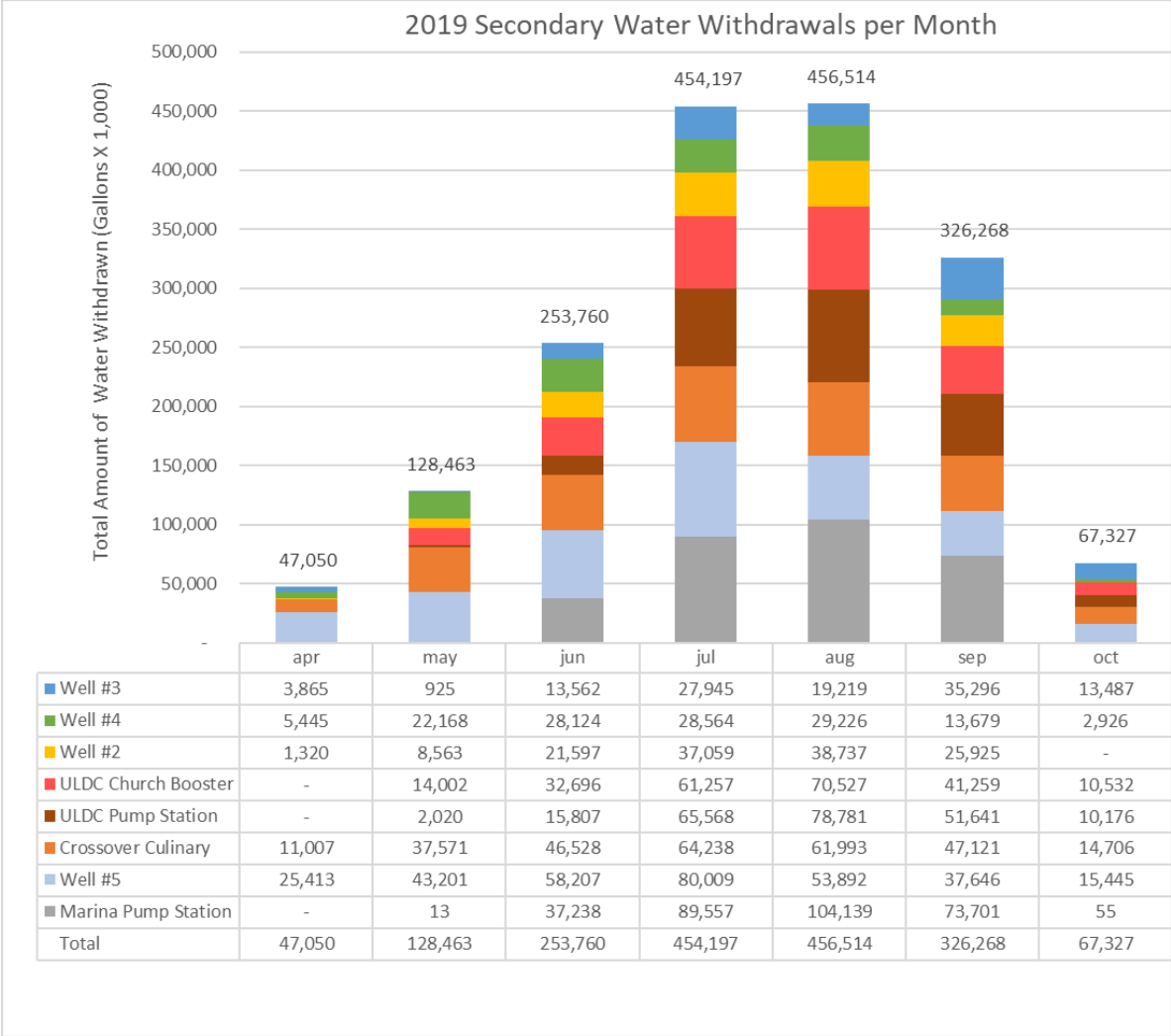
Connection Type	Connection Totals
Domestic	7,598
Commercial	702
Industrial	0
Institutional	60
Total	**8,360**

The secondary water system is served by five underground wells, two connections from the Utah Lake Distributing Canal (ULDC), and the Marina Pump Station. The peak secondary water production capacity from these sources is 16,600 gpm. The total water production of the five wells is 6,500 gpm, the ULDC connections can produce a total of 6,100 gpm, and the Marina Pump Station can produce a total of 4,000 gpm. The peak capacity of each secondary water source is listed in the Table 2-4.

Table 2-4: Peak capacity of secondary water sources

Name	Peak Capacity (gpm)
Well #1	800
Well #2	900
Well #3	500
Well #4	800
Well #5	3,500
ULDC Church Booster	1,100
ULDC Pump Station (400 N)	5,000
Marina Pump Station	4,000
Total Capacity	**16,600**

Secondary water withdrawal data is collected via SCADA from each site. There is a large variation in the amount of water withdrawn at each site year-to-year (every year various wells are taken out of service temporarily for maintenance and repairs). Furthermore, due to the City's ability to supplement the secondary system with excess drinking water system capacity using reduced pressure zone valves (RPZs), the monthly and yearly water pumped from each site can fluctuate significantly. Figure 2-2 enumerates the amount of water withdrawn per month at each site in 2019. As mentioned previously, the secondary system is operated from April to October of each year, which is reflected in the figure below. Well #1 has been inactive since 2017 and has not been included in the figure.



	apr	may	jun	jul	aug	sep	oct
Well #3	3,865	925	13,562	27,945	19,219	35,296	13,487
Well #4	5,445	22,168	28,124	28,564	29,226	13,679	2,926
Well #2	1,320	8,563	21,597	37,059	38,737	25,925	-
ULDC Church Booster	-	14,002	32,696	61,257	70,527	41,259	10,532
ULDC Pump Station	-	2,020	15,807	65,568	78,781	51,641	10,176
Crossover Culinary	11,007	37,571	46,528	64,238	61,993	47,121	14,706
Well #5	25,413	43,201	58,207	80,009	53,892	37,646	15,445
Marina Pump Station	-	13	37,238	89,557	104,139	73,701	55
Total	47,050	128,463	253,760	454,197	456,514	326,268	67,327

Figure 2-2: 2019 total secondary water withdrawals per month

2.3 Water Supply and Efficient Use

A comparison has been made between the reliable supply, projected use, and efficient use of the Saratoga Springs drinking and secondary water systems. This comparison looks at each of these items every ten years from the year 2020 to 2050. As seen in Figure 2-3, each year the reliable supply of drinking water exceeds the projected use of the drinking system. As seen in Figure 2-4, the reliable supply of secondary water does not meet the projected use for the secondary system. The City plans to increase future supply for the secondary system by utilizing deep groundwater sources from the Utah Lake aquifer and may also utilize reclaimed water.

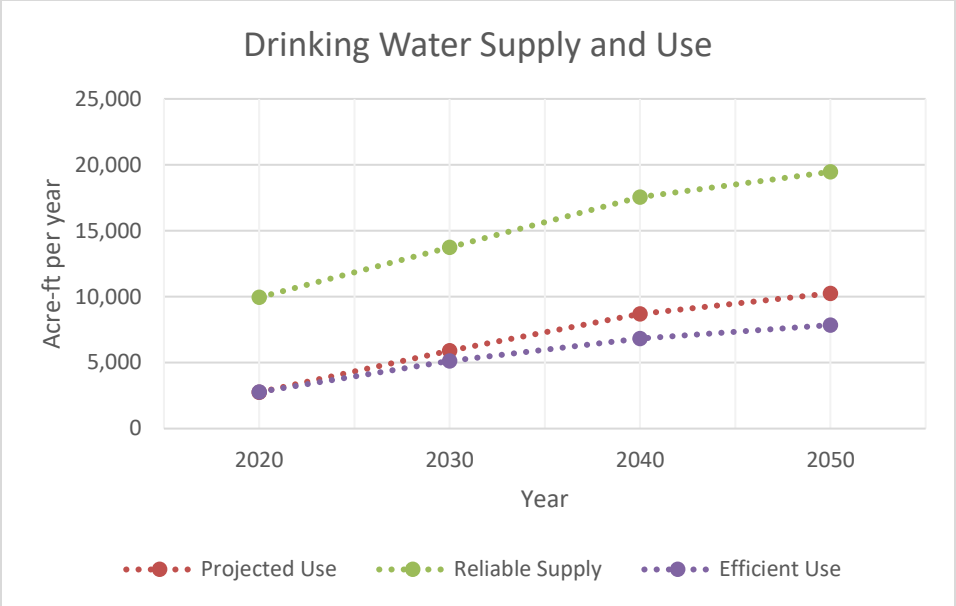


Figure 2-3: Drinking water supply and efficient use 2020-2050

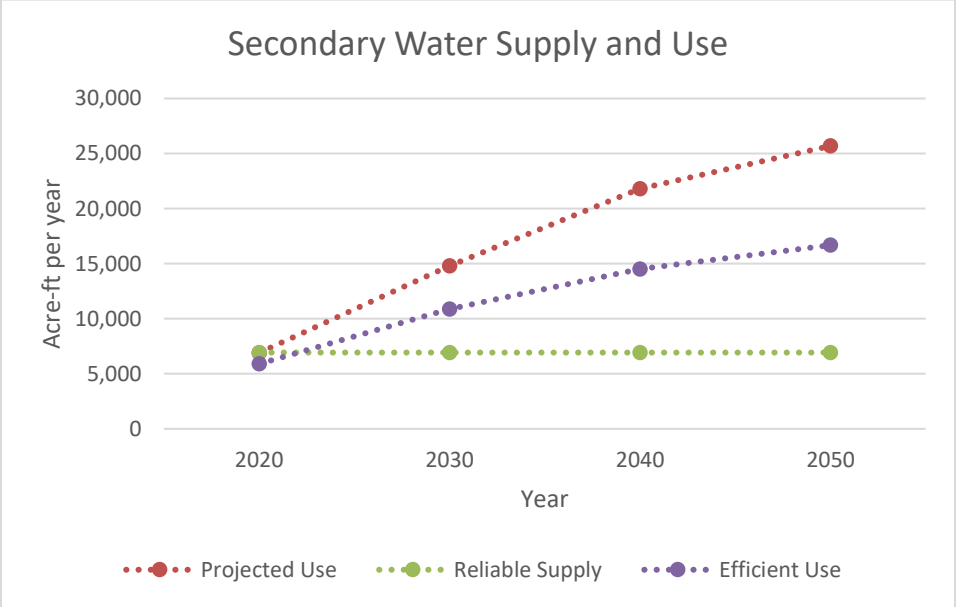


Figure 2-4: Secondary water supply and efficient use 2020-2050

2.4 Water Use

The Environmental Protection Agency (EPA) estimated that in 2016 the nationwide average residential water use was 107 gallons per capita per day (GPCD). According to the EPA, 70% of this water is used for indoor (drinking) purposes. Based on this percentage, it is assumed that the average U.S. resident uses 75 gallons of water per day indoors and 32 gallons per day outdoors (secondary). The United States Geologic Survey (USGS) reported that in 2015, the average water use in Utah was 169 GPCD. According to state records, approximately 33% of Utah's residential water consumption is for drinking

purposes. Based on this percentage, it is assumed that the average resident in Utah uses 56 gallons of water per day indoors and 113 gallons per day outdoors. The high quantity of water consumed in Utah, especially for outdoor use, can be attributed to the dry climate and allocation of large residential lots.

The City reported that in 2019 the average residential water use was 166 GPCD. This value accounts for system losses that occur between the water source and the customer meters. Using meter data the average Saratoga Springs resident uses 53 gallons of water per day indoors and 113 gallons per day outdoors. Based on these values, it is estimated that the average Saratoga Springs resident uses 32% of their water indoors while the remaining 68% is used outdoors. While indoor use in Saratoga Springs is below the national and state averages, outdoor water use is the same as the state average but higher than the national average. The higher quantity of water used in Saratoga for outdoor use is attributed to a high evapotranspiration rate, poor soil quality, and the chemistry of secondary water sources (high in total dissolved solids).

Table 2-5 provides the volume of drinking and secondary water used in Saratoga Springs in 2019 broken down by type. Most of the drinking and secondary water is consumed in the residential sector. It should be noted that these values are representative of retail use and do not include system losses. System losses are discussed in more detail in Section 2.5.2.

Table 2-5: Drinking and secondary water use by type

Type	Drinking Water Use (Acre-Feet)	Secondary Water Use (Acre-Feet)
Residential	1382	2748
Commercial	171	216
Industrial	0.14	0
Institutional	25	23
Total	**1578**	**2986**

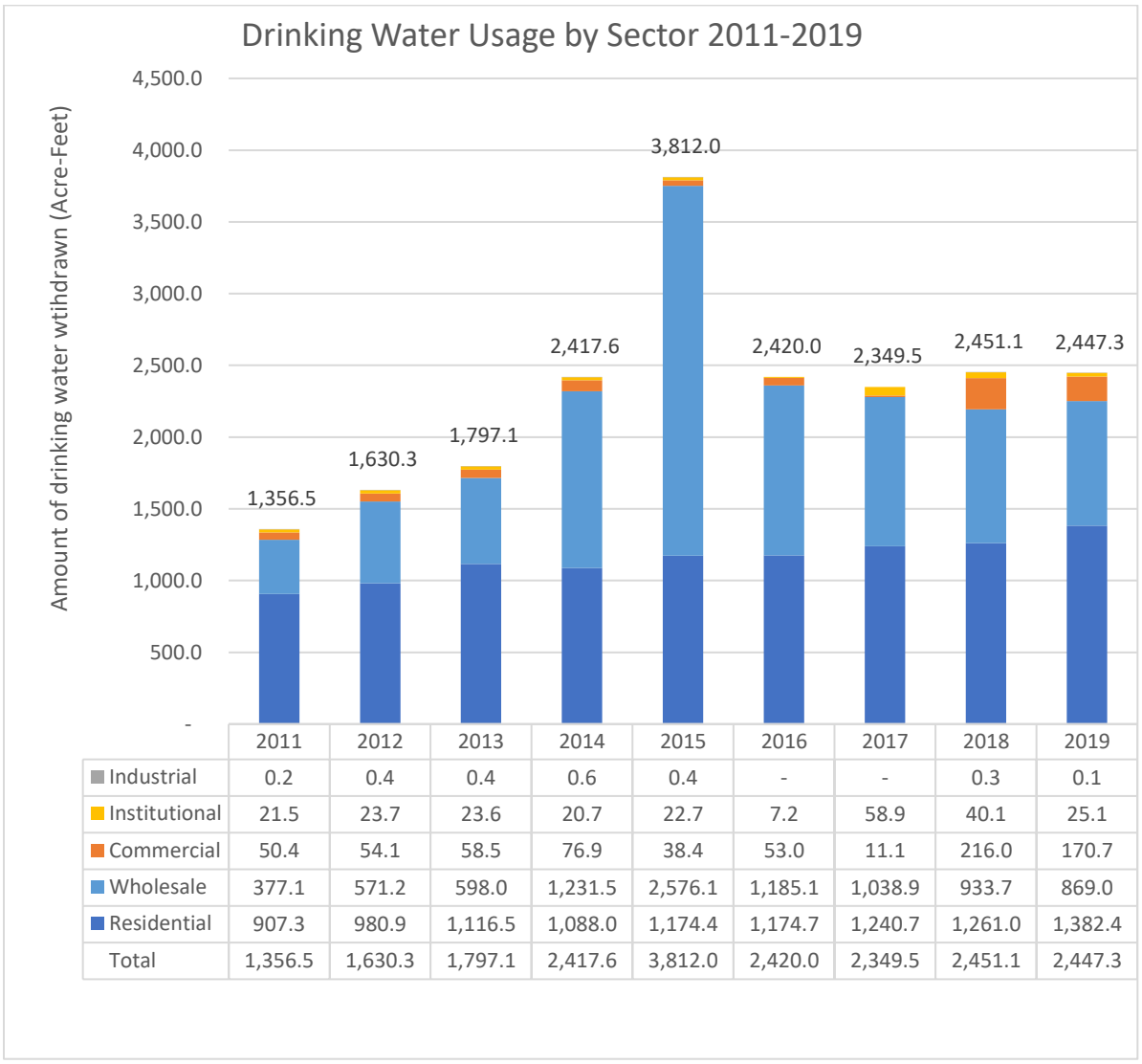
Table 2-6 provides the GPCD of drinking and secondary water used in Saratoga Springs in 2019 broken down by type. As seen in the table, the consumption of secondary water within the residential sector is nearly double that of drinking water use.

Table 2-6: Drinking and secondary water use by type in GPCD

Type	Drinking Water Use (GPCD)	Secondary Water Use (GPCD)
Residential	34	67
Commercial	4	5
Industrial	0.003	0
Institutional	0.62	.56
Total	**39**	**73**

Figure 2-5 represents the volume of drinking water used in Saratoga Springs from 2011 to 2019 broken down by type (residential, commercial, industrial, etc.). Apart from the years

in which the “Wholesale” water (drinking water used for irrigation purposes) exceeded all other uses, residential is the dominate use of drinking water in the City.



	2011	2012	2013	2014	2015	2016	2017	2018	2019
Industrial	0.2	0.4	0.4	0.6	0.4	-	-	0.3	0.1
Institutional	21.5	23.7	23.6	20.7	22.7	7.2	58.9	40.1	25.1
Commercial	50.4	54.1	58.5	76.9	38.4	53.0	11.1	216.0	170.7
Wholesale	377.1	571.2	598.0	1,231.5	2,576.1	1,185.1	1,038.9	933.7	869.0
Residential	907.3	980.9	1,116.5	1,088.0	1,174.4	1,174.7	1,240.7	1,261.0	1,382.4
Total	1,356.5	1,630.3	1,797.1	2,417.6	3,812.0	2,420.0	2,349.5	2,451.1	2,447.3

Figure 2-5: Drinking water usage by type 2011-2019

Figure 2-6 includes the total gallons per capita per day use of drinking water from 2016 to 2019, the total gallons per capita per day use of secondary water from 2016 to 2019, and the corresponding sum of these sources. This accounts for system losses in both drinking and secondary systems. The percent loss of the secondary system was assumed to be the same as the drinking system each year. System losses are discussed in more detail in Section 2.5.2.

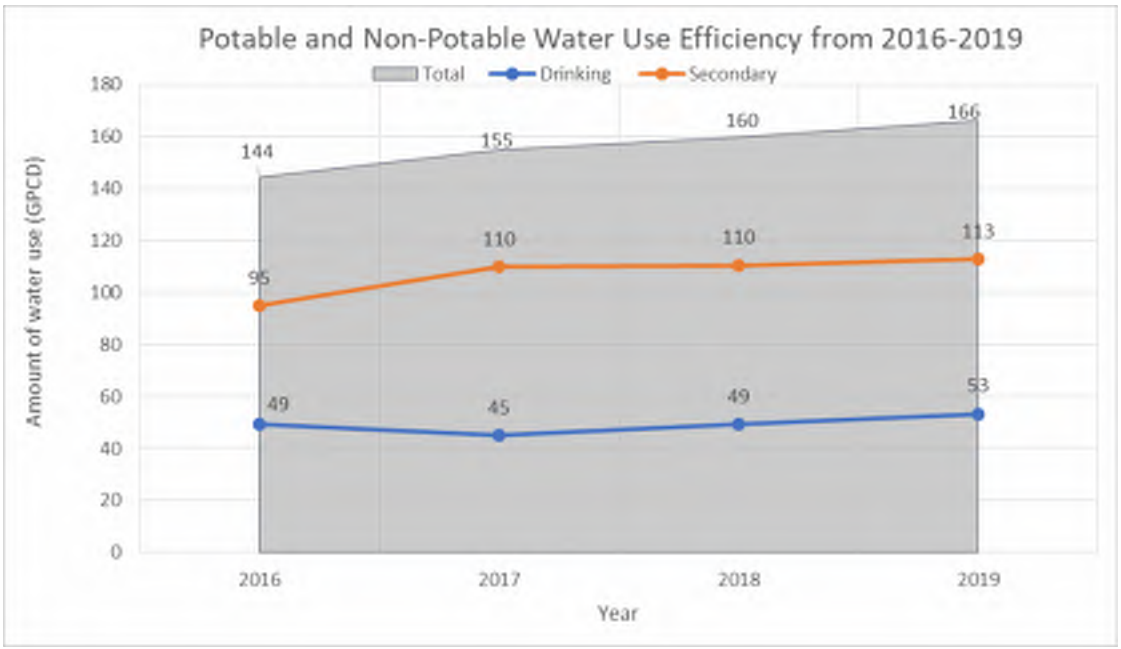


Figure 2-6: Drinking and secondary water use efficient 2016-2019

2.5 Water Measurement

2.5.1 Metering and Measuring

Water meters are a critical tool used to track water use and incentivize conservation. The summary of current water measurement methods and practices are listed below in Table 2-7.

Table 2-7: Summary of water measurements and practices

Percent of Meters Connected	
	Drinking Water- 100% Secondary Water- 99%
Reading Frequency	
	Supply- Everyday Demand- Hourly
Calibration Schedule	
	No existing calibration schedule. Meters are calibrated when an issue is noticed.
Replacement Schedule	
	Meters are replaced when an issue arises. Estimated meter life- 10 years

2.5.2 System Water Loss Control

The City uses its customer portal to help determine when there is a leak by allowing the Utility Department and customers see current and past water use and identify any issues. The water usage customer portal allows residents to see their water usage in real time and

make monthly and yearly comparisons for both their secondary and culinary systems as a part of the ongoing water conservation effort. This will help customers view their monthly usage and allow them to identify potential leaks in their culinary and secondary systems. Customers are also able to use this portal to run a leak report. Table 2-8 provides the information associated with system water loss control volumes, revenue, and minimization practices for the drinking water system from 2019.

Table 2-8: Summary of system water loss control

Volume of Water Loss (Acre-feet)
592[1]
Estimated Water Loss %
19.48 %
Revenue Loss (USD)
$ 1,028,863[2]
Minimization Practices
Advanced metering infrastructure (AMI) has been placed on each drinking water connection and performs a reading every 15 minutes. Abnormal readings will send a notification to the City for them to investigate further. This information combined with the citizen's ability to identify issues in their own system provides a stable leak identification and minimization practice.

1. Water loss= Water Production- Total Retail Water Use- Wholesale Water [592= 3039-1578-869] Acre-feet
2. Revenue loss= Water Loss x ($ Rate/Gallons) [$1,028,863= (168,928,347 gallons x ($17.75/3,000 gallons)) + (23,942,860 gallons x ($1.65/1,000 gallons))]

The rates found in Section 3.1 were used to calculate the revenue losses in 2019. It was assumed that of the 592 acre-feet of water loss, 519 acre-feet can be attributed to residential use and 73 acre-feet to non-residential use. This assumption was made based on a ratio of the annual residential retail usage to total usage. This was then applied to wholesale water use and production. Based on this ratio, 88% of water use is attributed to residential while 12% is attributed to non-residential. The rate of $17.75 per 3,000 gallons of water was used to calculate the losses associated with residential use and the rate of $1.65 per 1,000 gallons was used to calculate the losses associated with non-residential use.

According to the EPA, the industry standard for water loss in a municipal system is 16%. The estimated water loss for Saratoga Springs is higher than this standard by about 3.5% for 2019. However, when looking at past years of data, Saratoga Springs has an estimated loss ranging from 10 to 16%. The higher losses in 2019 may be attributed to flushing practices and hydrant testing which is known to expend significant amounts of water from the system.

3.0 Billing

In 2014, the City of Saratoga Springs adopted changes to the drinking and secondary water rates that were recommended by Zion's Bank Public Finance. In 2015, the City adopted a tiered rate system for secondary water which considers the amount of land that each lot resides on.

3.1 Drinking Water Pricing

Table 3-1 provides a breakdown of the pricing for drinking water within Saratoga Springs. For residential, a base rate of $17.75 is charged per month for both single and master metered units which includes the first 3,000 gallons of water used. Residential water usage that exceeds 3,000 gallons per month incurs an additional usage rate proportional to the amount of water used. For non-residential customers there is a flat rate of $1.65 per 1,000 gallons of water used and a monthly minimum charge based on the size the of the meter in inches. These rates are as of January 2021.

Table 3-1: Drinking water pricing

Residential Minimum Monthly Charge (Single Unit)
$17.75 (Includes 1st 3,000 gal.)
Residential Minimum Monthly Charge (Master Metered)
$17.75 x # of Units Served (Includes 1st 3,000 gal. multiplied by # of Units Served)

Residential Monthly Usage Rate (Per 1,000 gal.) (For Master Metered systems multiply gal. by # of Units)	
Gallons 3,001 – 7,000	$2.40
Gallons 7,001 – 12,000	$3.25
Gallons 12,001 - ∞	$4.00

Non-Residential Monthly Usage Rate (Per 1,000 gal.) (For Master Metered systems multiply gal. by # of Units)
$1.65

Non-Residential Minimum Monthly Charge (Based on meter size)	
¾”	$17.75
1”	$23.08
1.5”	$28.40
2”	$46.15
3”	$177.50
4”	$225.43
6”	$339.03
8”	$468.60

3.2 Secondary Water Pricing

Table 3-2 provides a breakdown of the pricing for secondary water within Saratoga Springs. A base fee is charged to single family residential and non-single family residential (includes commercial, industrial, institutional, and all others) of $16.25 per quarter acre and $65 per acre, respectively. Additionally, each unit or property is provided with a monthly allotment of water based upon the total lot acreage for single family residential and the irrigable lot area for non-single family residential. These rates are as of January 2021.

Table 3-2: Secondary water pricing

Single Family Residential Irrigation Base Fee (Per ¼ Acre)
$16.25
Non-Single Family Residential Irrigation Base Fee (Per Acre)
$65

Single Family Residential Monthly Allotment (Per 1,000 gal.)	
Gross lot acreage x 108.79	
Non-single Family Residential Monthly Allotment (Per 1,000 gal.)	
Irrigable lot area x 152.99	
Allotment Usage Rate (Per 1,000 gal.)	
0 to 75%	$0.35
75 to 100%	$1.00
100 to 150%	$1.25
150 to 200%	$2.00
200 to 250%	$3.00
Above 250%	$3.80

3.3 Current Rate Structure Policies

The phases listed below show the various rate policies the City has adopted for regulating water use from 1999 to 2020. Some of these phases include steps for promoting and incentivizing water conservation.

Phase I (Implemented 06/01/1999)

- Bill Form– Water bills are provided in a form which displays current readings and current consumption.
- Monthly Billing– Water is billed monthly.
- Monthly Reading– Meters are read as often as practicable.

Phase II (Implemented 06/01/2001)

- Definition of Fixed Cost– Defined the City's fixed water system costs on drinking water bills in the form of a base rate.
- Water Budget Data Base– The City developed a water budget database for each water customer.
- Ascending Rate Block Structure– A tiered drinking water rate structure was implemented to encourage water conservation.

Phase III (Implemented 03/01/2014)

- New Drinking Water Rates– The City adopted new drinking and secondary water rates based on recommendations from a rate analysis completed by Zion's Bank in February of 2014 to cover the cost of operating the system and to incentivize water conservation.
- Additional Tiered Rates– The City added additional tiers to its drinking rate structure to further encourage water conservation.

Phase IV (Implemented 08/01/2015)

- Additional Ascending Rate Block Structure– A tiered secondary water rate structure was implemented to encourage water conservation.

4.0 Proposed Level of Service

The level of service for the drinking and secondary water systems has been established by the City's adopted Impact Fee Facilities Plans (IFFP). For drinking water, the policy is to provide an adequate supply of indoor water, fire suppression capacity, and water rights to assure that the system does not run out of water. For secondary water, the goal is to provide an adequate supply of water so that residences and businesses can meet their minimum irrigation needs with sufficient pressures and flows during the irrigation season. Tables 4-1, 4-2, and 4-3 summarize the drinking water and secondary water levels of service adopted in the City's IFFPs per equivalent residential connection (ERC)[1] and per irrigable acre (IA). This includes the use in 2011, the level of service change in 2017, and the level of service change in 2020.

Table 4-1: Drinking water level of service comparison (per ERC)

	2011 Use	2017 Level of Service	2020 Level of Service
Annual Volume (ac-ft/yr)	0.45	0.45	0.3
Peak Day Demand (gpd)	NA	400	375
Peak Day Demand Pressure (psi)	NA	40	40

Table 4-2: Secondary water level of service comparison (per ERC)

	2011 Use	2017 Level of Service	2020 Level of Service
Irrigated Acres (ac-ft/yr)	0.22	0.24	0.24
Average Yearly Demand (ac-ft/yr)	0.97	0.75	0.75
Peak Day Demand (gpm)	2.53	1.8	1.8

Table 4-3: Secondary water level of service comparison (per IA)

	2011 Use	2017 Level of Service	2020 Level of Service
Average Yearly Demand (ac-ft/yr)	4.46	3.13	3.13
Peak Day Demand (gpm)	11.50	7.50	7.50

5.0 Conservation Issues and Goals

5.1 Identified Problems

Saratoga Springs is concerned with the potential waste of water from inefficient indoor water use, outdoor water use, and from system wide losses. While these factors are seemingly negligible due to the City's relatively new water system, when combined with

[1] An ERC is equal to the average drinking water demand of one residential connection.

growth projections and the associated demands that may be placed on the system, these losses may be magnified. The following water management concerns have been identified within Saratoga Springs:

- Water loss from line breaks
- Water theft from hydrants or contractors
- Illegal connections
- Water loss from leaks on the customer and City side
- Inefficient indoor and outdoor water use
- Limited water available within the Utah Lake aquifer (main source utilized)
- A growing population and associated demands

The City's future drinking and secondary water systems will continue to utilize deep groundwater sources from the Utah Lake aquifer to meet the needs of its growing community. The City also meets this need by providing more water to the drinking system via the Central Water Project (CWP) from CUWCD.

Based on growth projections provided in the City's IFFPs, by the year 2030 an additional 1,994 acre-feet of drinking water supply will be required to meet projected demand. An adequate storage and distribution system will also be needed to meet future water needs in the City. By the year 2030 an additional 4,288 acre-feet of secondary water supply will be required to meet projected demand.

It is evident that alternate water sources will need to be developed to meet the long-term water service needs of the City. There is currently a moratorium in place on the transfer of surface water rights to ground water points of diversion in water right areas 54 and 55 (Salt Lake Valley and Utah Valley). Physical groundwater availability is also becoming an issue. Even if additional ground water rights were available, the physical water may not be.

Surface water is the primary remaining source of water for the City's secondary water system. The only planned additional source of drinking water is from CUWCD. The use of reclaimed water is also a potential option to meet future irrigation demands in the City's secondary water system. This reclaimed water could be brought in from an off-site treatment plant or could be part of a future treatment option that is constructed within Saratoga Springs. Coordination with the Timpanogos Special Service District (TSSD) and the Utah Division of Water Rights (DWRi) would be required to implement such a plan.

Saratoga Springs has adopted drinking and secondary water master plans that provide guidelines on how to fully develop the drinking and secondary water systems to meet the future needs of the City. These plans discuss options for the development of water sources as well as future storage and distribution needs. It is expected that future drinking water wells will continue to be located on the east side of the Jordan River due to the higher quality of the water. Future secondary wells could be on either side of the Jordan River, however the best and most efficient distribution system would result from having secondary water sources evenly distributed throughout the City

5.2 Conservation Goals

With plans for extensive future growth, the management of the City's water supply is vital to the development of the City as a whole. It is estimated that water conservation efforts will require the administrative effort of at least one City staff member. Below are the goals and recommendations the City and community can pursue to build upon and improve water conservation efforts in the City of Saratoga Springs.

Overall Water Use Reduction Goals

Match secondary water use to adopted level of service

One of the City's water use reduction goals is to sustain the level of service adopted in the City's secondary water IFFP and the amount of water being used by residents and businesses.

Meet the Regional Water Conservation Goal for Utah County

The City strives to reach the conservation goal set forth by the Utah Division of Water Resources for Utah County. This requires a 2% reduction in water use from the baseline in 2019 by the year 2030.

6.0 Water Conservation Measures and Implementation

Saratoga Springs has adopted ordinances that help reduce water consumption, installed infrastructure to address water supply shortages, and implemented metered water use rates with tiers to incentivize residents to conserve water. Below are the water conservation measures that Saratoga Springs has adopted or are planning to adopt to help improve water conservation efforts and meet the City's overall water use reduction goals.

Completed Master Plans

The City has created hydraulic models and master plans of the drinking and secondary water systems. These adopted master plans account for the growth of the system and the need to expand water supply sources to meet future demands in an efficient and economical way.

Tiered Non-Residential Drinking Water Rate

Currently, the City uses a flat rate for drinking water use for non-residential lots. To deter further excessive water use, Saratoga Springs has a goal to create a tiered system that can be applied to non-residential lots in the hopes that they can be incentivized to conserve water.

24-hour On Call Emergency Phone

The City has a 24-hour phone number for residents to call in the event of an emergency. This can be used for the rapid identification and response to water leaks to help eliminates water waste.

Customer Water Usage Portal

The City has created an online portal that can be accessed by residents that have a metered property registered under their name. Residents can track and monitor their water use in real time, giving them the power to identify any issues or leaks in their own system. The portal can display historical data and will notify residents of leaks or other issues in their system. This was implemented with the goal of reducing residential water use while also making the identification of water waste in the system a more efficient and accessible process. Figures 6-1, 6-2, and 6-3 demonstrate a few of the portal's capabilities.



Figure 6-1: Comparison of resident water use each month from 2013-2017

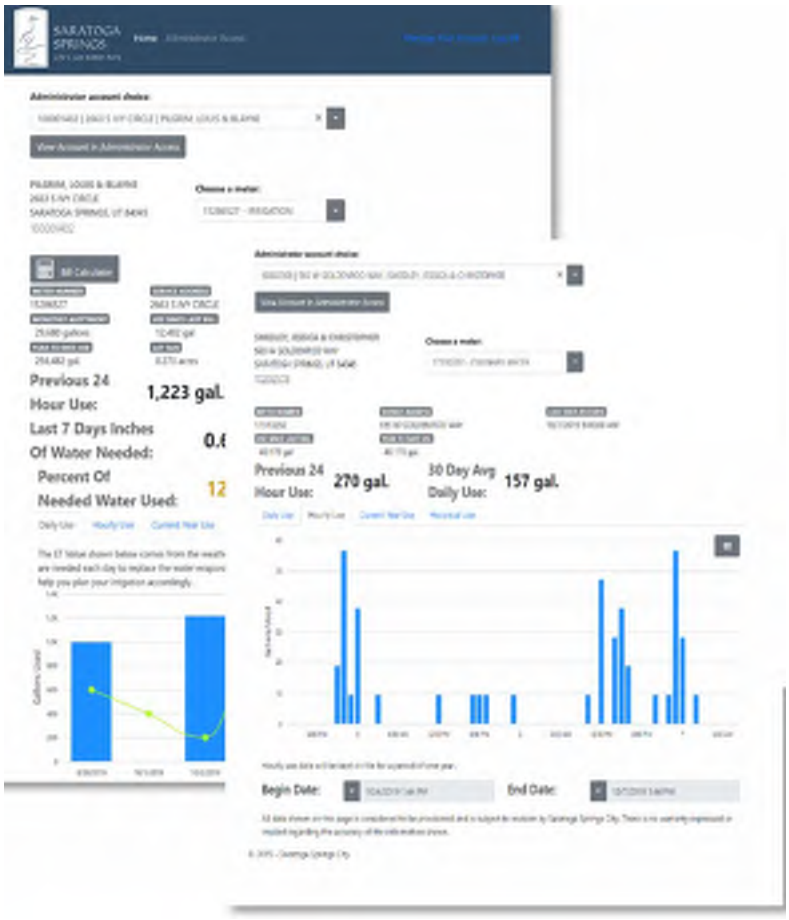


Figure 6-2: Resident water use over a 24-hour period

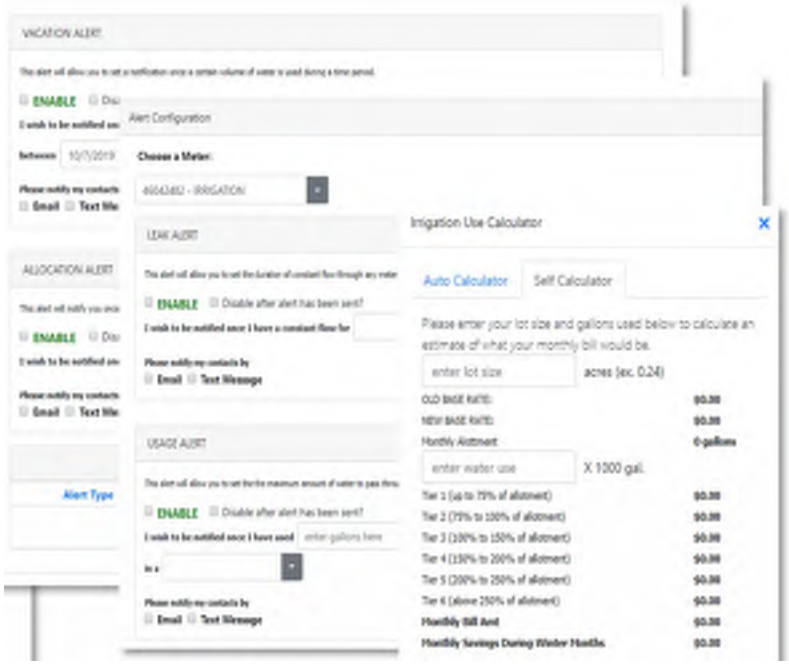


Figure 6-3: Smart controls for turning sprinkler system on and off

Secondary Water System

The City has completed the installation of a secondary system that is separate from the drinking water system. The secondary system supplies irrigation demands for residential and non-residential developments. Its separation from the drinking system conserves higher quality water (treated) for future growth and allows the City to utilize lower quality water for irrigation (untreated).

Metered Secondary Water Rate with Tiers

The City has successfully transitioned from a flat rate for secondary water use to a metered rate with tiers for residential use. The tiers set an increasing rate for water use that helps deter excessive use. Rates can be found in Section 3.2.

Installation of Secondary Water Meters

The City has installed meters at all known secondary water connections. This allows the City to bill residents according to their water use rather than a flat rate as was administered prior to 2015. The recently installed meters, along with tiered rates, have resulted in lower water use among residents. Table 6-1 shows the difference in residential water use before and after the installation of meters.

Table 6-1: Residential secondary water use before and after meters

	Before Meters		After Meters	
	Per Residence	**Per Irrigated Acre**	**Per Residence**	**Per Irrigated Acre**
Average Yearly Water Use (acre-feet)	0.97	4.46	0.78	2.54
Average Peak Day Water Use (gpm)	2.53	11.50	1.57	5.11

Locate Unknown Secondary Connections

Saratoga Springs is aware that there are secondary water connections within the city that have not been documented or had meters placed on them. The City is determined to continue to locate and meter all unknown secondary connections.

Identify Remaining Crossover Locations

Although Saratoga Springs has an independent secondary water system, there are a few remaining locations throughout the city where drinking water is pulled into the secondary system. The City is focused on locating these remaining crossover points and installing the correct secondary pipes that are needed.

Smart Irrigation Systems

The Saratoga Springs Parks Department is moving toward using the smart irrigation system, *weatherTRAK*, to monitor and track water use according to the watering needs throughout the city. This is now standard practice for all new parks and open space within the City. In addition, existing public parks are actively being converted to the *weatherTRAK* system. Of the 29 public parks in Saratoga Springs, 7 have had *weatherTRAK* installed with the intent of converting the remaining 22 parks in the coming years. W*eatherTRAK* can be precisely controlled, monitored, and adjusted remotely through a central cloud-based system. Smart irrigation systems can track flows and send notifications on malfunctions in real time which allows damaged irrigation to be shut off immediately. This in turn allows the City to make timely repairs, avoiding unnecessary water waste.

City-wide Fixed Network System

Saratoga Springs has successfully installed a wireless city-wide fixed network that uses strategically placed towers to gather meter data in real-time. The meters send signals to the towers to collect water use data and store it in the City's database that is accessible to residents. Having a fixed network enables customers to better understand and manage their water use and associated water bill. Water leaks on the homeowner's side of the water meter can be identified and repaired quickly by the homeowner themselves. The fixed network improves the accuracy of meter reads, eliminates the need for on-site readings, and enhances the efficiency of how meter data is used in the overall water system. Figure 6-4 is an example of how the city-wide fixed network system operates.

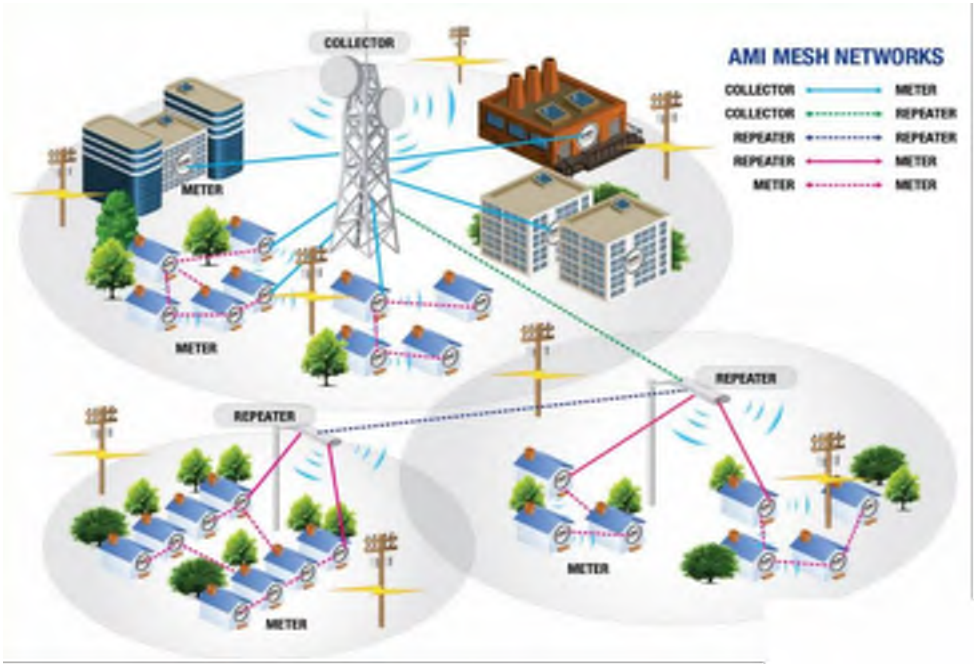


Figure 6-4: Example of a city-wide fixed network system

6.1 Timeline for Action

Match Drinking and Secondary Water Use to Adopted Level of Service

Based on utility billing, the City has already achieved this goal for the drinking water system. In the case of secondary water use, this means a reduction of almost 10% per irrigable acre of water use on an annual basis to meet the existing level of service.

Meet the Regional Water Conservation Goal for Utah County

Saratoga Springs hopes to have met the conservation goals set by the Division of Water Resources before the 2026 Water Conservation Plan. This includes contributing to the regional reduction in water use from the baseline (222 GPCD) set in 2015 by 20% (179 GPCD).

6.2 Evaluation Process

The City will continue to evaluate its well pumping rates and utility billing to track the progress towards reaching the goals outlined in this Water Conservation Plan. Throughout the year the Public Works Department will evaluate water consumption, work with the City's Public Involvement Officer, and support public education programs. Updates will be provided to the City Council as well as documented in the 2026 Water Conservation Plan.

7.0 Public Information, Education, and Programs

To further raise awareness about water conservation, the City is looking into programs that can help educate residents on how to lower water usage. Many programs also hold classes that the public can attend to gain knowledge on how to be more conservative with their water usage.

Consumer Education

Water Conservation Gardens- Water Conservation Garden can be found throughout Utah. They were created to promote waterwise landscaping techniques by establishing water conservation demonstration gardens. The gardens provide visual resources on what waterwise landscaping looks like and offer educational resources to help residents implement some of the ideas in their own landscapes.

Lawn Watering Guide- The Weekly Lawn Watering Guide is an online tool that recommends how many days per week to water, based on extensive research, specific plant needs and weather conditions for each county. By providing this resource, the hope is to avoid problems with water waste in Utah.

Water-Wise Plants- This program was developed to provide residents in Utah with the resources needed to help them identify water-wise plants in the region. These plants are drought resistant, adapted to the climate in Utah, and are accessible at local markets.

Community Awareness Programs and Rebates

Free Water Checks- Utah offers free water checks to its residents. This includes checking the efficiency of a resident's automatic sprinkler system and a customized irrigation schedule. The soil type, grass root depth, water pressure, sprinkler efficiency and precipitation rates are also determined.

Flip your Strip Rebate- Utah residents are offered a rebate when they replace their park strip with a water-efficient design.

Toilet Replacement Rebate- Utah residents who are replacing a toilet that uses more than 1.6 gallons per flush and were installed in homes built before 1994 qualify to receive a rebate on their replacement.

Smart Controller Rebates- Utah residents who would like to utilize smart controllers for their sprinkler system qualify for a rebate. Smart controllers help save water by automatically adjusting sprinkler schedules based on weather and landscape needs.

Open Public Hearing and Comment– Part of at least one City Council meeting every five years is devoted to a discussion and formal adoption of the City's Water Conservation Plan. Public comment will be allowed on the water conservation plan following State Law.

Notification Procedure– Upon adoption of the Water Conservation Plan, every five years, the updated plan is made available on the City's website and notification is sent to the media and residents of the City of its recent adoption and availability.

*Saratoga Springs City Website***–** The city website includes information and educational material about water conservation. Also included is the most recent version of the Water Conservation Plan, city code related to water policy, water quality reports, the emergency leak notification hotline, and contact information for city employees.

8.0 Conservation Ordinances and Standards

The City has adopted a Water Utilities Ordinance (Chapter 8.01 of the Saratoga Springs City Code, Title 8 Public Utilities and Services). This ordinance governs the implementation and operation of the City's water system. This portion of the City Code was first adopted in 1998 and was amended in 2008, 2011, 2014 and 2020. The following portions of Chapter 8.01 relate to water conservation:

Section 8.01.06 Drinking Water Right Requirements for Development- For all residential and non-residential development, 0.30 acre-feet of drinking water rights and source are required per ERC and must be dedicated to or procured from the City prior to the time of recording of the plat.

Section 8.01.06 Secondary Water Right Requirements for Development- For all residential and non-residential development, 3.13 acre-feet of secondary water rights and sources are required per net irrigable acre and must be dedicated to or procured from the City prior to the time of recording of the plat.

Section 8.01.11 Use without Payment Prohibited– It is unlawful for any person to use the City water system without paying the proper fees. This includes opening any fire hydrants, stopcocks, valves, or other fixtures attached to the water system unless in agreement or resolution with the City.

Section 8.01.13 Separate Connections– It is unlawful for two or more families or service users to be supplied from the same service pipe, connection, or water meter unless special permission for such combination usage has been granted by the Public Works Director and the premises served are owned by the same owner.

Section 8.01.17 Excessive Use– It is unlawful to use an excessive number of plumbing fixtures simultaneously or to use sprinkler combinations or fixtures outlets in such a way that will affect the pressure or supply of water. The City Council may put in place restrictions on the maximum flow, fixture count, sprinklers, or any combination of these if said impacts ensue.

*Section 8.01.17 Scarcity of Water***–** During a time of water scarcity, the City Council may limit the use of water to such extent as may be necessary.

*Section 8.01.18 Waste of Water***–** The City Council may terminate the right of an individual to use drinking water, with reasonable notice given, if they have been cited with needlessly wasting water. This may include allowing water to be wasted by stops, taps, valves, leaks, etc., or by wastefully running water from hydrants, faucets, etc.

*Section 8.01.19 Water Meters***–** All connections made to the City Water System must have a water meter installed. This allows for tracking of water use, capacity, and the associated monetary charges.

*Section 8.01.24 Cross Connections and Backflow***–** Any cross connection made between the secondary and drinking water system is unlawful unless the City gives approval for said connection. The City will be held responsible for the protection of the drinking water supply from contamination or pollution caused by backflow.

Chapter 14.02 of the City Code highlights ordinances related to water conservation. See the following portions of Chapter 14.02:

> *Time of Day Watering Parameters*- Sprinkler irrigation of all lawns and landscapes is prohibited between 10:00AM and 6:00PM of which any infractions are punishable by fine.

The requirements for new developments to account for stormwater and groundwater recharge falls within Title 18 Building and Construction, Chapter 18.06 Storm Water Regulations, of the City Code. The following portions of Chapter 18.06 relate to water conservation:

> *Section 18.06.04 Performance Criteria for Stormwater Management*- Stormwater management practices should utilize pervious areas for stormwater runoff and infiltration from driveways, sidewalks, rooftops, parking lots, and landscaped areas to provide treatment for water quality and aid in groundwater recharge.
>
> *Section 18.06.04 Sediment and Erosion Control Plan*- The City requires all new construction to prepare a sediment and erosion control plan that includes a description of on-site measures to be taken to recharge surface water into the ground water system through infiltration.

The Model Landscape Ordinance falls within Title 19 Land Development, Chapter 19.06 Landscaping and Fencing, of the City Code. The following portions of Chapter 19.06 relate to water conservation:

> *Section 19.06.06 Planting Standards and Design Requirements*- All nonresidential, newly constructed buildings and expanded structures are required to install an automated water-conserving irrigation system including sprinkler heads and rain sensors. While irrigation systems are required for all landscaped areas, all systems shall be efficient in the use of water such as the installation of drip lines for shrubs and trees.
>
> *Section 19.06.06 Planting Standards and Design Requirements* - Fifty percent of all trees and shrubs species are required to be drought tolerant.
>
> *Planting and Shrub Beds*- Planting and shrub beds are encouraged to be used to meet the landscaping requirement while also conserving water.

9.0 Contact

The contacts provided in this section are those who are responsible for meeting the water conservation goals of Saratoga Springs.

- Public Works Director, Jeremy Lapin, JLapin@saratogaspringscity.com
- Assistant Public Works Director, George Leatham, gleatham@saratogaspringscity.com

- Mayor, Jim Miller, jmiller@saratogaspringscity.com

10.0 Notification Procedure

This Water Conservation Plan will be scheduled for a public hearing during a City Council Policy Meeting. Notification of the public hearing will be made in compliance with State Laws and residents, local business owners, and all other stakeholders will be encouraged to comment. An update and public hearing for this Water Conservation Plan will be required in 2026 and every five years thereafter. The minutes and notification procedure of the public hearing will be included in Appendix C of this plan.

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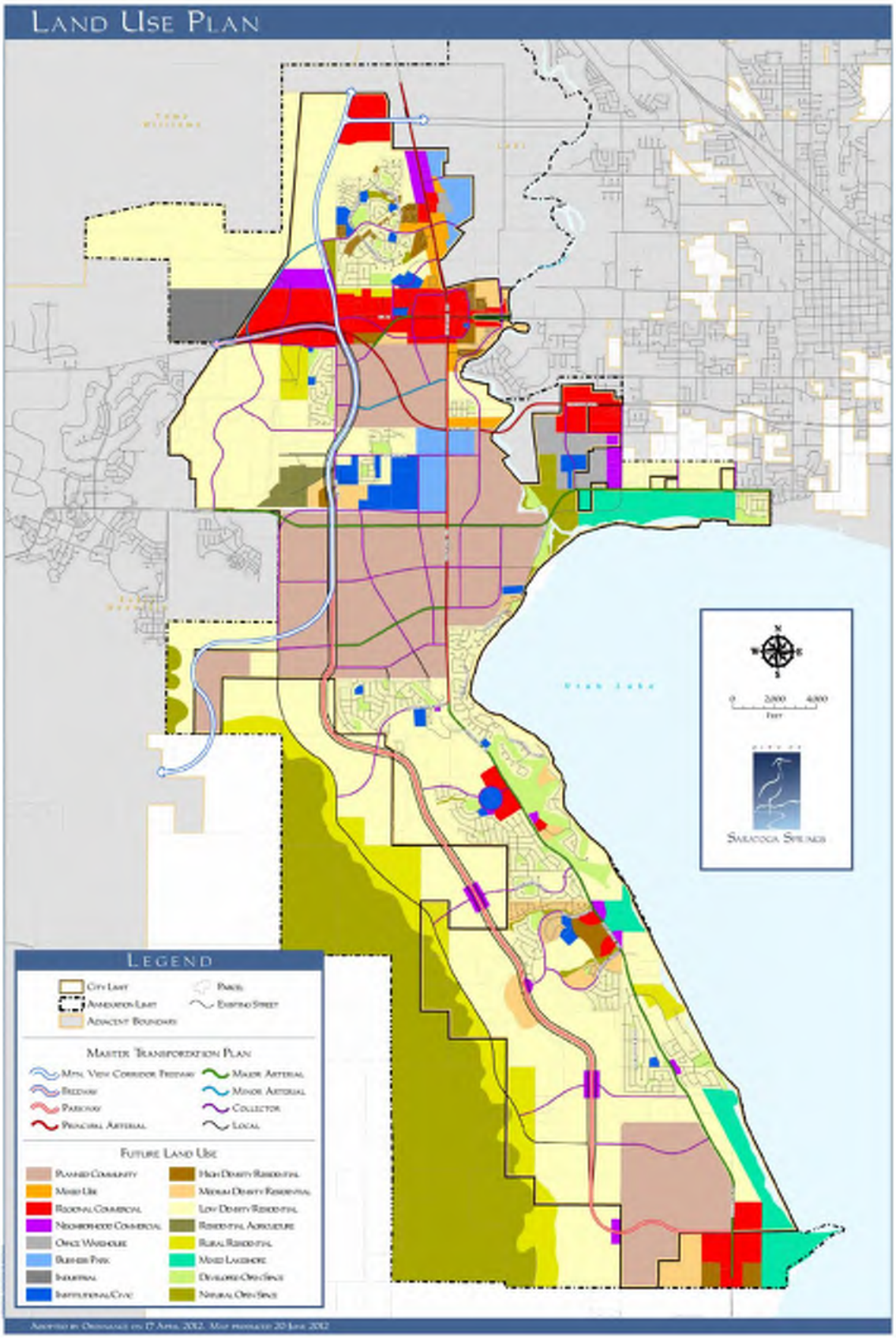
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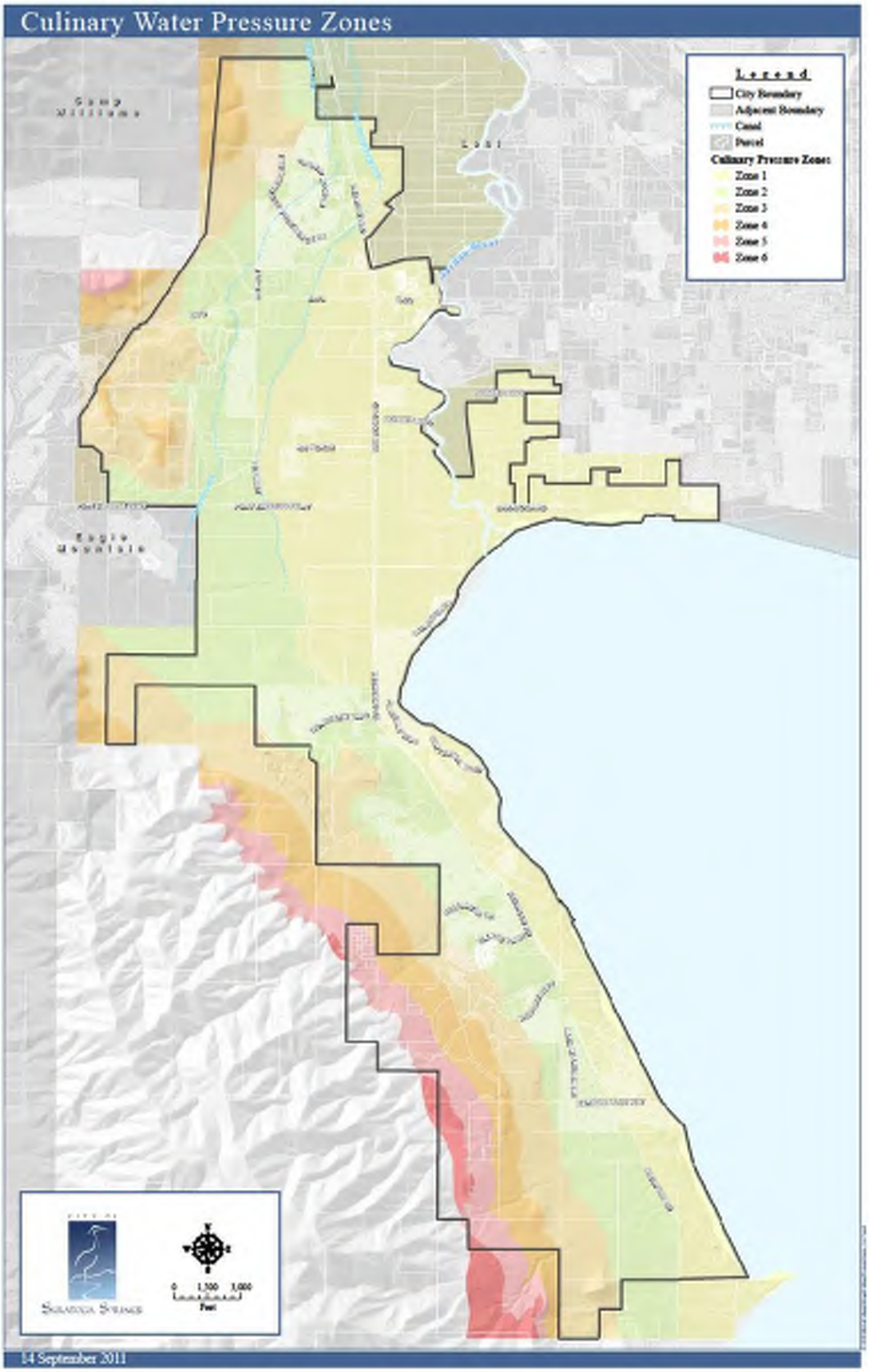
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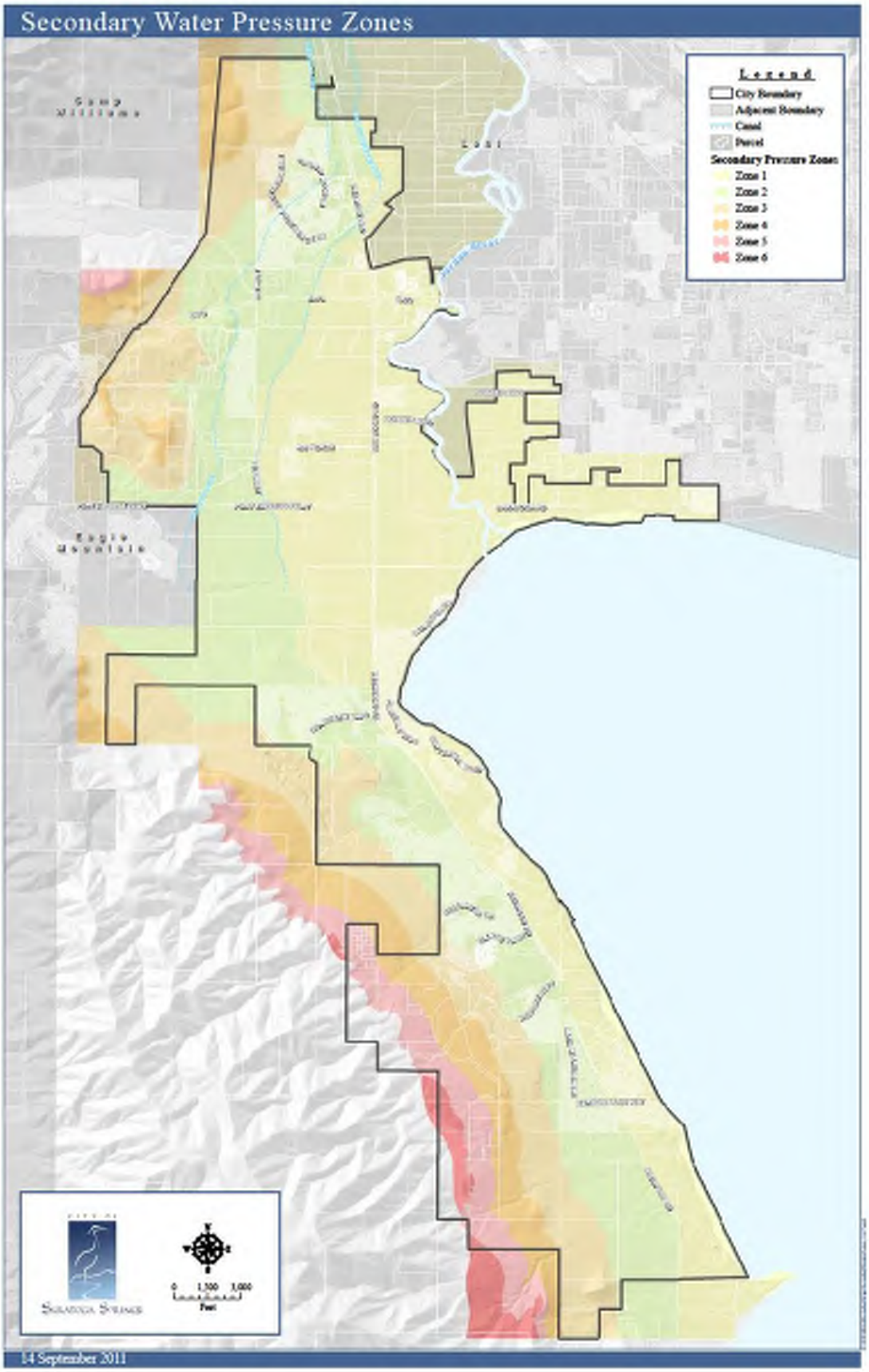
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Appendix A

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Adjacent Boundary
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Existing Street
Master Transportation Plan
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Freeway
Parkway
Principal Arterial
Major Arterial
Minor Arterial
Collector
Local
Future Land Use
Planned Community
Mixed Use
Regional Commercial
Neighborhood Commercial
Office/Warehouse
Business Park
Industrial
Institutional/Civic
High Density Residential
Medium Density Residential
Low Density Residential
Residential Agriculture
Rural Residential
Mixed Lakeshore
Developed Open Space
Natural Open Space
Utah Lake
0 2000 4000
Feet
Saratoga Springs


Culinary Water Pressure Zones
Legend
City Boundary
Adjacent Boundary
Canal
Parcel
Culinary Pressure Zones
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Eagle Mountain
Saratoga Springs
0 1,500 3,000
Feet
14 September 2011


Secondary Water Pressure Zones
Legend
City Boundary
Adjacent Boundary
Canal
Parcel
Secondary Pressure Zone:
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Camp Williams
Eagle Mountain
Saratoga Springs
0 1,500 3,000
Feet
14 September 2011

Appendix B

Certification of Adoption

The City Recorder for the City of Saratoga Springs, Utah hereby certifies that the attached Water Conservation Plan has been established and adopted by the City Council for the City of Saratoga Springs, Utah on MONTH DAY, 2021

_____	_____	_____
Name	Title	Date

Appendix C

Minutes and Notification Procedure of Public Hearing

SARATOGA SPRINGS

Life's just better here

PRESSURIZED IRRIGATION MASTER PLAN AND CAPITAL FACILITY PLAN

(HAL Project No.: 360.64.100)

HANSEN ALLEN & LUCE inc
ENGINEERS

January 2026

CITY OF SARATOGA SPRINGS

PRESSURIZED IRRIGATION MASTER PLAN

(HAL Project No.: 360.63.200)

Kai Krieger, P.E.
Project Manager

HANSEN ALLEN & LUCE inc
ENGINEERS

January 2026

ACKNOWLEDGMENTS

Successful completion of this master plan was made possible by the cooperation and assistance of many individuals, including the Mayor of Saratoga Springs, City Council Members, and City Staff personnel as shown below. We sincerely appreciate the cooperation and assistance provided by these individuals.

Saratoga Springs Government
Jim Miller, Mayor
Audrey Barton, City Council Member
Christopher Carn, City Council Member
Michael McOmber, City Council Member
Lance Wadman, City Council Member
Stephen Wilden, City Council Member
Jess Campbell, Fire Chief

Saratoga Springs Staff
Mark Christiansen, City Manger
Jeremy Lapin, P.E., City Engineer & Public Works Director
Dean Free, P.E., Assistant Public Works Director - Utilities
Daniel McRae, P.E., Assistant City Engineer
Jeff Pearson, P.E., Engineer II
Kyle Kingsbury, P.E., Engineer II
Ken Knight, P.E., Engineer II
Scott Petrik, Engineer I

Hansen, Allen & Luce, Inc.
Steven Jones, P.E., C.E.O.
Kai Krieger, P.E., Project Manager
Tyler Daynes, P.E. Project Engineer
Kathryn Floor, Project Analyst

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GLOSSARY OF TECHNICAL TERMS

Average Daily Flow: The average yearly demand volume expressed in a flow rate.

Average Yearly Demand: The volume of water used during an entire year.

Buildout: When the development density reaches maximum allowed by planned development.

Demand: Required water flow rate or volume.

Distribution System: The network of pipes, valves and appurtenances contained within a water system.

Drinking Water: Water of sufficient quality for human consumption. Also referred to as Culinary or Potable water.

Equivalent Residential Connection: A measure used in comparing water demand from non-residential connections to residential connections.

Head: A measure of the pressure in a distribution system that is exerted by the water. Head represents the height of the free water surface (or pressure reduction valve setting) above any point in the hydraulic system.

Head Loss: The amount of pressure lost in a distribution system under dynamic conditions due to the wall roughness and other physical characteristics of pipes in the system.

Peak Day: The day(s) of the year in which a maximum amount of water is used in a 24-hour period.

Peak Day Demand: The average daily flow required to meet the needs imposed on a water system during the peak day(s) of the year.

Peak Instantaneous Demand: The flow required to meet the needs imposed on a water system during maximum flow on a peak day.

Pressure Reducing Valve (PRV): A valve used to reduce excessive pressure in a water distribution system.

Pressure Zone: The area within a distribution system in which water pressure is maintained within specified limits.

Service Area: Typically, the area within the boundaries of the entity or entities that participate in the ownership, planning, design, construction, operation and maintenance of a water system.

Static Pressure: The pressure exerted by water within the pipelines and other water system appurtenances when water is not flowing through the system, i.e., during periods of little or no water use.

Storage Pond: A facility used to store, contain and protect water until it is needed by the customers of a water system. Also referred to as a Storage Reservoir.

Transmission Pipeline: A pipeline that transfers water from a source to a reservoir or from a reservoir to a distribution system.

Water Conservation: Planned management of water to prevent waste.

ABBREVIATIONS AND UNITS

ac	acre [area]
ac-ft	acre-foot (1 ac-ft = 325,851 gal) [volume]
CIP	Capital Improvement Plan
CFP	Capital Facilities Plan
CUWCD	Central Utah Water Conservancy District
CWP	Central Water Project
DBP	disinfection byproduct
DW	Drinking Water
EPA	U.S. Environmental Protection Agency
EPANET	EPA hydraulic network modeling software
ERC	Equivalent Residential Connection
ft	foot [length]
ft/s	feet per second [velocity]
gal	gallon [volume]
gpd	gallons per day [flow rate]
gpm	gallons per minute [flow rate]
HAL	Hansen, Allen & Luce, Inc.
hp	horsepower [power]
hr	hour [time]
IFA	Impact Fee Analysis
IFFP	Impact Fee Facilities Plan
in.	inch [length]
irr-ac	irrigated acres
kW	kilowatt [power]
kWh	kilowatt hour [energy]
MG	million gallons [volume]
mi	mile [length]
PI	Pressurized Irrigation
PRV	Pressure reducing valve
psi	pounds per square inch [pressure]
s	second [time]
SCADA	Supervisory Control And Data Acquisition
yr	year [time]

CHAPTER 1 INTRODUCTION

PURPOSE AND SCOPE

The purpose of this master plan is to provide direction to the City of Saratoga Springs (the City) regarding decisions that will be made to provide an adequate pressurized irrigation (PI) system for its customers at the most reasonable cost. Recommendations are based on demand data, growth projections, standards outlined by the Utah Administrative Code, and standard engineering practices. The planning horizon for the master plan is build-out, or approximately 2060. . Buildout facility sizing and maps have been included in Appendix A.

The master plan is a study of the City's PI system and customer water use. The following topics are addressed herein: growth projections, source requirements, storage requirements, and distribution system requirements. Operational parameters for the City's PI system were reviewed and optimized based on stability, ease of use, and cost. Based on this study, needed capital improvements have been identified and conceptual-level cost estimates for the recommended improvements have been provided. The master plan is supported by several supplemental reports, provided in the appendices, including the Zions Growth Projections Memorandum, 40 Year Water Rights Plan, and the PI Chemical Feed Master Plan.

The results of the study are limited by the accuracy of growth projections, data provided by the City, and other assumptions used in preparing the study. It is expected that the City will review and update this master plan every 5–10 years as new information about development, system performance, or water use becomes available. This master plan supersedes all previous master plans for the City's PI system.

BACKGROUND

Saratoga Springs is a city located in northern Utah County, Utah. Since the early 2000s, Saratoga Springs has consistently been among the fastest-growing cities in Utah, and among the fastest-growing in the country. The City has grown rapidly in more recent years, with an estimated population of 59,812 in 2023 (Zions Public Finance, Inc., 2024.) By 2040, the population is expected to reach 128,689 (Zions Public Finance, Inc., 2024.) Figure 1-1 shows the historical and forecasted population from 1998 to 2040.

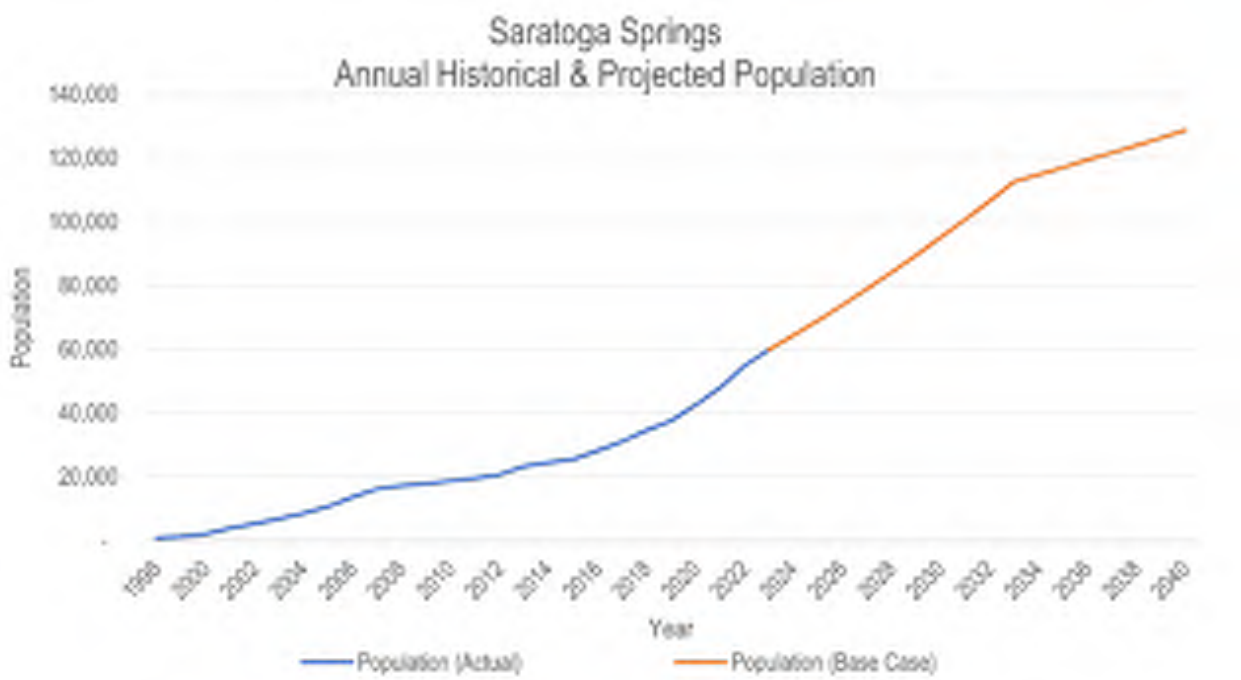


Figure 1-1: Saratoga Springs Annual Historic and Projected Population
(Zions Public Finance, Inc., 2024)

The existing PI system includes five wells, two canals, eleven storage ponds, four pressure zones, and about 192 mi of pipeline with diameters ranging from 6 in. to 30 in. Figure 1-2 shows a map of the existing PI system. The City recognizes that its continued growth necessitates proactively planning additional PI facilities to maintain the current level of service for outdoor water use.

In January 2025, the City prepared an Impact Fee Facilities Plan (IFFP), and Impact Fee Analysis (IFA) for its drinking water (DW) and PI systems. This master plan builds on those studies and extends the planning period to approximately 2060 for the purpose of providing a basic full system layout design to guide new development.

The City's PI system is master planned to be an independent system but is currently supplemented by excess capacity in the DW system. Separate DW and PI pipelines exist in all developments. Some developments, however, rely on the DW system to provide storage and source water to the PI system. As excess capacity in the DW system is needed for future growth, PI system facilities will be constructed, thus freeing up capacity for future drinking water demands.

For both the DW Master Plan and the PI Master Plan, each system was analyzed with no sharing of capacity for future projections. It was assumed for all calculations that PI system facilities will not be supplemented by DW system capacity. The DW system is addressed in a separate master plan report.

MASTER PLANNING METHODOLOGY

The City's PI system consists of water sources, storage facilities, distribution pipes, pump stations, and other components such as filter stations and valves. Design and operation of the individual components must be coordinated so that they operate efficiently under a range of demands and conditions. The system must be capable of responding to daily and seasonal

variations in demand while simultaneously providing sufficient capacity for firefighting and other emergency situations.

Identifying present and future water system needs is essential in the management and planning of a water system. For this study, existing water demands are based on the level of service defined by the 2025 Impact Fee Analysis (HAL 2025b). The report addresses sources, storage, distribution, minimum pressures, hydraulic modeling, capital improvements, funding, and other topics pertinent to City's PI system.

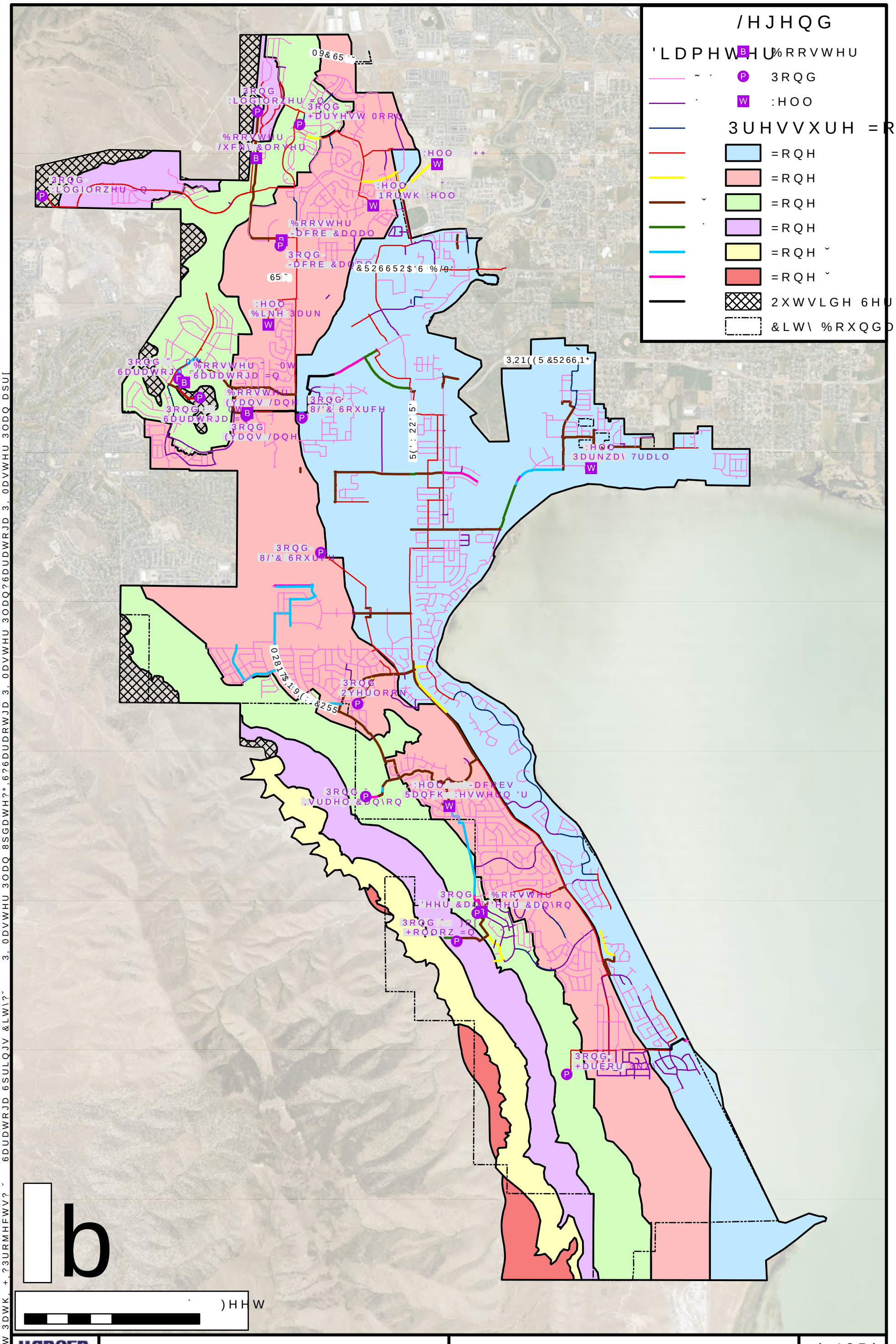
A computer model of the City's PI system was prepared to simulate the performance of facilities under existing and future conditions. System improvement recommendations were prepared from the analysis and are presented in this report.

DESIGN AND PERFORMANCE CRITERIA

Summaries of the key design criteria and demand requirements for the PI system are included in Table 1-1. The design criteria were used in evaluating system performance and in recommending future improvements. Criteria development is described in later chapters.

Table 1-1
Key System Design Criteria

	Criteria	Existing Requirements	Estimated Build-out Requirements
Irrigated Acreage	Existing and Planned Irrigated acreage	2,551	7,500
Source			
Peak Day Demand	Level of Service	19,133 gpm	56,252 gpm
Average Yearly Demand	Level of Service	7,985 acre-ft	23,476 acre-ft
Storage	Level of Service	72.2 ac-ft	212.3 ac-ft
Distribution			
Peak Instantaneous	2 × Peak Day Demand	38,265 gpm	112,503 gpm
Max. Operating Pressure	City Standards	90 psi	90 psi
Min. Operating Pressure	City Standards	30 psi	30 psi


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CHAPTER 2 IRRIGATED ACREAGE

EXISTING IRRIGATED ACREAGE

Outdoor water demands are based on irrigated acreage (irr-ac). The existing irrigated acreage was determined based on development plans and zoning requirements. For typical single-family residential developments, irrigable acreage is 64% of land being developed. Table 2-1 provides a breakdown of the existing irrigated acreage by pressure zone.

Table 2-1
Irrigated Acreage by Pressure Zone

Pressure Zone	Irrigated Acreage
1N	842
1S	184
2N	495
2S	729
3N	222
3S	75
4N	4
Total	2,551

FUTURE IRRIGATED ACREAGE

Future irrigated acreage was estimated using the current irrigated area and adding the land anticipated to be irrigated at build-out (2060), reflecting the maximum development allowed under existing zoning and density standards. Build-out projections were based on the future land use plans. Table 2-2 presents the irrigation factors (irrigated acres/acres) used for each land use type.

Table 2-2
Irrigation Factors by Land Use Type

Description	Land Use Class Code	Irrigation Factor
Business Park	BP	0.1
Community Commercial	CC	0.6
Developed Open Space	DOS	1.0
General Industrial	GI	0.2
Heavy Commercial	HC	0.2
Institutional	IC	0.2
High Density Residential	MF-14, MF-18	0.2
Low Density Residential	R1-40, R1-20, R1-10, R1-9	0.6
Medium Density Residential	R2-8, R3-6, MF-10	0.2
Mixed Waterfront	MW	0.6
Neighborhood Commercial	NC	0.6
Natural Open Space	NOS	0.0
Office Warehouse	OW	0.6
Regional Commercial	RC	0.2
Rural Residential	RR	0.6
Planned Communities		
Brixton Park	PC	0.4
City Center	PC	0.2
Larry H. Miller (SITLA)	PC	0.4
Legacy Farms	PC	0.3
Mt. Saratoga	PC	0.4
Pelican Point (Teguayo)	PC	0.3
SLR Annex	PC	0.3
SLR City Center	PC	0.2
Wander/Jordan Promenade	PC	0.3
Wildflower	PC	0.3

Based on the future land use plan and the irrigation factors shown in Table 2-2, build-out irrigated acreage was calculated for each pressure zone as shown in Table 2-3. The northern and southern segments of Zones 1 and 2 are expected to consolidate into a single, unified pressure zones as future development occurs. For the purposes of this report, existing source and storage requirements will be separated into north and south areas, while future requirements will combine the north and south portions for these pressure zones.

Table 2-3
Build-Out Irrigated Acreage by Zone

Pressure Zone	Irrigated Acreage
1	2,534
2	2,387
3N	472
3S	874
4N	160
4S	505
5	384
6	185
Total	**7,500**

GROWTH PROJECTIONS

The development of impact fees requires growth projections over the next ten years. In addition to impact fee projects, this report includes anticipated projects for the next 10-20 years in the "Capital Facilities Plan" section of this report. Growth projections for this time frame were made based on the population projections provided by Zions Public Finance, Inc., land use classifications, and discussions with the City. The irrigated acre projections by time period for the City are summarized in Table 2-4.

Table 2-4
Irrigated Acre Projections

Year	Total Projected Irrigated Acres
2024	2,552
2034	3,742
2044	4,520
2060 (Buildout)	7,500

CHAPTER 3 WATER SOURCES

PI requirements in this study are based on irrigated acres. As specific development plans are proposed, HAL recommends that irrigation requirements be calculated based on the proposed irrigated acreage rather than the irrigation factors used in this master plan.

EXISTING WATER SOURCES

Five wells and four surface water sources (Table 3-1 and Figure 1-2) currently supply the City's PI system. The sources have a total production capacity of 19,030 gpm or 7,674 ac-ft. The drinking water system also supplements the PI system at several cross-connections throughout the city. Additionally, the City utilizes five pump stations to move water from lower pressure zones to higher pressure zones. The capacity of each pump station is shown in Table 3-2.

Table 3-1
Existing PI Sources

Source	Pressure Zone	Flow Capacity (gpm)	Flow Capacity (MGD)	Annual Capacity[1] (ac-ft)
Well 1 - Parkway Trail	1N	800	1.44	404
Well 2 - Bike Bark	2N	900	1.30	364
Well 3 - 145 North Well	2N	500	0.72	202
Well 4 - HH 2	2N	800	1.15	323
Well 5 - Jacobs Ranch (Western Dr.)	2S	3,500	5.04	1,415
Booster 1 – ULDC Source	1N	1,100	5.76	1,617
Booster 36 – Marina	2S	4,000	1.58	445
Booster 32 - 400 North	1N	5,000	7.20	2,022
Booster 31 - Jacob Canal	2N & 3N	2,230	3.21	902
Total		**19,030**	**27.40**	**7,694**

1. In the absence of other data, annual well capacity assumes half of the irrigation season flow at the given flow rate. Actual volume may be limited by water rights or hydrologic constraints.

Table 3-2
Existing PI Pump Stations

Pump Station	From Zone	To Zone	Pump Configuration	Rated Capacity (gpm)
Booster 2 - Deer Canyon	2S	3S	3 x 1,450 gpm	4,350
Booster 8 - Evans Lane	1N	2N	3 x 1,600 gpm	4,800
Booster 9 - Mt Saratoga Zone 3	2N	3N	3 x 750 gpm	2,250
Booster 4 - Lucky Clover	3N	4N	3 x 663 gpm	1,989
Booster 13 - Welby Jacob (Jacob Canal)	2N	3N	1 x 1,150 gpm	1,150
Total				**14,539**

EXISTING WATER SOURCE REQUIREMENTS

Existing Peak Day Demand

Peak day demand is the water demand on the day of the year with the highest water use. It is used to determine required source capacity under existing and future conditions. Since the drinking water system provides water for indoor use, only outdoor demand is allocated to the PI system.

Outdoor peak day demand was calculated based on a level of service of 7.5 gpm/irr-ac (HAL 2025b, 2-4). Under existing conditions, the City serves 2,551 irrigated acres, per the City's level of service, the peak day demand is 19,133 gpm. Table 3-3 shows the existing peak day demands and remaining source capacity for each pressure zone.

Table 3-3
Existing Peak Day Demand

Pressure Zone	Irrigated Acreage	Peak Day Demand (gpm)	Existing Source Capacity (gpm)	Remaining Source Capacity (gpm)
1N	842	6,315	7,100	785
1S	184	1,380	0	-1,380
2N	495	3,713	3,280	-433
2S	729	5,468	7,500	2,032
3N	222	1,665	1,150	-515
3S	75	563	0	-563
4N	4	30	0	-30
Total	**2,551**	**19,133**	**19,030**	**-103[2]**

1. Zone 1 South is currently serviced through PRVs from Zone 2 South.
2. The PI system borrows source water from the DW system to make up for existing source deficiencies.

Currently, there are several areas of the City which are not fully connected to the PI system. These areas utilize "crossover" connections with the DW system to provide water until the PI system is fully connected and self-sustaining. It is anticipated that as the City continues to

develop, these areas will be fully connected to the PI system and additional water sources will be constructed such the PI system will not borrow capacity from the DW system.

Existing Average Yearly Demand

Average yearly demand is the volume of water used during an entire year and is used to ensure the sources have enough volume to meet demand under existing and future conditions. Since the drinking water system provides water for indoor use, only outdoor demand is allocated to the PI system. Average yearly demand was determined based on irrigated acreage and a level of service of 3.13 ac-ft/irr-ac (HAL 2025b, 2-4). Based on the existing irrigated acreage, the average yearly PI demand is 7,985 ac-ft (Table 3-5).

FUTURE WATER SOURCE REQUIREMENTS

As with existing water source requirements, future water source requirements were evaluated on two criteria. First, sufficient water source capacity is needed to meet peak day flow. Second, the water sources must also be capable of supplying the average yearly demand.

Future Peak Day Demand

Following the methodology described for existing conditions and calculating 7,500 irr-ac at build-out, the peak day demand is projected to be 56,250 gpm based on the City's level of service. A breakdown of the future peak day demand by pressure zone is shown in Table 3-4.

Table 3-4
Future Peak Day Demand

Pressure Zone	Irrigated Acreage	Future Peak Day Demand (gpm)	Existing Source Capacity (gpm)	Remaining Source Capacity (gpm)
1	2,534	19,007	7,100	**-11,907**
2	2,387	17,900	10,780	**-7,120**
3N	472	3,539	1,150	**-2,389**
3S	874	6,556	0	**-6,556**
4N	160	1,201	0	**-1,201**
4S	505	3,787	0	**-3,787**
5	384	2,878	0	**-2,878**
6	185	1,384	0	**-1,384**
Total	**7,500**	**56,252**	**19,030**	**-37,222**

Overall, under build-out conditions, there is a projected source capacity deficit of 37,222 gpm based on the capacity of the existing sources.

Future Average Yearly Demand

Following the methodology described for existing conditions and estimating 7,500 irr-ac at build-out, the average yearly demand per the City's level of service is projected to be 23,475 ac-ft (Table 3-6).

WATER SOURCE RECOMMENDATIONS

Tables 3-5 and 3-6 compare annual demands with the existing water source capacities. The upcoming Well 7 pipeline project will provide enough capacity for the existing demands and will support future growth, for a time. This master plan prepares for a PI system independent of the drinking water system.

Table 3-5
Existing Yearly Demand and Source Capacity

Parameter	Peak Day (gpm)	Average Yearly (ac-ft)
Demand	19,133	7,970
Capacity	19,030	7,694
Surplus (+) or Deficit (−)	**-103**	**-276**

Table 3-6
Future Yearly Demand and Source Capacity

Parameter	Peak Day (gpm)	Average Yearly (ac-ft)
Demand	56,252	23,475
Capacity	19,030	7,694
Surplus (+) or Deficit (−)	**-37,222**	**-15,781**

Based on the selected level of service and current development plans, additional source capacity is needed for the PI system.

Existing PI sources are inadequate for build-out conditions. It is recommended that the City maintain its current wells and canal diversions, and develop additional PI sources to meet the build-out demand requirements. Potential additional PI sources include:

- An additional well near the existing Well 5.
- Surface water diversions out of Utah Lake or the Jordan River (north of Utah Lake).
- New wells in the northern portion of the City.
- Conversion of existing DW wells to the PI system.
- Reuse water from the sewage treatment plant.

The City may also reconsider its level of service and landscaping/irrigation policies to reduce future demand. Detailed information on proposed projects is included in Chapter 6, and these projects are depicted in Figure 6-1.

CHAPTER 4 WATER STORAGE

EXISTING WATER STORAGE

The City's existing PI system includes eleven storage ponds with a total capacity of 113.4 ac-ft (HAL 2025b, 2-7). Additionally, four other ponds are used for staging at pump stations for surface water sources. Table 4-1 describes the existing storage ponds for the PI system.

Table 4-1
Existing Storage Capacity

Pond	Pressure Zone	Capacity (ac-ft)
Pond 1 - Overlook	1N	2.7
Pond 2 - Deer Canyon	2S	1.5
Pond 3 - Harvest Moon	2N	9
Pond 4 - Wildflower Zn 3	3N	5
Pond 6 - Israel Canyon	2S	38
Pond 7 - Fox Hollow Zn 3	3S	6
Pond 8 - Evans Ln	1N	17
Pond 9 - Mt. Saratoga Zn2	2N	13
Pond 10 - Mt. Saratoga Zn3	3N	5.6
Pond 11 - Wildflower Zn 4	4N	4.6
Pond 20 - Harbor Pkwy	2S	11
Total		**113.4**

EXISTING WATER STORAGE REQUIREMENTS

The purpose of storage within the PI system is to provide equalization storage for those periods where demand exceeds the source supply. Equalization storage requirements were based on irrigated acreage and the level of service defined by the 2025 Impact Fee Facility Plan (HAL 2025b, 2-4). Within that report, the level of service for equalization storage was defined as 9,216 gallons (0.0283 ac-ft) per irrigated acre. Therefore, under existing conditions, with an existing irrigated acreage of 2,550 acres, the required storage is 72.2 ac-ft.

A breakdown of the required equalization storage and comparison with the existing capacity by pressure zone is shown in Table 4-2.

Table 4-2
Existing Storage Requirements

Pressure Zone	Irrigated Acreage	Storage Requirement (ac-ft)	Existing Capacity (ac-ft)	Remaining Capacity (ac-ft)
1N	842	23.8	19.7	**-4.1**
1S	184	5.2	0	**-5.2**
2N	495	14.0	22.0	8.0
2S	729	20.6	50.5	29.9
3N	222	6.3	10.6	4.3
3S	75	2.1	6.0	3.9
4N	4	0.1	4.6	4.5
Total	**2,551**	**72.2**	**113.4**	**+41.2**

FUTURE WATER STORAGE REQUIREMENTS

Table 4-3 presents the build-out storage requirements based on the forecasted irrigated acreage for each pressure zone.

Table 4-3
Future Storage Requirements

Pressure Zone	Irrigated Acreage	Storage Requirement (ac-ft)	Existing Capacity (ac-ft)	Remaining Capacity (ac-ft)
1	2,534	71.7	19.7	**-52.0**
2	2,387	67.5	72.5	+5.0
3N	472	13.4	10.6	**-2.8**
3S	874	24.7	6.0	**-18.7**
4N	160	4.5	4.6	+0.1
4S	505	14.3	0	**-14.3**
5	384	10.9	0	**-10.9**
6	185	5.2	0	**-5.2**
Total	**7,500**	**212.3**	**113.4**	**-98.9**

WATER STORAGE RECOMMENDATIONS

Existing irrigation ponds have a surplus of 41.2 ac-ft under existing conditions. However, an additional 98.9 ac-ft is needed to meet build-out requirements. See Tables 4-2 and 4-3.

It is recommended that ponds be coordinated with planned and future developments, and that pond sites be identified before optimal locations become unavailable. It is possible to construct expandable ponds, i.e., construct only short-term capacity and leave the option for future

expansion to a larger volume. In zones 4 south, 5, and 6 ponds and other water infrastructure may be constructed by individual developers to serve their own developments. The City may also reconsider its level of service and landscaping/irrigation policies to reduce future demand. An overview of PI storage recommendations is presented in the following paragraphs. Detailed information on proposed projects is included in Chapter 6.
Currently, Zone 1 borrows storage capacity from Zone 2 South. HAL recommends expanding the existing Pond 8 to increase the storage capacity for Zone 1.

The northern portion of Zone 2 South is anticipated to develop within the next few years. While Pond 6 currently provides sufficient storage for the zone, transmission capacity in this area is approaching its limits. To support planned growth north of Grandview Avenue, construction of an additional storage pond in Zone 2 South is recommended. This new facility will increase available storage and help relieve transmission constraints in the northern part of the zone.

HAL also recommends constructing a new storage pond to serve Zone 1 in the central portion of the system. This facility will provide the necessary storage to support ongoing development and accommodate increasing demand in the area.

The southern portion of the system (near Harbor Parkway) is currently served by the Marina Pump Station and Pond 20. The Marina Pump Station currently supplies Zone 2 South. As development continues in this area, HAL recommends constructing a pond and pump station to serve Zone 1, and re-equipping the Marina Pump Station. This will allow the City to pump directly into Zone 1, and allow water to be boosted into Zone 2 as needed.

CHAPTER 5 WATER DISTRIBUTION

PEAK DISTRIBUTION SYSTEM DEMANDS

The City's PI distribution system consists of all pipelines, valves, fittings, and other appurtenances used to convey water from sources and storage tanks to water users. The existing water system contains approximately 192 mi of pipe with diameters of 6 in. to 30 in. Figure 5-1 presents a summary of pipe length by diameter. Four pressure zones comprise the current system, where Zone 1 is the lowest in elevation and Zone 4 is the highest.

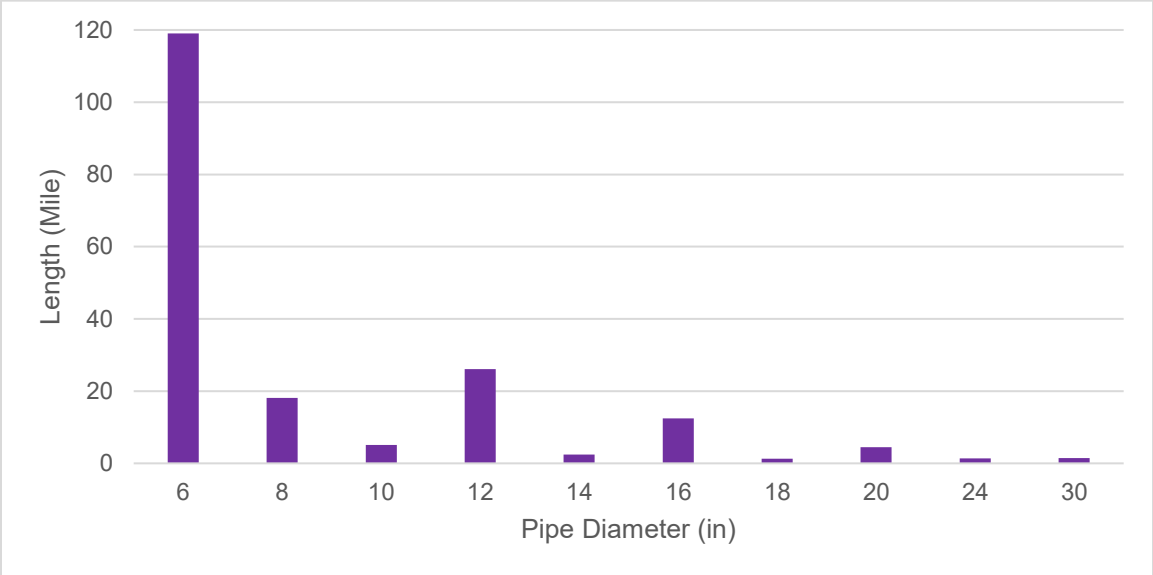


Figure 5-1: Summary of Pipe Length by Diameter

Existing Peak Instantaneous Demand

Peak instantaneous demand was calculated based on irrigated acreage and the level of service defined in the 2025 Impact Fee Facility Plan (HAL 2025b). The selected level of service is 15 gpm per irrigated acre; therefore, the total peak instantaneous for the City is 38,265 gpm under existing conditions.

Future Peak Instantaneous Demand

Future build-out peak instantaneous demand was calculated based on the same level of service as defined for existing conditions. The total future irrigated acreage that is planned is 7,500 acres. Therefore, the future peak instantaneous demand was calculated as 112,500 gpm.

HYDRAULIC MODEL

Development

A computer model of the City's PI distribution system was developed to analyze the performance of the existing and future distribution system and to prepare solutions for existing facilities not meeting the distribution system requirements. The model was developed with InfoWater Pro, published by AutoDesk. InfoWater Pro simulates the hydraulic behavior of pipe networks.

Sources, pipes, tanks, valves, controls, and other data used to develop the model were obtained from GIS data of the City's PI system and other updated information supplied by the City.

HAL developed models for two phases of the PI system. The first phase was a model representing the existing system (existing model). This model was used to calibrate the model and identify deficiencies in the existing system. The second phase was a model representing future conditions and the improvements necessary to accommodate growth (future model).

Model Components

The two basic elements of the model are pipes and nodes. A pipe is described by its inside diameter, length, minor friction loss factors, and a roughness value associated with friction head losses. A pipe can contain elbows, bends, valves, pumps, and other operational elements. Nodes are the endpoints of a pipe and can be categorized as junction nodes or boundary nodes. A junction node is a point where two or more pipes meet, where a change in pipe diameter occurs, or where flow is added (source) or removed (demand). A boundary node is a point where the hydraulic grade is known (a reservoir, tank, or PRV). Other components include tanks, reservoirs, pumps, valves, and controls.

The model is not an exact replica of the actual water system. Pipeline locations used in the model are approximate and not every pipeline may be included in the model, although efforts were made to make the model as complete and accurate as possible. Moreover, it is not necessary to include all the distribution system pipes in the model to accurately simulate its performance.

Pipe Network

The pipe network layout originated from GIS data provided by the City. HAL verified its accuracy by reviewing maps and drawings provided by the City, as well as a model prepared for the previous master plan. Elevation information was obtained from recent LiDAR digital elevation models. Within the Saratoga Springs distribution system, pipes with a diameter of 12 inches or larger are generally concrete-lined ductile iron. Smaller 8-inch and 10-inch pipes are generally PVC. Darcy-Weisbach roughness coefficients for pipes in this model ranged from 0.4 – 0.6 millifeet, which is typical for these pipe materials in EPANET (Rossman 2000, 31).

Water Demands

Water demands were allocated in the model based on billing data and billing address. The irrigated acreage was determined using the billing data, and then the billing addresses were geocoded in order to link the demands to a physical location. The geocoded demands were then assigned to the closest model node. This represented average daily demands, which were then scaled to reach the peak day demand determined in Chapter 3. Future demand was assigned to nodes in the future model which best represented the location of anticipated development.

The pattern of water demand over a 24 hr period is called the diurnal curve or daily demand curve. HAL developed a diurnal curve for peak day conditions using SCADA data and a peak factor of 2.0 (the ratio of peak instantaneous demand to peak day average demand) in the previous master plan. The diurnal curve used in this study is presented in Figure 5-2. The diurnal curve was input into the model to simulate changes in the water system throughout the day. This diurnal curve has proven to be an accurate representation of demand changes since the previous master plan.

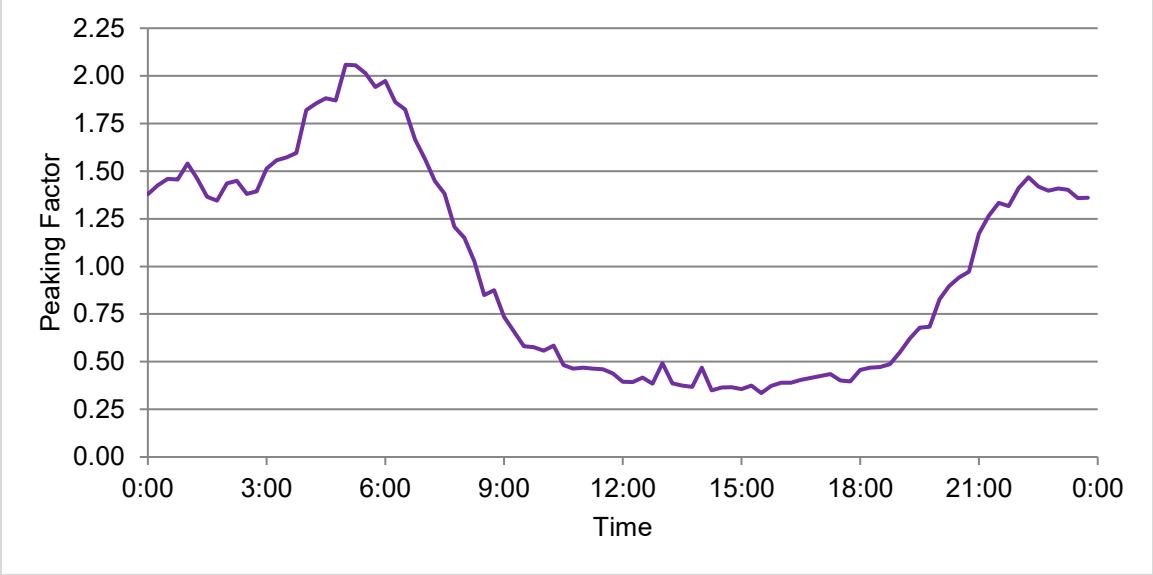


Figure 5-2: Saratoga Springs Pressurized Irrigation Diurnal Curve

In summary, the spatial distribution of demands followed geocoded water use data; the flow and volume of demands followed City standards described in Chapter 3; and the temporal pattern of demand followed a diurnal curve developed from SCADA data.

Water Sources and Storage Ponds

The sources of water in the existing model are the five wells and four surface water pump stations. All sources in the PI model are represented by a reservoir and pump. Pond location, height, diameter, and volume are represented as storage tanks in the model. The extended-period model predicts water levels in the ponds as they fill from sources and as they empty to meet demand in the system.

ANALYSIS METHODOLOGY

HAL used the extended-period model to analyze the performance of the water system with current and projected future demands. An extended-period model represents system behavior over a period of time: ponds filling and draining, pumps turning on or off, pressures fluctuating, and flows shifting in response to demands. The model was used to analyze conditions, controls, operation, performance, energy efficiency, and water quality. Recommendations for existing and future conditions were checked with the extended-period model to confirm adequacy.

Three extreme operating conditions analyzed with the model were static conditions, peak instantaneous conditions, and peak day conditions. Each of these conditions is a worst-case situation so the performance of the distribution system may be analyzed for compliance with City requirements. Each operating condition is discussed in more detail below.

Static Conditions

Low-flow or static conditions are usually the worst case for high pressures in a PI distribution system. Before the evening irrigation begins, storage is typically nearly full, and movement of water through the system is minimal. Under these conditions, the system approaches a static condition where water pressures are dictated only by elevation differences and pressure-regulating devices. This high-pressure condition was simulated with the model to analyze the system's existing and future conformance to pressure requirements.

Peak Instantaneous Demand Conditions

Peak instantaneous demand conditions are the worst-case for low pressures in the PI system. The PI system reaches peak instantaneous demand conditions when irrigation is the highest, such as hot summer days or holidays. The high demand causes high velocities and increased losses in the distribution pipes, resulting in reduced pressure.

WATER DISTRIBUTION SYSTEM RECOMMENDATIONS

The model output primarily consists of the computed pressures at nodes and flow rates through pipes. The model also provides additional data related to pipeline flow velocity and head loss to help evaluate the performance of the various components of the distribution system. Due to the large number of pipes and nodes in the model, it is impractical to prepare a figure which illustrates pipe numbers and node numbers.

Recommendations for distribution improvement projects were based on the modeling, as outlined above, and guidance provided by City personnel. There are a few recommendations that will move parts of one pressure zone to another.

“Two areas at the upper end of Zone 2 South are recommended for reassignment to Zone 3 South to improve system pressures. These locations are identified in Figure 5-3. Implementation of this change will depend on the completion of the necessary Zone 3 South facilities.

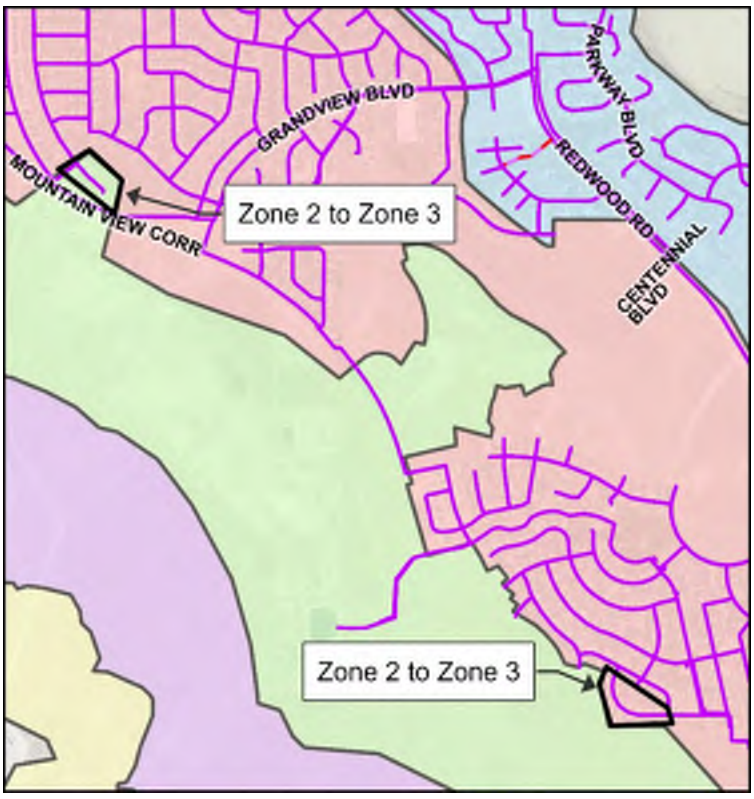


Figure 5-3: Location of Recommended Zone Changes

The future distribution projects are associated with providing transmission capacity to and from future ponds and sources. It is expected that these projects may change as compared to current

projections depending on the availability of land and other considerations that may affect the final locations of the proposed ponds.

Future additional transmission pipelines are expected to be installed as the City expands. The locations and lengths of these transmission pipelines depend on the final location of future streets and configuration of developments. Specific pipelines smaller than 10 inches have not been located for this study. It is recommended that each development be reviewed to ensure adequate system capacity. It is also recommended that developments be checked for dead end pipelines of more than 600 feet to safeguard water quality and provide supply redundancy.

Anticipated future pipes larger than 10 inches have been located according to zone demand following proposed road alignments. The assumed locations of these pipelines are illustrated on Figure 6-1.

CHAPTER 6 CAPITAL FACILITY PLAN

GENERAL

The purpose of this section is to identify the secondary facilities that are required to meet the demands placed on the system by future development for the IFFP 10-year planning period and the CFP 20-year planning period. Proposed facility capacities were sized to adequately meet the 20-year growth projections and were compared to current master planned facilities. Buildout facility sizing and location may be found in Appendix A. A detailed design analysis will be required before construction of the facilities to ensure that the location and sizing is appropriate for the actual growth that has taken place since this CFP was developed. Specific projects with costs are presented in Section 4.

METHODOLOGY

Future water demands were based on the growth projections converted into irrigated acreage projections. The demands were added incrementally by year to the facility analysis. A 20-year solution was identified for the year a facility reaches capacity. A hydraulic model was developed for the purpose of assessing the system operation and capacity with future demands added to the system. The model was used to identify problem areas in the system and to identify the most efficient way to make improvements to transmission pipelines, sources, pumps, and storage facilities.

Currently the Drinking Water System supplements the PI system, as needed, during peak demands in portions of the City. Future drinking water demands require the PI system demand to be removed from a Drinking Water System facility, triggering a project required for the PI system but not the Drinking Water System.

The future system was evaluated in the same manner as the existing system, by modeling (1) Peak Instantaneous Demands and (2) Peak Day Demands.

FUTURE WATER SOURCE

The future system will continue to utilize groundwater sources and canal sources for irrigation water. The Central Water Project (CWP) provided by Central Utah Water Conservancy District (CUWCD) allowed the City access to the CWP. Using the excess CWP water allows the City to postpone the cost of drilling new wells. As an option for future sources, the City's Well 7 and Well 8 could be used in the PI system once the CWP water is no longer available. The City also may utilize shallow wells and canal shares to provide source water for the secondary system.

Future 20-year growth projections require the City to provide additional PI sources. The CFP analysis utilized the proposed level of service requiring that the system's water sources are capable of meeting a peak day demand of 7.5 gpm per irrigated acre.

The following are source projects selected to meet the source requirements for future growth:

- Zone 1 North – Well 8 Equipping, 800 gpm
- Zone 1 North – Pump Station 33 (Utah Lake Pump Station), 7,750 gpm
- Zone 1 North – Pump Station 5 (Tickville Pump Station), 4,000 gpm
- Zone 2 South – Well 9 (New Jacobs Ranch Well), 3,000 gpm

FUTURE PI STORAGE

Based upon the City level of service, the PI system must provide 9,216 gallons of storage per irrigated acre. The future 20-year irrigated acreage projection requires a number of storage facilities to supply storage to future pressure zones. The following storage facilities are anticipated to meet future demands:

- Zone 1 North – Pond 8 Expansion, 29 ac-ft total
- Zone 2 South – Pond 12, 24 ac-ft
- Zone 3 South – Pond 13, 8.5 ac-ft
- Zone 3 South – Pond 14, 8.0 ac-ft
- Zone 4 South – Pond 15, 7.0 ac-ft
- Zone 2 South – Pond 2 Concrete Lining

FUTURE ZONE PUMPING

Future zone pumping requirements were evaluated to model the peak day future demands. All zones are or are planned to be directly connected to ponds that supply flows above the peak day demand. All zone pumping meets the 7.5 gpm per irrigated acre level of service standard. The future 20-year growth model required new pump stations to provide water to existing and future zones. Zone pumping in the lower pump stations must have capacity to provide source to the zone above. These pump stations do not include the pump stations required to lift from canal sources as these were determined to be part of a source project. The required pump stations are shown below:

- Zone 2 South – Pump Station 5, Zone 1 to 2 pump(s) within Pump Station 5, 2,750 gpm
- Zone 3 South – Pump Station 12, 2,200 gpm
- Zone 3 South – Pump Station 6, 3,800 gpm
- Zone 4 South – Pump Station 14, 1,850 gpm

FUTURE TRANSMISSION PIPING

Future transmission lines would need to be constructed to allow for future growth in the undeveloped areas of the City and to connect existing isolated systems together. The model was used to determine the most efficient way to keep waterline velocities and pressures within the criteria limits with added future demands. The level of service selected for pipelines was a peak instantaneous demand of 15.0 gpm per irrigated acre. Pipelines are considered at capacity when velocities reach 5 fps at peak instantaneous demand using the extended period hydraulic model representing the system as a whole under typical peak demand conditions. The majority of the waterline projects are required to connect sources to storage tanks and to connect the existing and future areas of the system. These transmission lines are described below:

- Zone 1 North – Well 7 Pipeline, 500 LF of 10-inch pipeline
- Zone 1 North – 3,300 LF of 12-inch pipeline from Well 8 to Crossroads Blvd
- Zone 1 North – 3,300 LF of 24-inch pipeline from Booster 33 to Riverside Drive
- Zone 1 North – 2,500 LF of 18-inch pipeline along Mountain View Corridor
- Zone 1 North – 5,000 LF of 16-inch pipeline from Booster 5 to Mountain View Corridor
- Zone 1 North – 1,400 LF of 24-inch pipeline from Booster 5 to Halvorsen Pkwy

- Zone 1 North – 4,200 LF of 16-inch pipeline along Halvorsen Pkwy to Redwood Road
- Zone 2 South – 7,000 LF of 30-inch pipeline to reroute and pressurize the Tickville Wash
- Zone 2 South – 3,000 LF of 24-inch pipeline from Booster 5 to Halvorsen Pkwy
- Zone 2 South – 6,500 LF of 24-inch pipeline from Booster 5 to Ensign Drive
- Zone 2 South – 5,600 LF of 20-inch pipeline from Ensign Drive to Pond 12
- Zone 3 North – 300 LF of 12-inch pipeline crossing SR 73
- Zone 3 South – 5,200 LF of 20-inch pipeline from Booster 12 to Pond 13
- Zone 3 South – 2,500 LF of 24-inch pipeline from Booster 6 to Pond 14
- Zone 4 South – 1,500 LF of 16-inch pipeline from Booster 14 to Pond 15

FUTURE WATER RIGHTS

Water rights need to be acquired for future growth. Two quantities are important when it comes to water rights: diversion and depletion. The diversion quantity is simply the amount the City is allowed to divert from a source. The depletion quantity is the amount of water that is removed from the hydrologic system. It is important to quantify the amount of water the City is depleting in its secondary system to ensure it is not using more than is allowed by its water rights.

Consumptive Use of Irrigated Crops in Utah, a study published by Utah State University, is used by the office of the State Engineer to quantify depletion, and will be used in this report as well. It reports that turf grass in Lehi (the closest study area to Saratoga Springs) consumptively uses 24.32 inches of water per year, or 2.02 acre-feet per irrigated acre. With a level of service of 3.13 acre-feet per irrigated acre, the City depletion rate for PI is about 64%. The remainder returns to the hydrologic system due to inefficient watering practices, leakage, and evaporation from storage ponds.

The existing diversion demand at the proposed level of service of 3.13 acre-feet per irrigated acre is 7,970 acre-feet. The depletion demand is 5,101 acre-feet. The diversion demand in water rights will increase by 3,742 in the first ten years and 2,436 between years 10 and 20. In general this is approximately 309 ac-ft of water rights per year for the next 20 years.

Table 6-1 shows estimated future diversion and depletion demands for the City's PI system for the next 20 years.

Table 6-1
Existing and Future Diversion and Depletion Demand

	Diversion (ac-ft)	Depletion (ac-ft)
Existing Demand	7,970	5,101
Demand in 2034	11,712	7,496
Demand in 2044	14,148	9,055

MASTER PLANNING

Throughout the master planning process, the three main components of the City's water system (source, storage, and distribution) were analyzed to determine the system's ability to meet existing demands and also the anticipated future demands at build-out. Each of the system deficiencies identified in the master planning process and described previously in this report were presented

in an alternatives workshop with City staff. Possible solutions were discussed for each of the identified system deficiencies as well as possible solutions for maintenance and other system needs not identified in the system analysis. After the workshop, HAL studied the feasibility of the alternatives and developed conceptual costs.

One important method of paying for system improvements is through impact fees. Impact fees are collected from new development and should only be used to pay for system improvements related to new development. For this reason, it is important to identify which projects are related to resolving existing deficiencies, and which projects are related to providing anticipated future capacity for new development.

PRECISION OF COST ESTIMATES

When considering cost estimates, there are several levels or degrees of precision, depending on the purpose of the estimate and the percentage of detailed design that has been completed. The following levels of precision are typical:

Type of Estimate	Precision
Master Planning	-50% to +100%
Preliminary Design	-30% to +30%
Final Design or Bid	-10% to +10%

For example, at the master planning level (or conceptual or feasibility design level), if a project is estimated to cost $1,000,000, then the precision or reliability of the cost estimate would typically be expected to range between approximately $500,000 and $2,000,000. While this may seem very imprecise, the purpose of master planning is to develop general sizing, location, cost, and scheduling information on a number of individual projects that may be designed and constructed over a period of many years. Master planning also typically includes the selection of common design criteria to help ensure uniformity and compatibility among future individual projects. Details such as the exact capacity of individual projects, the level of redundancy, the location of facilities, the alignment and depth of pipelines, the extent of utility conflicts, the cost of land and easements, the construction methodology, the types of equipment and material to be used, the time of construction, interest and inflation rates, permitting requirements, etc., are typically developed during the more detailed levels of design.

At the preliminary or 10% design level, some of the aforementioned information will have been developed. Major design decisions such as the size of facilities, selection of facility sites, pipeline alignments and depths, and the selection of the types of equipment and material to be used during construction will typically have been made. At this level of design the precision of the cost estimate for a $1,000,000 project would typically be expected to range between approximately $700,000 and $1,300,000.

After the project has been completely designed, and is ready to bid, all design plans and technical specifications will have been completed and nearly all of the significant details about the project should be known. At this level of design, the precision of the cost estimate for the same $1,000,000 project would typically be expected to range between approximately $900,000 and $1,100,000.

SYSTEM IMPROVEMENT PROJECTS

As discussed in previous chapters, source, storage and distribution system capacity expansion will be needed to meet the demands of future growth. Project descriptions for water system

improvements are presented in Chapters 3, 4 and 5 with the location of each project shown in the Master Plan Map. Each recommendation includes a conceptual cost estimate for construction and year needed.

Unit costs for the construction cost estimates are based on conceptual level engineering. Sources used to estimate construction costs include:

1. "Means Heavy Construction Cost Data, 2025"
2. Price quotes from equipment suppliers
3. Recent construction bids for similar work

All costs are presented in 2025 dollars. Recent price and economic trends indicate that future costs are difficult to predict with certainty. Engineering cost estimates provided in this study should be regarded as conceptual level for use as a planning guide. Only during final design can a definitive and more accurate estimate be provided for each project.

Cost estimates for each project are detailed in Table 6-2 and Appendix C, while Figure 6-1 illustrates the location of each improvement. Figures in Appendix A illustrate the buildout locations and capacity of each master planned facility. Table 6-3 also summarizes the projected costs for the recommended system improvements through 2045.

Table 6-2
Recommended 20-Year Projects

Project Type	Map ID	Recommendation	Cost Estimate
Source Conveyance	PI01	**Well 7 Pipeline** – Construct 500 LF of 10-inch pipeline to connect Well 7 to the PI system.	$162,000
Source	PI02	**New Jacobs Ranch Well** – Drill and equip PI Well 9.	$4,800,000
Storage Source Conveyance	PI03	**Pond 13 & Pump Station 12 (Grandview Zone 3)** – Construct Pond 13 with a capacity of 8.5 ac-ft, construct Booster 12 with a capacity of 2,200 gpm, construct 5,200 LF of 20-inch pipeline.	$9,910,000
Source Conveyance	PI04	**Tickville Wash Pump Station** – Construct Booster 5 with a capacity of 4,000 gpm to pump into Pressure Zone 1 N, construct 4,200 LF of 16-inch pipeline, construct 1,400 LF of 24-inch pipeline, construct a 10 ac-ft staging pond for the pump station.	$12,880,000
Source Conveyance	PI05	**MVC/Tickville Wash Pipeline** – Construct 5,000 LF of 16-inch pipeline and 2,500 LF of 18-inch pipeline to connect Booster 5 to the PI system along Pony Express Pkwy.	$3,180,000
Source Conveyance	PI06	**Well 8 Drilling and Equipping** – Drill and equip PI Well 8, construct 3,300 LF of 12-inch pipeline.	$5,739,000
Storage	PI07	**Pond 8 Expansion** – Expand the volume of Pond 8 to 29 ac-ft.	$6,130,000
Source Conveyance	PI08	**Zone 2 South Welby Jacob Pipeline** – Construct 7,000 LF of 30-inch pipeline to reroute and pressurize the Tickville Wash	$4,750,000

Project Type	Map ID	Recommendation	Cost Estimate
Storage Source Conveyance	PI09	**Pond 12** – Construct Pond 12 with a capacity of 24 ac-ft, construct 6,500 LF of 24-inch pipeline and 5,600 LF of 20-inch pipeline to connect Pond 12 to the PI system.	$17,544,000
Source Conveyance	PI10	**Zone 2 South Pump and Pipeline (SLR)** – Install 2,750 gpm pumps in Pump Station 5 to pump water from Zone 1N to Zone 2S, construct 3,000 LF of 24-inch pipeline.	$2,628,000
Storage Source Conveyance	PI11	**Pond 14 and Pump Station 6 (Israel Canyon Zone 3)** – Construct Pond 14 with a capacity of 8 ac-ft, construct Booster 6 with a capacity of 3,800 gpm, construct 2,500 LF of 24-inch pipeline.	$8,602,000
Storage Source Conveyance	PI12	**Pond 15 and Pump Station 14 (Israel Canyon Zone 4)** – Construct Pond 15 with a capacity of 7 ac-ft, construct Booster 14 with a capacity of 1,850 gpm, construct 1,500 LF of 16-inch pipeline.	$7,337,000
Source Conveyance	PI13	**Pump Station 33 - Inlet Park** – Construct Pump Station 33 with a capacity of 7,750 gpm, construct 3,300 LF of 24-inch pipeline to connect the pump station to the PI system.	$7,572,000
Storage	PI14	**Pond 2 Concrete Lining** – Replace the existing pond lining with concrete to improve storage efficiency.	$1,090,000
Source Conveyance	PI15	**SR 73 Crossing** – Construct 300 LF of 12-inch pipeline across SR 73	$708,000
Total			**$91,234,000**

SUMMARY OF COSTS

Table 6-3 presents a summation of project listed in Table 6-2. An engineering and administrative contingency plus a general contingency are included in the cost estimates presented in Table 6-2. Table 6-3 shows the total costs for each project type without contingencies. These tables do not include any financing costs associated with funding options.

Table 6-3
Summary of Costs

Project Type	Cost
Source Conveyance	$50,627,000
Storage	$29,813,240
Total	**$80,440,240**
Total with Contingencies	**$91,234,000**

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ASSET DEPRECIATION

In addition to planning for future growth, the City may also wish to allocate funds for the eventual replacement of aging infrastructure. Because most of the City's PI system was constructed within the past 25 years and remains in good condition, this report does not include specific replacement recommendations. Instead, Appendix D provides an asset depreciation analysis that can be used to determine the annual funding needed to replace infrastructure as it reaches the end of its service life. Appendix D also includes an estimate of the depreciation value for the City's PI assets and facilities.

FUNDING OPTIONS

Funding options for the recommended projects, in addition to water use fees, include: general obligation bonds, revenue bonds, State/Federal grants and loans, and impact fees. In reality, the City may need to consider a combination of these funding options. The following discussion describes each of these options.

Revenue Bonds

This form of debt financing is also available to the City for utility-related capital improvements. Unlike General Obligation (G.O.) bonds, revenue bonds are not backed by the City as a whole, but constitute a lien against the water service charge revenues of a Water Utility. Revenue bonds present a greater risk to the investor than G.O. bonds, since repayment of debt depends on an adequate revenue stream, legally defensible rate structure /and sound fiscal management by the issuing jurisdiction.

Due to this increased risk, revenue bonds generally require a higher interest rate than G.O. bonds. This type of debt also has very specific coverage requirements in the form of a reserve fund specifying an amount, usually expressed in terms of average or maximum debt service due in any future year. This debt service is required to be held as a cash reserve for annual debt service payment to the benefit of bondholders. Typically, voter approval is not required when issuing revenue bonds. For growth-related projects, this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

State or Federal Grants and Loans

Historically, both local and county governments have experienced significant infrastructure funding support from state and federal government agencies in the form of block grants, direct grants in aid, interagency loans, and general revenue sharing. Federal expenditure pressures and virtual elimination of federal revenue sharing dollars are clear indicators that local government may be left to its own devices regarding infrastructure finance in general. However, state or federal grants and loans should be further investigated as a possible funding source for needed water system improvements.

It is also important to assess likely trends regarding state or federal assistance in infrastructure financing. Future trends indicate that grants will be replaced by loans through a public works revolving fund. Local governments can expect to access these revolving funds or public works trust funds by demonstrating both the need for and the ability to repay the borrowed monies, with interest. As with the revenue bonds discussed earlier, the ability of infrastructure programs to wisely manage their own finances will be a key element in evaluating whether many secondary funding sources, such as federal/state loans, will be available to the City.

User Fees

Similar to property taxes on existing residents, user fees to pay for improvements related to new growth-related projects places an unfair burden on existing residents as they had previously paid for their level of service.

Impact Fees

The Utah Impact Fees Act, codified in Title 11, Chapter 36a, of the Utah Code, authorizes municipalities to collect impact fees to fund public facilities. An impact fee is “a payment of money imposed upon new development activity … to mitigate the impact of the new development on public infrastructure” (Subsection 11-36a-102(8)). Impact fees enable local governments to finance infrastructure improvements without burdening existing development with costs that are exclusively attributable to growth.

Impact fees can be applied to water-related facilities under the Utah Impact Fees Act. The Act is designed to provide a logical and clear framework for establishing new development assessments. It is also designed to establish the basis for the fee calculation which the City must follow in order to comply with the statute. The fundamental objective for the fee structure is the imposition on new development of only those costs associated with providing or expanding water infrastructure to meet the capacity needs created by that specific new development. Impact fees cannot be applied retroactively.

Saratoga Springs completed an Impact Fee Facilities Plan and Impact Fee Analysis for its drinking water system in February 2025.

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APPENDIX A

Future Pressurized Irrigation System

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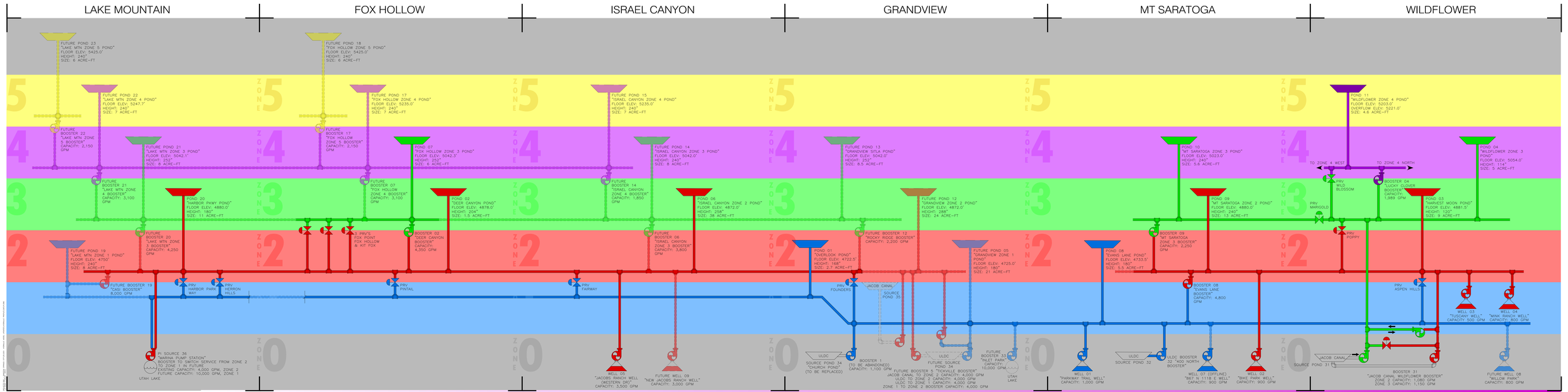
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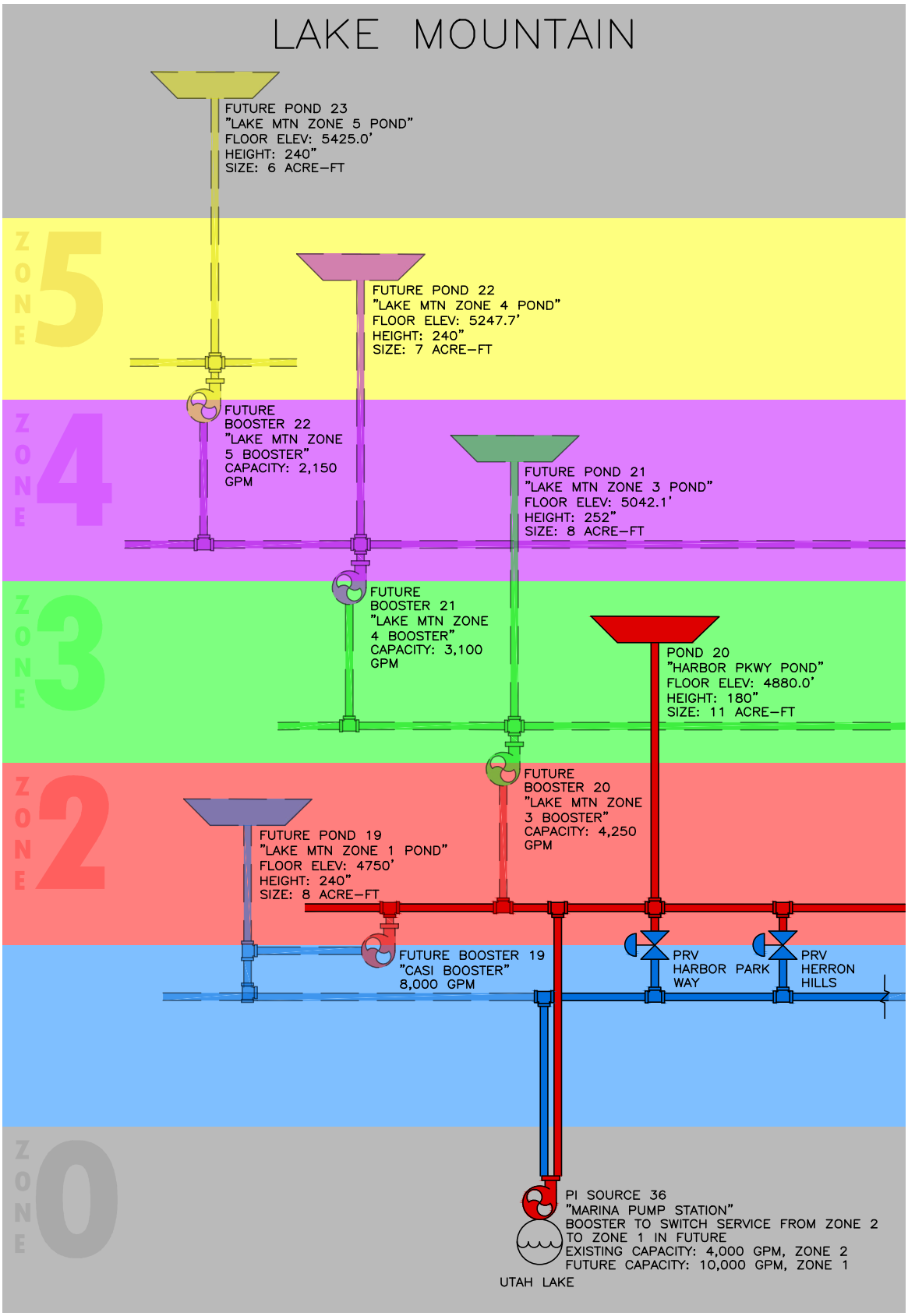
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HANSEN ALLEN & LUCE INC
ENGINEERS

CITY OF SARATOGA SPRINGS HYDRAULIC PROFILE - PRESSURIZED IRRIGATION





TO FOX HOLLOW >

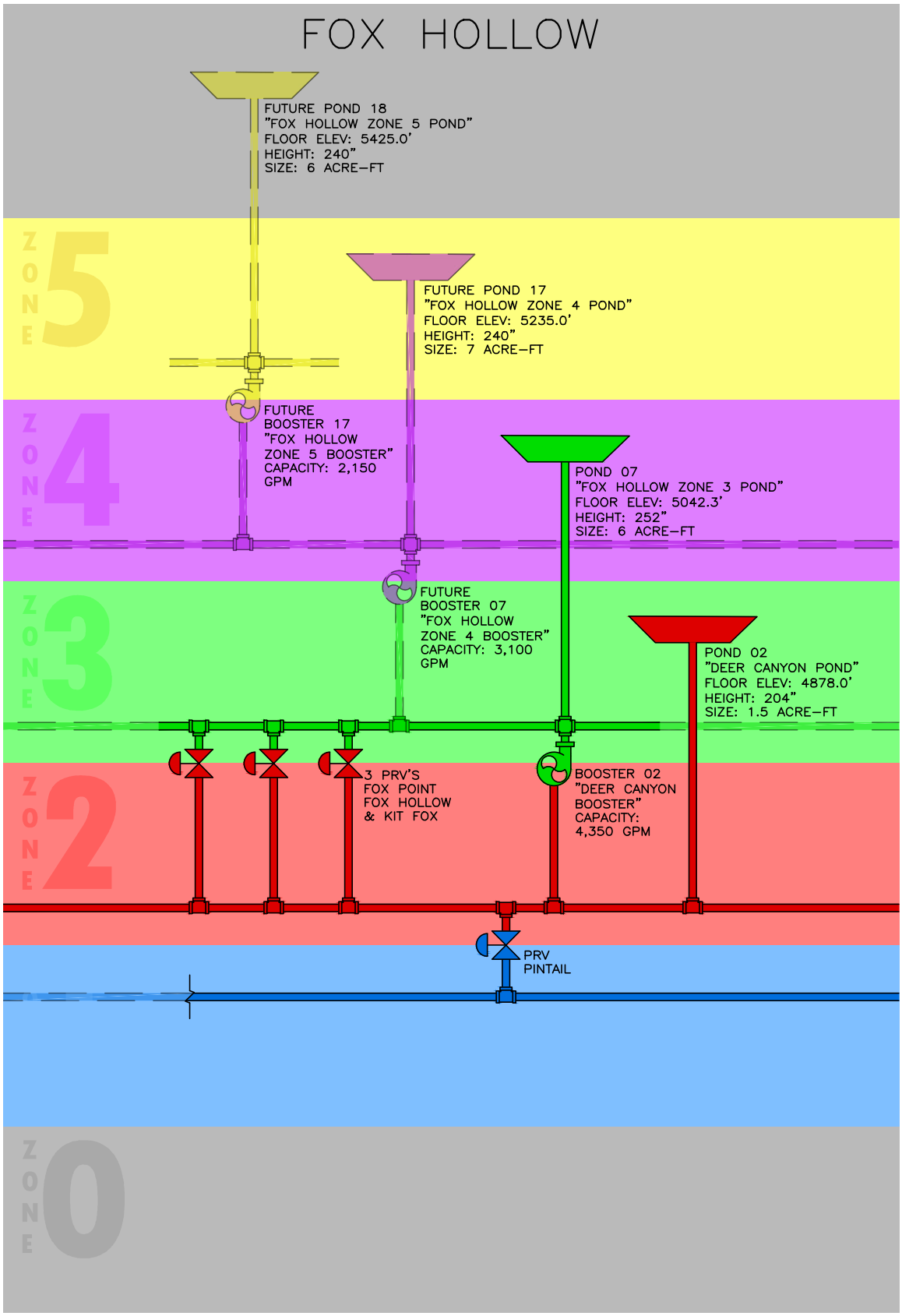
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CITY OF SARATOGA SPRINGS
PRESSURIZED IRRIGATION SYSTEM KEY INFRASTRUCTURE

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FOX HOLLOW



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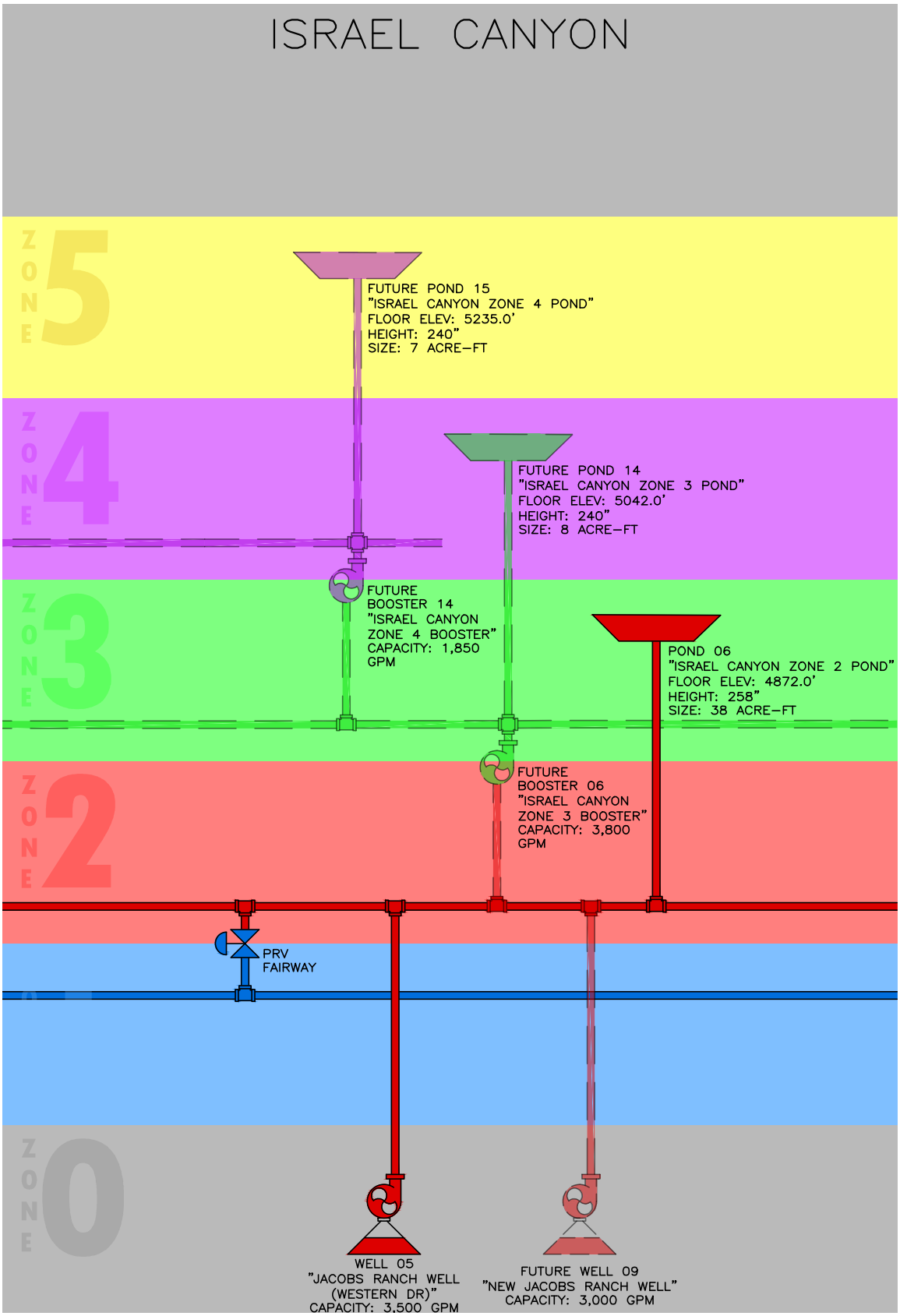
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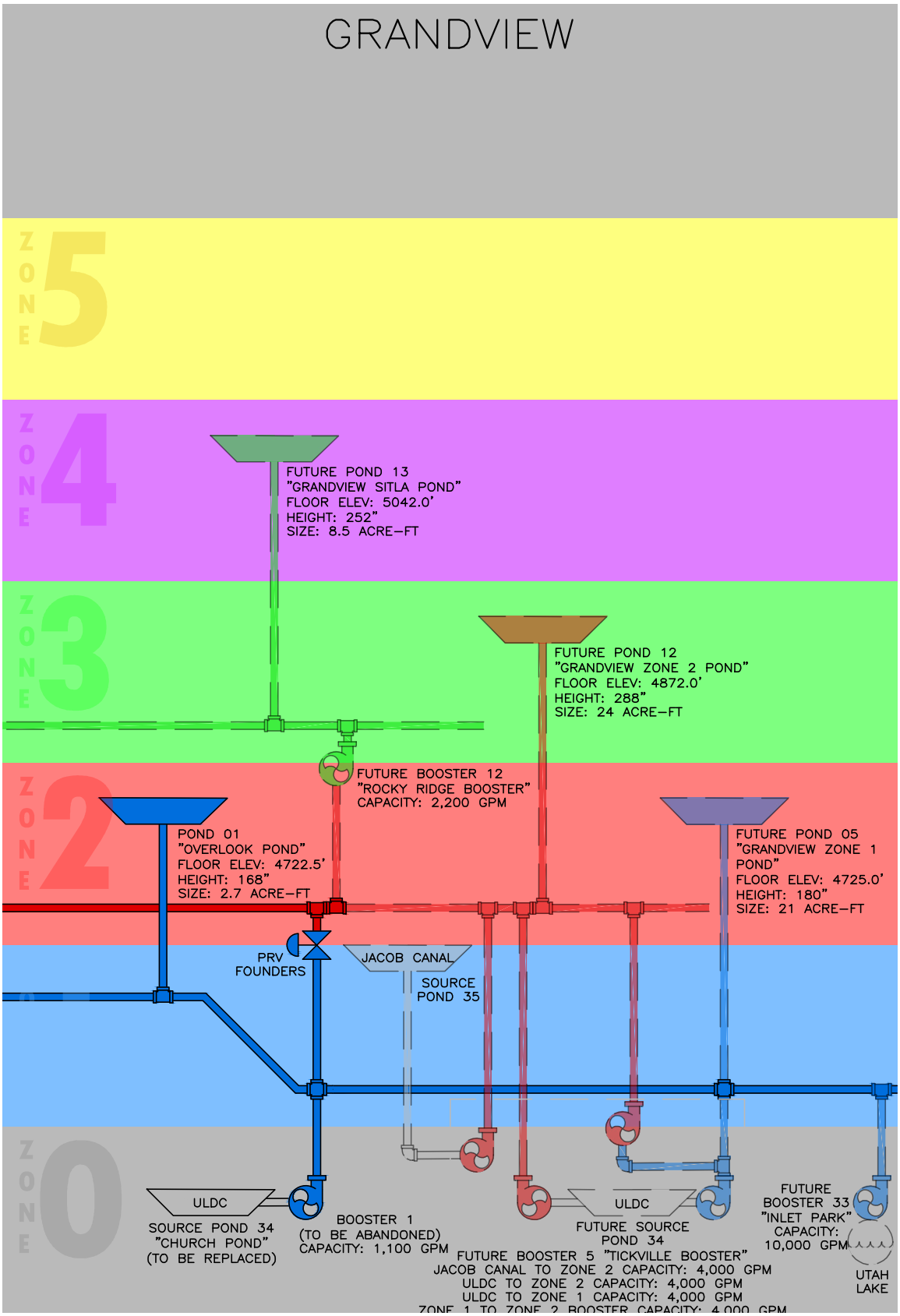
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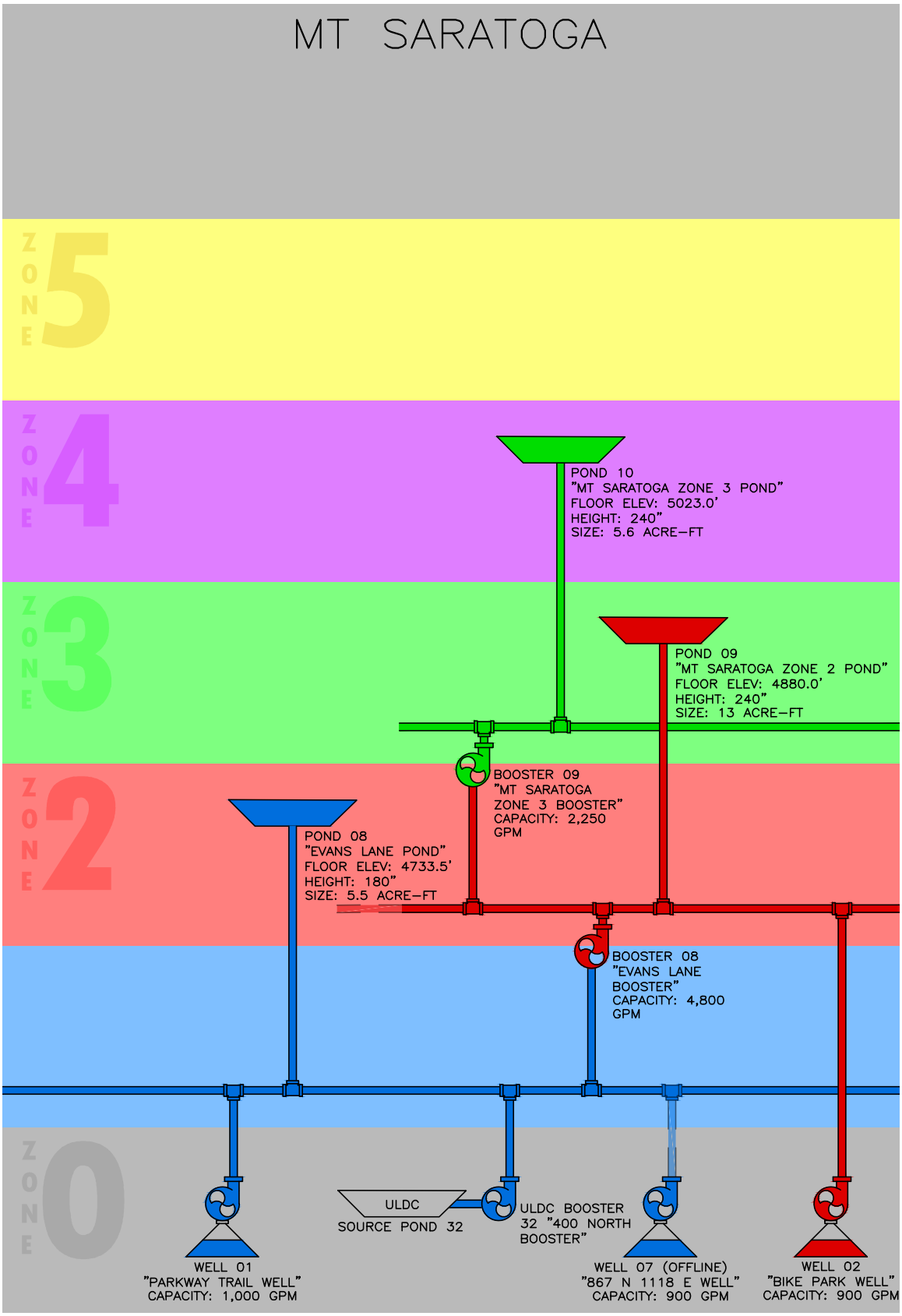
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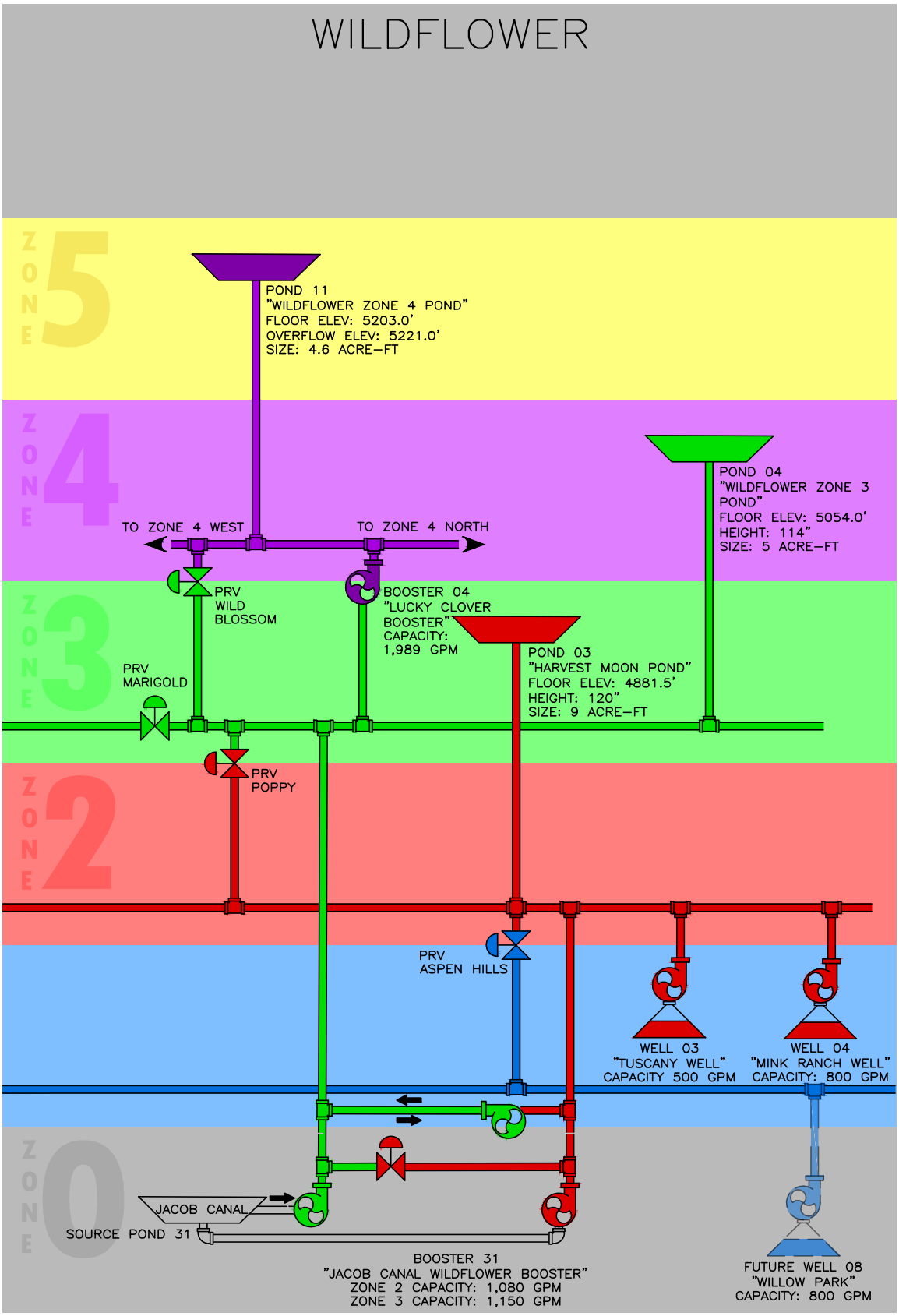
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PRESSURIZED IRRIGATION SYSTEM KEY INFRASTRUCTURE

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APPENDIX B

Zions Public Finance Growth Projections Memorandum

ZIONS PUBLIC FINANCE, INC.

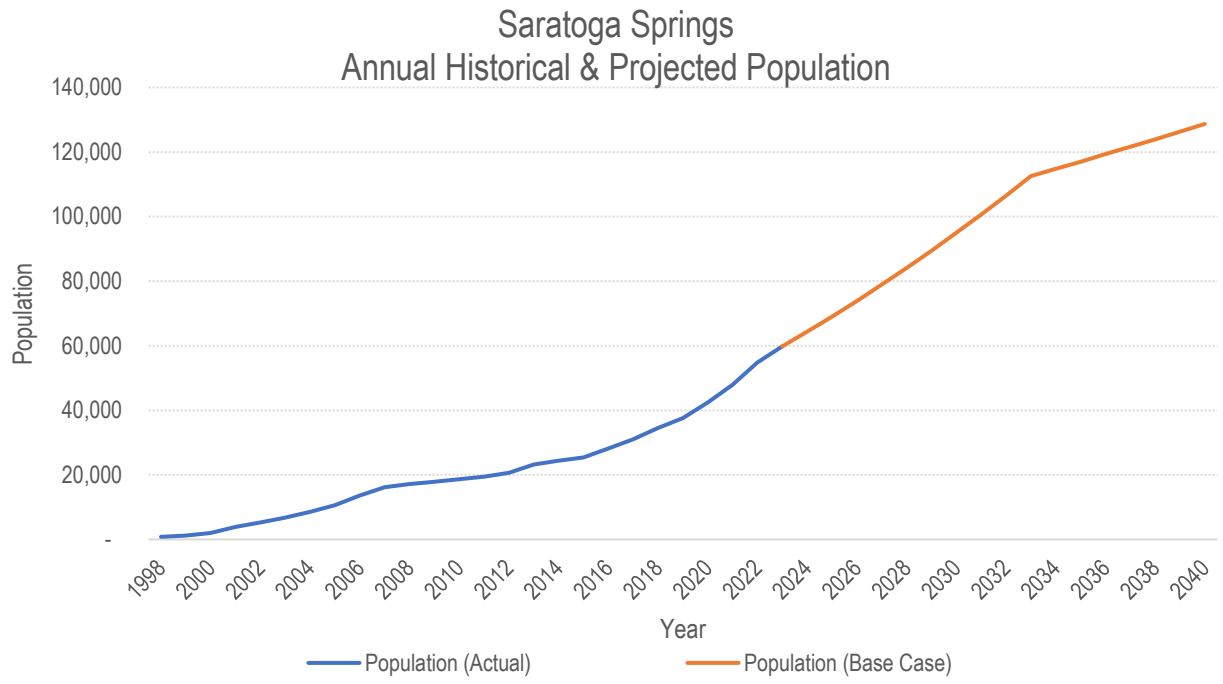
GROWTH PROJECTIONS MEMORANDUM

Historic and Projected Growth

Saratoga Springs continues its historically robust pace of growth as of March 2024. Indeed, over the trailing five-year period from 2018-2023, the City's population has increased at an average annual growth rate of 11.6 percent, reaching a new record population of 59,812 as of 2023. This comprises an absolute increase of 25,288 people since the close of 2018.

Zions projects Saratoga Springs to grow at an average annual growth rate of 6.1 percent, or 4,996 people, per-year over the period 2024-2034. Over the longer period of 2035-2040, Zions projects an average annual growth rate of 4.8 percent, at 4,157 people per year. In the year 2040 this would place Saratoga Springs total population at approximately 130,000 people.

CHART 1: SARATOGA SPRINGS ANNUAL HISTORICAL AND PROJECTED POPULATION



In generating these projections, Zions implemented a linear model coupled with upper and lower prediction intervals calculated at the 95% probability level to provide a base case long-term population growth scenario.

- Base Case – this scenario projects forward population levels assuming the mean growth of the City throughout its history. This is Zions recommended scenario.

The total population scenario is provided in the table below.

TABLE 1: HISTORIC ACTUAL AND PROJECTED POPULATION SCENARIO

Year	Population (Actual)	Projected Population (Base Case)
1998	795	-
1999	1,240	-
2000	1,984	-
2001	3,898	-
2002	5,267	-
2003	6,714	-
2004	8,520	-
2005	10,645	-
2006	13,574	-
2007	16,162	-
2008	17,135	-
2009	17,817	-
2010	18,624	-
2011	19,452	-
2012	20,663	-
2013	23,180	-
2014	24,403	-
2015	25,401	-
2016	28,138	-
2017	31,059	-
2018	34,524	-
2019	37,581	-
2020	42,449	-
2021	47,840	-
2022	54,875	-
2023	59,812	-
2024	-	64,334
2025	-	69,022
2026	-	73,877
2027	-	78,898
2028	-	84,085
2029	-	89,438
2030	-	94,958
2031	-	100,644
2032	-	106,496
2033	-	112,514
2034	-	114,764
2035	-	117,035
2036	-	119,328
2037	-	121,641
2038	-	123,974
2039	-	126,327
2040	-	128,698

Next, considering the recommended population scenario, we highlight annual percentage changes in the table below.

TABLE 2: ANNUAL PERCENT CHANGE IN PROJECTED POPULATION GROWTH

Year	Projected Population (Base Case)	YoY% Growth
2024	64,334	7.6%
2025	69,022	7.3%
2026	73,877	7.0%
2027	78,898	6.8%
2028	84,085	6.6%
2029	89,438	6.4%
2030	94,958	6.2%
2031	100,644	6.0%
2032	106,496	5.8%
2033	112,514	5.7%
2034	114,764	2.0%
2035	117,035	2.0%
2036	119,328	2.0%
2037	121,641	1.9%
2038	123,974	1.9%
2039	126,327	1.9%
2040	128,698	1.9%

Additionally, we provide year-over-year growth figures in count of people below in table 3.

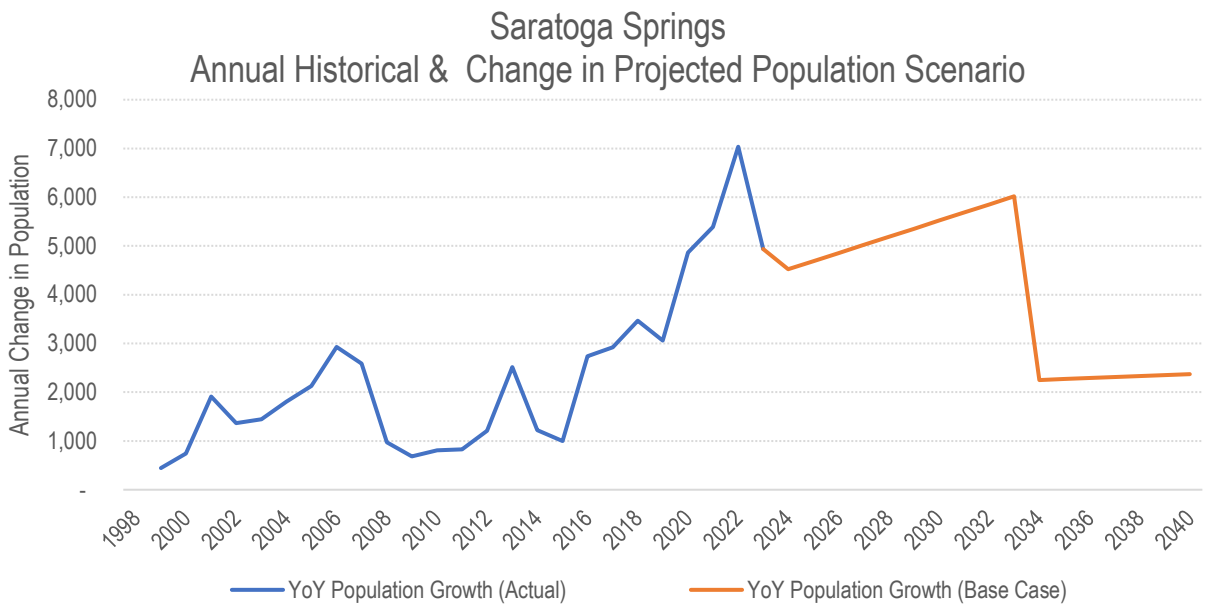
TABLE 3: ANNUAL CHANGE IN HISTORIC AND PROJECTED POPULATION GROWTH

Year	YoY Population Growth (Actual)	YoY Population Growth (Base Case)
1998	-	-
1999	445	-
2000	744	-
2001	1,914	-
2002	1,369	-
2003	1,447	-
2004	1,806	-
2005	2,125	-
2006	2,929	-
2007	2,588	-
2008	973	-
2009	682	-
2010	807	-
2011	828	-
2012	1,211	-
2013	2,517	-
2014	1,223	-
2015	998	-
2016	2,737	-
2017	2,921	-

Year	YoY Population Growth (Actual)	YoY Population Growth (Base Case)
2018	3,465	-
2019	3,057	-
2020	4,868	-
2021	5,391	-
2022	7,035	-
2023	4,937	
2024	-	**4,522**
2025	-	**4,688**
2026	-	**4,855**
2027	-	**5,021**
2028	-	**5,187**
2029	-	**5,353**
2030	-	**5,520**
2031	-	**5,686**
2032	-	**5,852**
2033	-	**6,018**
2034	-	**2,249**
2035	-	**2,271**
2036	-	**2,292**
2037	-	**2,313**
2038	-	**2,333**
2039	-	**2,353**
2040	-	**2,372**
Avg. Forward Growth/Year		**4,052**

Next, utilizing historical data regarding residential units added annually, we can understand the relationship between population growth and the growth of residential units in the community. This historical record of residential units added annually with forward projections is provided below.

CHART 2: SARATOGA SPRINGS HISTORICAL & PROJECTED RESIDENTIAL UNITS ADDED ANNUALLY



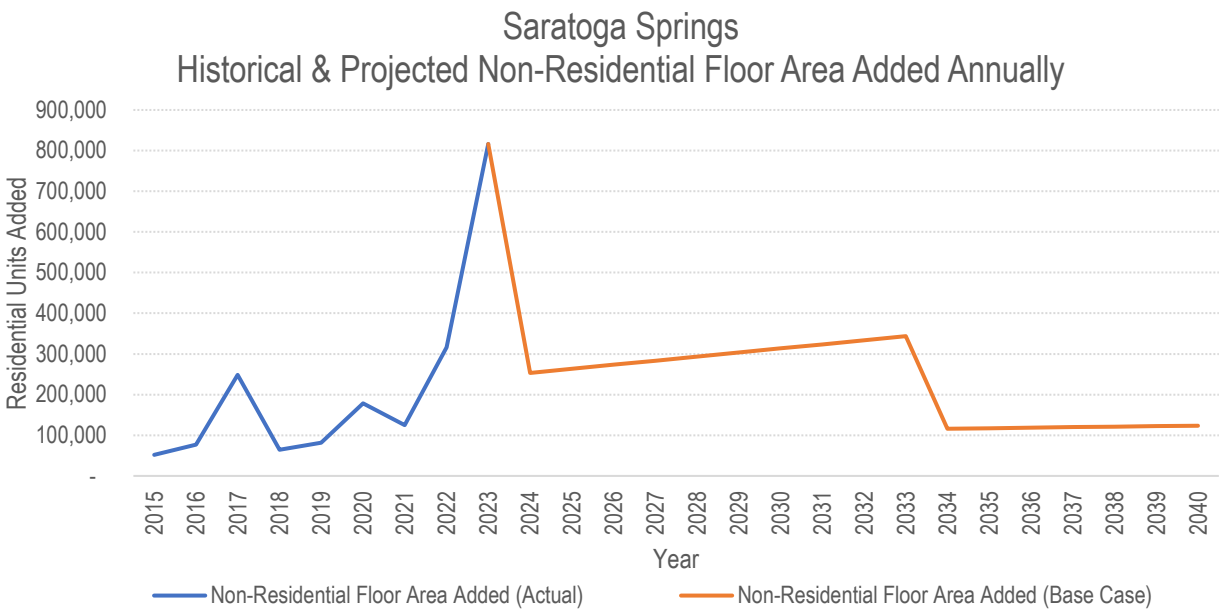
When analyzing the forward growth of residential units within Saratoga Springs, we again note the recommended base case scenario. This data is provided in table 4 below.

TABLE 4: HISTORICAL AND PROJECTED RESIDENTIAL UNITS ADDED ANNUALLY

Year	Residential Units Added (Actual)	Residential Units Added (Base Case)
2013	438	-
2014	315	-
2015	382	-
2016	812	-
2017	620	-
2018	666	-
2019	730	-
2020	1,536	-
2021	1,763	-
2022	1,091	-
2023	1,161	-
2024	-	**1,065**
2025	-	**1,100**
2026	-	**1,135**
2027	-	**1,169**
2028	-	**1,204**
2029	-	**1,238**
2030	-	**1,273**
2031	-	**1,307**
2032	-	**1,342**
2033	-	**1,377**
2034	-	**592**
2035	-	**597**
2036	-	**601**
2037	-	**606**
2038	-	**610**
2039	-	**614**
2040	-	**618**
Avg. Forward Growth/Year		**968**

Finally, we also provide a forecast of non-residential floor area added annually. We note that 2023 added non-residential floor area in an amount of 816,317 square feet, which stands 5.7x the historical average from 2015-2022. This is above trend, and while certainly possible to continue in the future, 2024 floor area constructed thus far is 151,770 square feet. Our statistical calculations predict 2024 to end with 322,719 square feet constructed in total. However, we acknowledge that the City has additional tangible, on-the-ground, knowledge regarding permitted construction that may diverge from this figure. Please see the historical chart and projections below.

CHART 3: SARATOGA SPRINGS HISTORICAL & PROJECTED NON-RESIDENTIAL FLOOR AREA ADDED ANNUALLY



Regarding non-residential floor area added, the Mid-Upper Range growth scenario is again selected. Over the future period from 2024-2040 we project an annual average of 224,844 square feet of non-residential floor area added annually. This data is provided directly in table 5 below.

TABLE 5: HISTORICAL AND PROJECTED NON-RESIDENTIAL FLOOR AREA ADDED ANNUALLY

Year	Non-Residential Floor Area Added (Actual)	Non-Residential Floor Area Added (Base Case)
2015	51,777	-
2016	76,676	-
2017	248,586	-
2018	64,614	-
2019	81,699	-
2020	178,188	-
2021	125,249	-
2022	316,469	-
2023	816,317	-
2024	-	**253,217**
2025	-	**263,255**
2026	-	**273,293**
2027	-	**283,332**

Year	Non-Residential Floor Area Added (Actual)	Non-Residential Floor Area Added (Base Case)
2028	-	**293,370**
2029	-	**303,409**
2030	-	**313,447**
2031	-	**323,485**
2032	-	**333,524**
2033	-	**343,562**
2034	-	**116,002**
2035	-	**117,318**
2036	-	**118,598**
2037	-	**119,843**
2038	-	**121,056**
2039	-	**122,239**
2040	-	**123,392**
Avg. Forward Growth/Year		**224,844**

Additional Considerations

As part of this analysis, Zions implemented a linear regression model coupled with prediction intervals calculated using Saratoga Springs historical data, including a prediction for year 2024 which is yet to close. As mentioned above, we acknowledge that the City may have additional tangible, on-the-ground, knowledge regarding growth in 2024 that is yet to be reflected in data.

APPENDIX C

Project Cost Estimates

Saratoga Springs Capital Facility Plan
Pressurized Irrigation System
Preliminary Engineers Cost Estimates

	Item	Unit	Pipe Diameter	2025 Unit Price	Quantity	Total Price	Category
PI01	***Well 7 Pipeline***						
	Install 10-inch Pipeline	LF	10	$ 270	500	$ 135,000	Source Conveyance
					Total	$ 135,000	
					Engineering & Admin. (10%)	$ 13,500	
					Contingency (10%)	$ 13,500	
					Total to Well 7 Pipeline	**$ 162,000**	
PI02	***New Jacobs Ranch Well***						
	Well Drilling	LS	NA	$ 1,500,000	1	$ 1,500,000	Source Conveyance
	Well Equipping	LS	NA	$ 2,500,000	1	$ 2,500,000	Source Conveyance
					Total	$ 4,000,000	
					Engineering & Admin. (10%)	$ 400,000	
					Contingency (10%)	$ 400,000	
					Total to New Jacobs Ranch Well	**$ 4,800,000**	
PI03	***Pond 13 & Pump Station 12 (Grandview Zone 3)***						
	Construct 8.5 AC-FT Pond	AC-FT	NA	$ 410,000	8.5	$ 3,485,000	Storage
	Construct 2,200 GPM Pump Station	LS	NA	$ 3,000,000	1	$ 3,000,000	Source Conveyance
	Install 20-inch Pipeline	LF	20	$ 410	5,200	$ 2,132,000	Source Conveyance
					Total	$ 8,617,000	
					Engineering & Admin. (10%)	$ 861,700	
					Contingency (5%)	$ 430,850	
					Total to Pond 13 & Pump Station 12 (Grandview Zone 3)	**$ 9,910,000**	
PI04	***Tickville Wash Pump Station***						
	Construct 4,000 GPM Pump Station	LS	NA	$ 5,000,000	1	$ 5,000,000	Source Conveyance
	Install 16-inch Pipeline	LF	16	$ 340	4,200	$ 1,428,000	Source Conveyance
	Install 24-inch Pipeline	LF	24	$ 480	1,400	$ 672,000	Source Conveyance
	10 AC-FT Staging Pond	LS	NA	$ 410,000	10	$ 4,100,000	Storage
					Total	$ 11,200,000	
					Engineering & Admin. (10%)	$ 1,120,000	
					Contingency (5%)	$ 560,000	
					Total to Tickville Wash Pump Station	**$ 12,880,000**	
PI05	***MVC/Tickville Wash Pipeline***						
	Install 16-inch Pipeline	LF	16	$ 340	5,000	$ 1,700,000	Source Conveyance
	Install 18-inch Pipeline	LF	18	$ 380	2,500	$ 950,000	Source Conveyance
					Total	$ 2,650,000	
					Engineering & Admin. (10%)	$ 265,000	
					Contingency (10%)	$ 265,000	
					Total to MVC/Tickville Wash Pipeline	**$ 3,180,000**	
PI06	***Well 8 Drilling and Equipping***						
	Well Drilling	LS	NA	$ 1,500,000	1	$ 1,500,000	Source Conveyance
	Well Equipping	LS	NA	$ 2,500,000	1	$ 2,500,000	Source Conveyance
	Install 12-inch Pipeline	LF	12	$ 300	3,300	$ 990,000	Source Conveyance
					Total	$ 4,990,000	
					Engineering & Admin. (10%)	$ 499,000	
					Contingency (5%)	$ 249,500	
					Total to Well 8 Drilling and Equipping	**$ 5,739,000**	
PI07	***Pond 8 Expansion***						
	Expand Pond 8 to 29 AC-FT	AC-FT	NA	$ 410,000	13	$ 5,330,000	Storage
					Total	$ 5,330,000	
					Engineering & Admin. (10%)	$ 533,000	
					Contingency (5%)	$ 266,500	
					Total to Pond 8 Expansion	**$ 6,130,000**	
PI08	***Zone 2 South Welby Jacob Pipeline***						
	Install 30-inch Pipeline	LF	30	$ 590	7,000	$ 4,130,000	Source Conveyance
					Total	$ 4,130,000	
					Engineering & Admin. (10%)	$ 413,000	
					Contingency (5%)	$ 206,500	
					Total to Zone 2 South Welby Jacob Pipeline	**$ 4,750,000**	

	Item	Unit	Pipe Diameter	2025 Unit Price	Quantity	Total Price	Category
PI09	***Pond 12***						
	Construct 24 AC-FT Pond	AC-FT	NA	$ 410,000	24	$ 9,840,000	Storage
	Install 24-inch Pipeline	LF	24	$ 480	6,500	$ 3,120,000	Source Conveyance
	Install 20-inch Pipeline	LF	20	$ 410	5,600	$ 2,296,000	Source Conveyance
					Total	$ 15,256,000	
					Engineering & Admin. (10%)	$ 1,525,600	
					Contingency (5%)	$ 762,800	
					Total to Pond 12	**$ 17,544,000**	
PI10	***Zone 2 South Pump & Pipeline (SLR)***						
	Install 2,750 gpm pumps in Pump Station 5	LS	NA	$ 750,000	1	$ 750,000	Source Conveyance
	Install 24-inch Pipeline	LF	24	$ 480	3,000	$ 1,440,000	Source Conveyance
					Total	$ 2,190,000	
					Engineering & Admin. (10%)	$ 219,000	
					Contingency (10%)	$ 219,000	
					Total to Zone 2 South Pump & Pipeline (SLR)	**$ 2,628,000**	
PI11	***Pond 14 and Pump Station 6 (Israel Canyon Zone 3)***						
	Construct 8 AC-FT Pond	AC-FT	NA	$ 410,000	8	$ 3,280,000	Storage
	Construct 3,800 gpm Pump Station	LS	NA	$ 3,000,000	1	$ 3,000,000	Source Conveyance
	Install 24-inch Pipeline	LF	24	$ 480	2,500	$ 1,200,000	Source Conveyance
					Total	$ 7,480,000	
					Engineering & Admin. (10%)	$ 748,000	
					Contingency (5%)	$ 374,000	
					Total to Pond 14 and Pump Station 6 (Israel Canyon Zone 3)	**$ 8,602,000**	
PI12	***Pond 15 and Pump Station 14 (Israel Canyon Zone 4)***						
	Construct 7 AC-FT Pond	AC-FT	NA	$ 410,000	7	$ 2,870,000	Storage
	Construct 1,850 gpm Pump Station	LS	NA	$ 3,000,000	1	$ 3,000,000	Source Conveyance
	Install 16-inch Pipeline	LF	16	$ 340	1,500	$ 510,000	Source Conveyance
					Total	$ 6,380,000	
					Engineering & Admin. (10%)	$ 638,000	
					Contingency (5%)	$ 319,000	
					Total to Pond 15 and Pump Station 14 (Israel Canyon Zone 4)	**$ 7,337,000**	
PI13	***Pump Station 33 - Inlet Park***						
	Construct 7,750 gpm Pump Station 33	LS	NA	$ 5,000,000	1	$ 5,000,000	Source Conveyance
	Install 24-inch Pipeline	LF	24	$ 480	3,300	$ 1,584,000	Source Conveyance
					Total	$ 6,584,000	
					Engineering & Admin. (10%)	$ 658,400	
					Contingency (5%)	$ 329,200	
					Total to Pump Station 33 - Inlet Park	**$ 7,572,000**	
PI14	***Pond 2 Concrete Lining***						
	Replace Existing Liner with Concrete	SY	NA	$ 242	2,720	$ 658,240	Storage
	Misc. Additional Construciton Items	LS	NA	$ 250,000	1	$ 250,000	Storage
					Total	$ 908,240	
					Engineering & Admin. (10%)	$ 90,824	
					Contingency (10%)	$ 90,824	
					Total to Pond 2 Concrete Lining	**$ 1,090,000**	
PI15	***SR 73 Crossing***						
	1/2 Trench under SR 73	LS	NA	$ 500,000	1	$ 500,000	Source Conveyance
	Install 12-inch Pipeline	LF	12	$ 300	300	$ 90,000	Source Conveyance
					Total	$ 590,000	
					Engineering & Admin. (10%)	$ 59,000	
					Contingency (10%)	$ 59,000	
					Total to SR 73 Crossing	**$ 708,000**	
					Total By Category		
					Source Conveyance	$ 50,627,000	
					Storage	$ 29,813,240	
					Total	$ 80,440,240	
					Total with Engineering, Administration and Contingency	$ 91,234,000	

APPENDIX D

Asset Depreciation

City of Saratoga Springs Pressurized Irrigation Asset Depreciation

	Source/Name	Zone	Capacity/Size		Unit Cost	Replacement Cost	Year Installed	Expected Useful Life (Years)	Remaining Useful Life (Years)	Depreciation
Water Source	Well 1 (Parkway Trail Well)	1	1000	gpm		$ 3,000,000	2000	30	5	$ 100,000
	Well 2 (Bike Park Well)	2N	900	gpm		$ 3,000,000	2000	30	5	$ 100,000
	Well 3 (Tuscany Well)	2N	500	gpm		$ 3,000,000	2000	30	5	$ 100,000
	Well 4 (Mink Ranch Well)	2N	800	gpm		$ 3,000,000	2000	30	5	$ 100,000
	Well 5 (Jacobs Ranch Well)	2S	3500	gpm		$ 6,000,000	2000	30	5	$ 200,000
	Marina Pump Station (36)	2S	4000	gpm		$ 6,000,000	2000	30	5	$ 200,000
	Church Booster ULDC	1	1100	gpm		$ 3,000,000	2000	30	5	$ 100,000
	ULDC PS (32)	1	5000	gpm		$ 7,000,000	2000	30	5	$ 233,333
	Welby Jacob (31) Z3N	3N	1150	gpm		$ 3,000,000	2000	30	5	$ 100,000
	Welby Jacob (31) Z2	2N	1080	gpm		$ 3,000,000	2000	30	5	$ 100,000
Water Storage	Pond 1 (Overlook)	1	2.70	acre-ft	$ 375,000	$ 1,012,500	2000	50	25	$ 20,250
	Pond 2 (Deer Canyon)	2S	1.50	acre-ft	$ 375,000	$ 562,500	2000	50	25	$ 11,250
	Pond 3 (Harvest Moon)	2N	9.00	acre-ft	$ 375,000	$ 3,375,000	2000	50	25	$ 67,500
	Pond 4 (Wildflower Zone 3)	3N	5.00	acre-ft	$ 375,000	$ 1,875,000	2000	50	25	$ 37,500
	Pond 6 (Israel Canyon Zone 2)	2S	38.00	acre-ft	$ 375,000	$ 14,250,000	2000	50	25	$ 285,000
	Pond 7 (Fox Hollow Zone 3)	3S	6.00	acre-ft	$ 375,000	$ 2,250,000	2000	50	25	$ 45,000
	Pond 8 (Evans Ln)	1	17.00	acre-ft	$ 375,000	$ 6,375,000	2000	50	25	$ 127,500
	Pond 9 (Mt. Saratoga Z2)	2N	13.00	acre-ft	$ 375,000	$ 4,875,000	2000	50	25	$ 97,500
	Pond 10 (Mt. Saratoga Z3)	3N	5.60	acre-ft	$ 375,000	$ 2,100,000	2000	50	25	$ 42,000
	Pond 11 (Wildflower Zone 4)	4N	4.60	acre-ft	$ 375,000	$ 1,725,000	2000	50	25	$ 34,500
	Pond 20 (Harbor Pkwy)	2S	11.00	acre-ft	$ 375,000	$ 4,125,000	2000	50	25	$ 82,500
Pressurized Pipes	**PVC**									
	6"		595,209	LF	$ 175	$ 104,161,488	2000	75	50	$ 1,388,820
	8"		85,371	LF	$ 190	$ 16,220,405	2000	75	50	$ 216,272
	10"		18,475	LF	$ 230	$ 4,249,325	2000	75	50	$ 56,658
	12"		79,271	LF	$ 260	$ 20,610,509	2000	75	50	$ 274,807
	14"		3,788	LF	$ 290	$ 1,098,645	2000	75	50	$ 14,649
	16"		26,274	LF	$ 290	$ 7,619,422	2000	75	50	$ 101,592
	18"		2,263	LF	$ 335	$ 758,265	2000	75	50	$ 10,110
	20"		17,312	LF	$ 360	$ 6,232,369	2000	75	50	$ 83,098
	24"		4,934	LF	$ 435	$ 2,146,318	2000	75	50	$ 28,618
	30"		0	LF	$ 560	$ -	2000	75	50	$ -
	DI									
	6"		2,151	LF	$ 215	$ 462,490	2000	100	75	$ 4,625
	8"		617	LF	$ 230	$ 141,871	2000	100	75	$ 1,419
	10"		47	LF	$ 270	$ 12,575	2000	100	75	$ 126
	12"		45,211	LF	$ 300	$ 13,563,173	2000	100	75	$ 135,632

	14"			1,683	LF	$ 315	$ 530,173	2000	100	75	$ 5,302
	16"			34,879	LF	$ 330	$ 11,510,132	2000	100	75	$ 115,101
	18"			4,062	LF	$ 375	$ 1,523,178	2000	100	75	$ 15,232
	20"			7,939	LF	$ 400	$ 3,175,440	2000	100	75	$ 31,754
	24"			2,628	LF	$ 475	$ 1,248,519	2000	100	75	$ 12,485
	30"			7,741	LF	$ 600	$ 4,644,368	2000	100	75	$ 46,444
Pump Stations		From Zone	To Zone								
	Booster 2 - Deer Canyon	2S	3S	4,350	gpm	$ 1,000	$ 4,350,000	2000	30	6	$ 145,000
	Booster 8 - Evans Lake	1	2N	4,000	gpm	$ 1,000	$ 4,000,000	2000	30	6	$ 133,333
	Booster 9 - Mt Saratoga Zone 3	2N	3N	2,250	gpm	$ 1,000	$ 2,250,000	2000	30	6	$ 75,000
	Booster 4 - Lucky Clover	3N	4	1,800	gpm	$ 1,000	$ 1,800,000	2000	30	6	$ 60,000
	Booster 13 - Welby Jacob (Jacob Canal)	2N	3N	1,150	gpm	$ 1,000	$ 1,150,000	2000	30	6	$ 38,333

APPENDIX E

40 Year Water Rights Plan

MEMORANDUM

DATE: September 30, 2025

TO: Jeremy Lapin, P.E.
City Engineer and Public Works Director
City of Saratoga Springs
1307 N Commerce Drive
Saratoga Springs, UT 84045



FROM: Celinda F. Jensen, P.E.
Hansen, Allen & Luce, Inc. (HAL)
859 West So. Jordan Pkwy – Suite 200
South Jordan, Utah 84095

SUBJECT: City of Saratoga Springs 40-Year Plan

PROJECT NO.: 360.09.300 Water Rights Assistance

PURPOSE

The City of Saratoga Springs was incorporated in 1997 and has experienced rapid growth. Securing water resources has been a primary focus from the beginning. Continued growth depends on strategic planning for obtaining, managing, and protecting City water rights and resources.

The purpose of this memorandum is to satisfy the requirements of a 40-Year Plan as specified in Utah Code 73-1-4. Utah Code protects the City's water rights from forfeiture, provided the City can show the water will be needed for future use through the year 2065.

REQUIREMENTS OF A 40-YEAR PLAN

The reasonable future water requirement of the public is defined by statute as the amount of water needed in the next 40 years by the persons within the public water supplier's projected service area, based on anticipated population growth or other water use demand. To show this comparison, standards for a 40-Year Plan are specifically defined in Administrative Code Reference R655-18 as summarized below:

- The amount of physical water currently diverted and used in their water system;
- Description of the systems and sources of water;
- Projected future water requirements for the system.
- Comprehensive inventory list for water rights, shares in water companies, or any contracts or documents evidencing its right to receive water from other entities to use in the system.
- Explanation of how each specific water right, for which the 40-Year Plan is being submitted, is needed to meet the projected future water requirements of the system;

- Population projection within a Public Water Supplier's service area.
- Projected water use per capita and other water demand estimates based upon established engineering principles, actual water use data, or other reliable measures.

In the following sections and addressed in this memorandum for the City summarizes the water rights the City will need to sustain itself through at least the next 40 years.

WATER RIGHT DATA REFERENCE

Information on water rights listed in this report was obtained from the DWRi's database accessed through January 2025. Original documents on each water right such as memorandum decisions and certificates issued by the State Engineer, decrees, etc. are the controlling source of this summarized information and can be found in the scanned documents of the DWRi's website for each water right unless otherwise cited (DWRi, 2025).

PUBLIC WATER SUPPLIER

Physical Water Diverted

The City is a public water supplier. They own and operate separate drinking water and secondary pressurized irrigation (PI) water systems.

As a public water supplier, the City annually reports water diverted into its water systems to the Division of Water Rights (DWRi). Table 1 and Table 2 summarize the City's reported water use for the past five years for the drinking water system and their irrigation systems respectively.

TABLE 1
REPORTED DRINKING WATER USE (DWRI 2025)

Drinking Water Source Name	2020 (acre-feet)	2021 (acre-feet)	2022 (acre-feet)	2023 (acre-feet)	2024 (acre-feet)
Drinking Water Well #2	185.74	437.30	221.85	10.91	187.45
Drinking Water Well #3	1,000.20	827.60	556.25	747.14	614.64
Drinking Water Well #4	595.63	351.88	246.43	503.13	262.05
Drinking Water Well #6	494.58	598.78	520.03	521.14	144.37
Drinking Water Well #7	0.00	0.00	0.00	0.00	0.00
Drinking Water Well #8	0.00	0.00	0.00	0.00	0.00
Subtotal Wells	2,276.15	2,215.56	1,544.56	1,782.32	1,208.51
Purchased from CUWCD	1,275.53	984.25	2,111.82	2,111.40	2,937.9
Crossover to Irrigation	-1,209.53	-765.13	-1,121.54	-1,199.79	-1,043.48
Total:	**2,342.15**	**2,434.68**	**2,534.84**	**2,693.93**	**3,102.93**

Drinking Water System

The City diverts groundwater from wells on the east side of the Jordan River to supply its drinking water system. Drinking Water Wells #7 and #8 are drilled but not completed and have not provided water to the City's drinking water system in the past five years.

Drinking Water Well #1 was renamed Secondary Well #1 and is used today in the PI system. Water rights approved on this point of diversion may refer to the common name as Drinking Water Well #1 (HAL DW Master Plan, 2020).

The City is dedicated to maintaining and constructing new wells and supporting infrastructure to have the capacity necessary to deliver their portfolio of groundwater water rights at buildout.

The City also has a multi-year service agreement to purchase water from Central Utah Water Conservancy District (CWP Water). The amount of water required by the City increases each year up to 10,300 acre-feet.

For the past five years, as shown in Table 1, the City uses some of the water from its drinking water sources in its secondary water system. Drinking water usage has steadily increased in the past five years due to rapid development.

TABLE 2
REPORTED IRRIGATION WATER USE (DWRI 2025)

PI Source Name	2020 (acre-feet)	2021 (acre-feet)	2022 (acre-feet)	2023 (acre-feet)	2024 (acre-feet)
Marina Pump Station	1,543.96	1,042.67	1,468.56	1,107.33	1,353.88
Welby Jacob Pump Station	0.00	197.77	346.24	383.02	726.02
ULDC Pump Station	1,028.18	1,162.21	1,499.57	1,415.71	1,675.44
Crossover from Drinking Water Sources	1,209.53	765.13	1,121.54	1,199.79	1,043.48
Surface Water	3,781.67	3,167.78	4,435.91	4,105.85	4,798.82
Secondary Well #1	0.00	0.00	231.81	0.00	704.01
Secondary Well #2 (Sunrise)	613.79	535.86	258.19	396.96	340.36
Secondary Well #3 (Vinyard)	351.66	181.60	187.18	162.54	182.26
Secondary Well #4 (Mink)	403.36	162.54	265.81	926.32	265.33
Secondary Well #5 (Jacobs)	1,028.18	1,162.21	1,499.57	1,415.71	1,439.72
Groundwater	2,822.22	2,614.83	1,877.68	1,759.34	2,931.68
Total:	**6,603.89**	**5,782.61**	**6,313.59**	**5,865.19**	**7,730.5**

Pressurized Irrigation System

The City uses five wells and surface water sources in their PI system as shown in Table 2 as reported by the City to the DWRi. The City also uses water from their drinking water sources that cross over to the PI system.

Secondary Well #1 was used prior to 2020 in the drinking water system, but as of 2022 has been used solely as a source for the PI system. The secondary wells are located on the west side of the Jordan River except Secondary Well #1, which is located on the east side of the Jordan River near the City drinking water wells.

The City collects water in ponds and has pump stations adjacent to a Utah Lake Distributing Company (ULDC) canal and Welby Jacob Water Users Association (WJWUA) canal respectively. This water is pumped into the PI system. The Marina Pump Station on the north west side of Utah Lake pumps water directly from the Lake into the PI system.

Total Reported Use

The City reported its highest use of water on record last year, with **3,103 acre-feet** of water from the drinking water system and **7,731 acre-feet** from the PI system. The total use from both systems was **10,833 acre-feet** in 2024.

MUNICIPAL WATER RIGHTS

Groundwater

City groundwater rights are summarized in Table 3 from the full list of groundwater water rights found in Attachment A. Attachment A lists the groundwater rights recognized by the State Engineer for diversion from City well sources (DWRi, 2025).

In Table 3, water rights approved for diversion on a drinking water source are counted as drinking water rights in the subtotal of water rights. All water rights in Table 3 are approved for municipal use within the service area of the City.

The DWRi defines a perfected water right as, “a fully developed water right that has been certificated by the State Engineer, decreed by a court of law, or has been legislated as such.” Table 1 lists municipal groundwater water rights in the name of the City of Saratoga Springs that are recognized by the State Engineer as approved for municipal use from City wells as recorded by the Division of Water Rights, (DWRi, 2025).

TABLE 3
MUNICIPAL GROUNDWATER WATER RIGHTS SUMMARY
(DWRI, 2025)

Municipal Ground Water Rights	Water System	Quantity (acre-feet)
Perfected (Culinary Wells)	Drinking	3,660
Perfected (Secondary Wells)	PI	654
Perfected	**PI and Drinking**	**4,313**
Elections Recommended for Approval	Drinking	703
Perfected and Recommended Elections	**PI and Drinking**	**5,016**
Approved Change Application (Culinary Wells)	Drinking	4,393
Approved Change Application (Secondary Wells)	PI	1,010
Approved Change Applications	PI and Drinking	5,403
Subtotal (Culinary Wells)	Drinking	8,352

Municipal Ground Water Rights	Water System	Quantity (acre-feet)
Subtotal (Secondary Wells)	PI	1,664
TOTAL	**PI and Drinking**	**10,016**

Perfected
A Perfected water right is a fully developed water right that has been certificated by the State Engineer and decreed by a court of law. Water rights perfected for municipal use on City groundwater sources in Table 3 are separated out by those approved on drinking water sources and those approved only on secondary wells. The total diversion from perfected water rights is **4,313 acre-feet**.

Elections
During an active adjudication, an election can be filed in lieu of submitting proof on a change application. When an adjudication was opened in 2021 in the Lehi Subdivision, Area 55 Book 4, the City submitted elections on several water rights. The State has recommended to the State Engineer that the City can perfect the quantity of water shown in Table 3 as elections. The City has filed signed WUC claiming the elections for about 703 acre-feet of water on several water rights. When the Proposed Determination is published, the City anticipates a total of approximately **5,016 acre-feet** of perfected water rights.

Approved
Approved change applications for municipal use on active City sources make up most groundwater water rights approved on City wells. Table 3 summarizes how many water rights are approved on at least one drinking water source and water rights approved on secondary wells only. The total amount of groundwater water rights in approved change applications for municipal use on active City wells is about **5,403 acre-feet**, as listed in Table 3.

All Groundwater Water Rights
The City has a total of about **10,016 acre-feet** of water approved for diversion from City wells for municipal use in the service area of the City. This total includes water rights with approved change applications, perfected that are perfected, and water rights with recommended elections of water rights for municipal use. Most of these water rights, 8,352 acre-feet, can be used in the drinking water system.

Surface Water

The City has filed municipal change applications on all surface water rights listed in Attachment B. Table 4 is a summary of their surface water rights approved for municipal use. The water rights are approved for diversion at the Marina Pump Station on Utah Lake and the City's pump station adjacent to the Utah Lake Distributing Company (ULDC) canal known as the ULDC Pump Station. The City also has municipal water rights that can be diverted at the pump station off the Welby Jacob Water Users Association (WJWUA) canal known as the Welby Jacob Pump Station.

TABLE 4
MUNICIPAL SURFACE WATER RIGHTS SUMMARY
(DWRI, 2025)

Municipal Surface Water Rights	Water System	Depletion (acre-feet)	Diversion (acre-feet)
Marina Pump Station Only	PI	166	345
ULDC Pump Station	PI	2,208	4,150
Marina Pump Station	**PI**	**2,374**	**4,494**
Welby Jacob Pump Station	PI	258	547
TOTAL	**PI**	**2,632**	**5,041**

RELIABLE SUPPLY

For the City's well water rights, we assume additional infrastructure can be constructed as needed and the aquifer can deliver the City's portfolio of groundwater water rights. Table 3 shows the City has the right to divert 10,016 acre-feet per year from City wells.

It is understood that groundwater water rights in North Utah County are overallocated, it is possible that in the future, priority dates may be used to determine what water rights can be used. A study by HAL, used June 24, 1952, as a proposed cut-off date as an exercise to show how overallocated groundwater water rights may be managed in the future. Evaluating the City's well water rights with their base priority date, this would render some of their groundwater supply unavailable. This, however, was not considered in Table 5.

TABLE 5
ESTIMATED RELIABLE SUPPLY OF WATER RIGHTS

Water Rights/Shares	Reference	Approved Quantity (acre-feet)	Source	Reliable Supply Quantity (acre-feet)
Well Water Rights[1]	Table 3	10,016	Groundwater	10,016
Surface Water Rights	Table 4	5,041	Utah Lake & Jordan River	4,105
Deliverable CUP Water[2]	Attachment B	3,060	Central Utah Water (CUWCD)	3,060
Reserved CUP Water by Contract[3]	Attachment B	7,240	Central Utah Water (CUWCD)	7,240
			Total	**24,421**

[1]It is assumed that all groundwater water rights will be available for future use.

[2]Deliverable water purchased for the 2025-2026 season which started July 1, 2025 according to the 2009 and 2018 CUP and City Water Supply Agreements found in Attachment B.

[3]Reserved CUP water for the City according to the 2009 and 2018 CUP and City Water Supply Agreements found in Attachment B.

As shown in Table 4, the City has the right to divert 5,041 acre-feet from Utah Lake and the Jordan

River through approved surface water rights as recognized by the State Engineer. The depletion limit as specifically stated on each approved change application by the Order of the State Engineer is 52.2% as an average of depletion limits on approved surface change applications.

The City, however, is more efficient at using water in their secondary system than historical irrigation and returns a smaller percentage of the water to Utah Lake, thus depleting more than the historical use. To account for this, the City understands it must divert less than allowed on the water right to keep within their depletion allowance. It is estimated to be about 81.5% less, reducing the reliable supply in Table 5 for surface water rights to 4,105 acre-feet.

The result of considering reliable supply for the City's water right portfolio, reduces the amount of available water rights for well and surface sources to 10,514 acre-feet.

The City's agreements with Central Utah Water Conservancy District (CUWCD) dictate the amount of water available for the City to purchase and have delivered in their service area according to "Take Down and Delivery Schedules" found in Attachment B from agreements with CUWCD from 2009 and 2018. From the 2018 agreement, the City receives the annual delivery of 300 acre-feet of water. The 2009 contract includes incremental blocks of water available for purchase annually through 2045.

As of July 1st, 2025, the City purchased a cumulative annual volume of 2,760 acre-feet of deliverable water from the 2009 contract and 300 acre-feet from the 2018 contract for a total delivery in the 2025-2026 season of 3,060 acre-feet of water. In twenty years, the full allotment of 10,300 acre-feet of water is expected to be available.

REUSE WATER

Available Water For Reuse

The City along with other cities of northern Utah County that send their sewage effluent to Timpanogos Special Service District (TSSD), filed a Notice of Sewage Effluent to the Division of Water Rights. The City's Water Reuse Application NS039 (Reuse Application) was filed on September 25, 2023. The application is pending.

The City's Reuse Application to the State Engineer proposes a quantity of 13,717 acre-feet of water be allowed for reuse based on the City's water rights and diversion and depletion limits. The purpose of the Reuse Application is to augment the secondary irrigation water supply with a drought resistant water source.

If the City's reuse application is rejected, additional water from Utah Lake will need to be acquired to meet future water demand requirements.

FUTURE WATER REQUIREMENTS

40-Year Projected Demand

The reasonable future water requirement of the public is defined by the statute as the amount of water needed in the next 40 years by the persons within the public water supplier's projected service area based on projected population growth and other water use demands.

Population Projection

The population in the City has rapidly increased since incorporation in 1997. The first census data for the City reports a population of 1,003 from the 2000 census as illustrated in Figure 1. The U.S. Census in 2010 and 2020 showed the population increase of 17,781 to 39,085, a rate of increase of 119.8%, much greater than the rest of Utah County which during the same census years increased 28%. Figure 1 shows the historical and forecasted population from 2000 to 2065.

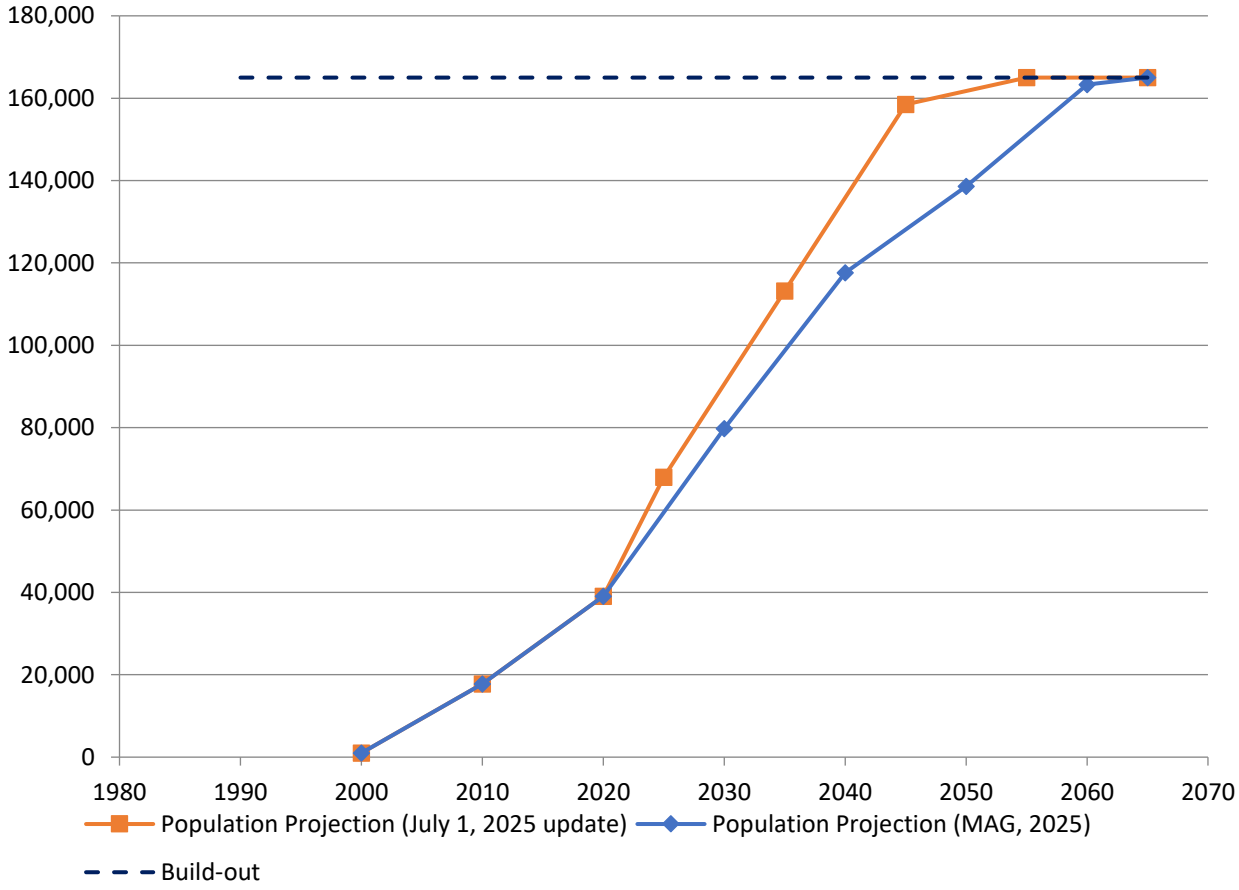


FIGURE 1 SARATOGA SPRINGS HISTORICAL AND PROJECTED POPULATION

According to the City's General Plan, the population is expected to continue its rapid growth in the future (General Plan, 2022). Mountainland Association of Governments (MAG) population projections were used to project population growth, with projections extended beyond 2050 based on previous growth rates (MAG, 2025). The MAG population projection was adjusted based on a household count on July 1, 2025 of 68,000 residents, exceeding the projected growth. Build-out population is estimated to be 165,000 based on the City's General Plan assumptions and is used

in Figure 1 as the cutoff for all projections. Although population projections are important for planning purposes, land-use changes, new development, regulatory changes, and City choices will ultimately serve as the trigger for when the City reaches build-out. The build-out population of 165,000 is based on the availability of drinking water.

Average Yearly Demand

Average yearly demand is the volume of water used during an entire year and is used to ensure the water rights can supply enough volume to meet demand under existing and future conditions. The City is in the process of updating their Master Plans for their drinking water and PI system. The average yearly future demand for the drinking water system and PI system were estimated based on build out conditions which is estimated to be reached prior to 2065.

Drinking Water System

The most recent Drinking Water Master Plan was prepared for the City in 2017 by HAL (HAL DW Master Plan, 2017). The City is in the process of updating their master plan for 2025. In these plans, future average yearly demand for the City was calculated by computing the demand from actual water use data with a level of service of 0.30 acre-feet/ERC, where ERC stands for Equivalent Residential Connections. This future demand is based on build-out conditions according to the current general plan which is assumed to be reached prior to the year 2065 for the 40 Year Plan. The break down of ERCs at build-out for residential, commercial, institutional, and industrial use, shown in Table 6, is also based on the City's General Plan adopted in 2022 (General Plan, 2022).

In future master plans for drinking water, the City plans to use the amount of water available for diversion on City water rights approved on drinking water wells along with the maximum contracted supply of CUP Water as build-out conditions. With this definition of build-out, Table 6 shows the number of ERCs and average annual demand for drinking water at build-out.

TABLE 6
FUTURE AVERAGE YEARLY DEMAND

Water System	Connections at Build-out (ERCs)	Irrigated Acres at Build-out	Level of Service	Average Yearly Demand (acre-feet)
Drinking Water	62,173 (48,705 Residential, 12,161 Commercial, 917 Institutional 390 Industrial)	N/A	0.30 acre-feet per ERC	18,652
PI System	N/A	7,500	3.2 acre-feet per acre	24,000

PI Water System

The future demand for the PI Water System was estimated in the PI Water System Master Plan completed in 2017 (HAL PI Master Plan 2017) and is being updated for 2025. Estimating 7,500 irrigated acres at build out conditions, and applying the future level of service of 3.2 acre-

feet/irrigated acre the average yearly demand per the City's level of service is projected to be 24,000 acre-feet as shown in Table 6.

This future demand is based on build-out conditions according to the current general plan and build-out is assumed to be reached prior to the year 2065 for the 40-Year Plan.

WATER SUPPLY VS. PROJECTED WATER DEMAND

The City expects to reach build-out prior to 2065. Growth over the coming decades will result in an increase in water demand. Based on a decision by the City, build-out is assumed to be reached when the availability of reliable drinking water for the City has been reached. Table 7 compares reliable supply of various City sources of water to projected demand.

In addition to the City as a whole, Table 7 shows the projected water requirements for both their drinking water and irrigation systems.

TABLE 7
WATER SUPPLY VS. PROJECTED WATER DEMAND

	Drinking Water System Volume (acre-feet)	Pressurized Irrigation System Volume (acre-feet)
Existing Water Rights[1]	8,352	6,705
Deliverable CUP Water[2]	3,060	0.0
Reserved CUP Water by Contract[3]	7,240	0.0
Subtotal	18,652	6,705
Reliable Water Supply[4]	18,652	5,769
Potential Reuse[5]	0.0	13,717
City Projected Water Demand	-18,652[6]	-24,000
Additional Source Needed:	**0.0**	**-4,514**

[1]Total approved quantity in acre-feet of well and surface water rights summarized in Table 3 and Table 4.
[2]Contracted deliverable water by CUWCD as shown in Appendix B as of the 2025-2026 season.
[3]Additional contracted CUP water to be available for purchase and delivery to the City by 2045.
[4]Amount of reliable water supply based on water rights and availability of source from Table 5.
[5]The City has a pending reuse application submitted to the DWRi which, if approved, would allow reuse of effluent from TSSD, not to exceed approved depletion limits on the City's water rights.
[6]In future Drinking Water Master Plans, the City plans to use the reliable water supply from water rights and contracted CUP Water as the build-out water demand for the future.

The City plans to use the amount of water available for diversion on City water rights approved on drinking water wells along with the maximum contracted supply of CUP Water as build-out conditions for the drinking water system. All CUWCD contract water is assumed to serve the drinking water system at build-out.

The City has a pending reuse application submitted to the DWRi which, if approved would allow

reuse of effluent from TSSD and supplement the City's secondary water supply with up to 13,717 acre-feet of water. The CUP water reserved by contract should become fully available by 2045.

As shown in Table 7, the PI system has insufficient water rights and sources to meet projected future demands at build-out. It is crucial that the City preserve and protect all existing City water rights to meet future demand for water. The contract for CUP Water is also essential for future drinking water needs. Understanding that additional water from CUWCD is not available, the City's plan is to continue to acquire water rights with development, for surface water to meet the projected future demand for the PI system. Reuse is also being pursued as a possible option for the City.

The City's plans to meet future water demand shown in Table 7 is directly affected by State legislation and policy decisions. It is recommended that the City continue to work with legislators and federal and state agencies to provide input and perspective to shape laws and policy that support the water resources the City is relying on to meet future demand. This includes but isn't limited to involvement with water reuse, contracted CUP water, and groundwater management plans.

This analysis does not include the potential scenario that one or more of the major water sources is rendered unusable. Individual water systems can be affected by terrorist activities, accidental chemical spills, forest fires, impacts involving direct water contamination or turbidity, water treatment plant failures, earthquakes, etc. The City should consider system interconnections, constructing redundant facilities, and other measures to provide backup supplies in emergency situations.

CONCLUSIONS AND RECOMMENDATIONS

The City has a clear need to protect its existing water rights and acquire additional access to water to meet anticipated demands through at least the next 40 years. To that end, HAL offers the following recommendations:

- Take all necessary actions to preserve existing water rights. Such actions include updating ownership records with the DWRi, filing change applications to establish municipal use in irrigation company shares, and filing proof of beneficial use or extension of time requests as dictated by Utah law.
- Consider exchanges, purchases, or other options to continue to acquire water rights.
- Continue to file change applications to convert shares in irrigation companies acquired by the City to municipal use.
- Prepare Proof of Beneficial Use applications to submit to the DWRi for as many rights as possible without exceeding the City's record of use.
- Continue to support efforts for reuse of sewer effluent, fulfillment of contracts for CUP water distribution, and groundwater management plans that consider City water assets.

The City can submit this report to the DWRi when required to show reasonable future water requirements and a 40-Year Plan. When submitting a 40-Year Plan, regulation states, each part of the Plan must be up-to-date and current.

The report becomes the water rights action plan going forward, and it is important that the City track actionable changes to their water rights, sources, etc., so that the 40-Year Plan can be easily

updated as actions are implemented, or a supplement to the plan prepared, for future required submission. The 40-Year Plan becomes the water asset road map for the City as it pertains to water rights and water supply.

REFERENCES

City of Saratoga Springs Drinking Water Master Plan and Capital Facility Plan, prepared by Hansen, Allen & Luce. Adopted in 2017. (HAL DW Master Plan, 2017)

City of Saratoga Springs Secondary Water Master Plan and Capital Facility Plan, prepared by Hansen, Allen & Luce. Project 360.07.400. Adopted in 2017. (HAL PI Master Plan, 2017)

DWRi (Utah Division of Water Rights). 2025. Water Rights Database. Accessed July 2025. https://waterrights.utah.gov/search/ (DWRi, 2025)

Mountainland Association of Governments (MAG). 2025. Data Population of Governments. https://magutah.gov/mag-population-projections/ (MAG, 2025)

Saratoga Springs General Plan Update 2022-2042. Making It Better Together. Adopted September 6, 2022. (General Plan, 2022) https://www.saratogasprings-ut.gov/196/General-Master-Plans

ATTACHMENT A – MUNICIPAL WATER RIGHTS

CITY OF SARATOGA SPRINGS MUNICIPAL GROUNDWATER WATER RIGHTS (DWRI, 2025)

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
54-1226	Certificated	SHAR – NJIC	1853	294.12	132.940	C & S
54-1086	Certificated	SHAR - USLCC	1870	201.96	85.630	C & S
54-1227	Certificated	SHAR - USLCC	1870	82.62	37.340	C & S
54-1223	Certificated	SHAR - USLCC	1870	330.48	149.400	C & S
54-1214	Certificated	SHAR - USLCC	1870	142.29	64.315	C & S
54-1360	Certificated	SHAR - USLCC	1870	64.26	29.046	C & S
55-9343	Certificated	SHAR - EJIC	1877	401.72	170.330	C & S
54-1088	Certificated	SHAR - EJIC	1877	15.488	10.938	C & S
54-1204	Certificated	SHAR - EJIC	1877	62.92	26.678	C & S
54-1203	Certificated	SHAR - EJIC	1877	62.92	26.678	C & S
54-1212	Certificated	SHAR - EJIC	1877	579.59	261.945	C & S
55-9726	Certificated	SHAR - ULDC	1908	246.00	104.300	C & S
55-11899	Certificated	SHAR - ULDC	1908	270.81	114.810	C & S
55-11913	Certificated	SHAR - ULDC	1908	235.06	99.670	C & S
54-1141	Certificated	SHAR – ULDC	1908	444.57	188.500	C & S
54-1195	Certificated	SHAR - ULDC	1908	224.84	101.630	C & S
Perfected (Culinary Wells) - Subtotal				3,659.648	1,604.15	
54-1134	Certificated	SHAR – SJCC	1870/2004	69.16	29.320	S
54-1085	Certificated	SHAR - USLCC	1870/2007	270.81	114.82	S
54-1136	Certificated	SHAR - EJIC	1877/2004	58.08	30.780	S
55-11924	Certificated	SHAR - ULDC	1908/2003	255.5	108.332	S
Perfected (Secondary Wells Only) - Subtotal				653.55	283.252	
Perfected Water Rights				4,313.20	1,887.402	
55-963	Election	A31503	1959	3.25	2.89	C
55-542 55-9680	Election	A21900 U11123	1899	67.36	38.546	C & S
55-2905	Election	U11123	1899	16.00	9.040	C & S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
55-9727	Election	A29064	1957	30.882	17.448	C & S
55-695 55-860 55-2433 55-2820 55-2821 55-3303 55-3304 55-3541	Election	A26026 A29311 U6867 U11013 U11014 U13549 U13550 U16970	1954 1957 1936 1936 1890 1895 1895 1895	203.384	119.875	C & S
55-1849 55-2398 55-4016	Election	U2650 U6484 U21583	1910 1910 1900	150.12	85.3	C & S
55-2799	Election	U10992	1906	15.952	9.159	C & S
55-3556	Election	U17027	1905	2.94	2.84	C & S
55-2913 55-3667 55-6488	Election	U11131 U17594 A54380	1919 1900 1980	44.47	27.216	C & S
55-9250 55-9229	Election	U4955 A57606	1905 1994	3.996	2.240	C & S
55-2907 55-6091 55-8193 55-12957	Election	U11125 U22900 A65256 U11130	1899 1934 1991 1899	94.794	55.075	C & S
55-12896 55-12898	Election	A23522 U4935	1894 1952	28.458	16.292	C & S
55-12918	Election	A31728	1905	6.79	3.836	C & S
55-11977	Election	U11123	1899	7.000	3.955	C & S
55-13151	Election	A23276	1951	16.315	9.355	C & S
55-2807	Election	U11000	1890	8.940	6.330	C & S
55-6613	Election	A55941	1981	1.898	1.103	C & S
Recommended Elections (Culinary wells) - Subtotal				702.55	410.5	
Perfected and Recommended Elections - Subtotal				5,015.75	2,297.902	
55-9572	a48409	SHAR – ULDC	1908/2022	638.75	288.720	C & S
55-9582	a26478	SHAR – EJIC	1877/2002	101.64	43.100	C & S
54-863 54-864 54-865 54-866 54-867 54-868	a29654	A26748b	1955/2004	187.91	99.589	C & S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
54-869 54-870 54-871 54-872 54-873 54-874 54-875 54-876 54-877 54-878 54-879 54-880 54-881 54-882 54-916 54-917 54-918 54-975 54-976 54-977 54-978						
54-39 54-68 54-100 54-102 54-126 54-127 54-1097 54-1098 55-2242 55-3828 55-11969	a28929	A23385 A33356 U6139 U8360 U11068 U11071 A33112 A37227 U5029 U19680 U13562	1952/2004 1976/2004 1932/2004 1934/2004 1930/2004 1930/2004 1961/2004 1965/2004 1899/2004 1909/2004 1917/2004	107.849	82.855	C & S
51-8050	a36936	Decree	1889/2010	50	28.250	C & S
53-1686	a36127	A33374b	1961/2009	450	237.656	C & S
54-623	a36309	A26748	1955/2010	239.25	135.180	C & S
57-10880	a45314	SHAR - EJIC	1877/2019	231.06	107.892	C & S
55-243 55-373	a45861	A15823 A18488	1944/2020 1947/2020	18.280	10.450	C & S
55-1975 55-1974 55-2436 55-3783	a45904	U3231 U3230 U6878 U19055	1901/2020 1899/2020 1900/2020 1910/2020	74.072	42.752	C & S
55-13261	a46561	D2236	1870/2021	100.000	56.500	C & S
55-13267	a46602	U13560	1890/2021	9.000	5.085	C & S
54-364	a47572	A43033	1973/2021	2.000	1.130	C & S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
55-9488	a47578	SHAR - WJWUC	1877/2021	384	173.570	C & S
55-9490	a47579	SHAR - EJIC	1877/2021	48.4	21.880	C & S
55-13310 55-13312 55-13313 55-13314	a49246	A29311 U6867 U11013 U11014	1957/2022 1910/2022 1890/2022 1890/2022	66.242	37.311	C & S
55-11959	a48410	SHAR - ULDC	1908/2022	71.54	32.34	C & S
55-8950	a18982	SHAR - WJWUC, EJIC	1877/1995	394.4	167.36	C & S
55-8873	a19096	SHAR – HCFF, SJCC	1870/1995	420	225.75	C
55-1961	a22239	U3199	1895/1998	393.3	209.07	C & S
55-8999	a50345	A69304	1995/2023	1.87	1.075	C & S
Approved Water Rights (Culinary wells) – Subtotal				4,392.553	2,007.515	
54-887 54-888 54-889 54-890 54-891 54-892 54-893 54-894 54-895 54-896 54-897 54-903 54-905 54-906 54-907 54-908 54-909 54-910 54-912 54-915	a31062	A26748b	1955/2006	161.8556	82.626	S
54-904	a31944	A26748b	1955/2006	1.078	0.588	S
54-622	a33123	A26748b	1955/2007	282.83	159.800	S
55-3117	a28772	U12177	1910/2007	31	27.580	S
54-1278	a37898	A26748b	1955/2012	42.187	22.433	S
54-1209	a43672	A26748b	1955/2018	5.9594	3.367	S
54-1347	a47553	A2136a	1908/2021	80.38	36.330	S

Water Right Number	Change Application Number or Status[1]	Basis[2]	Base Priority/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Well Source[3]
54-301	a47571	A42442	1977/2021	2.178	1.383	S
55-9693	a26962	SHAR - ULDC	1908/2002	402.99	170.830	S
Approved Water Rights (Secondary Only) - Subtotal				1,010.46	504.937	S
Groundwater Water Rights (Culinary wells)				8,351.76	3,611.3	C & S
Total Groundwater Water Rights				10,015.77	4,399.489	

[1] Certificated means the water right is perfected for municipal use. Approved means a change application for municipal use has been approved. Election means the right has been recommended to the State Engineer to be perfected.
[2]SHAR – Share Statement on canal company shares for the following companies:
USLCC-Utah and Salt Lake Canal Company,
WJWUC - Welby Jacob Water Users Company
EJIC-East Jordan Irrigation Company,
SJCC - South Jordan Canal Company
ULDC-Utah Lake Distributing Company
[3]Well Source “C” refers to Culinary Wells and “S” refers to Secondary Wells.

CITY OF SARATOGA SPRINGS MUNICIPAL SURFACE WATER RIGHTS
(DWRI, 2025)

Water Right Number	Change Application Number	Basis[1]	Base/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Source[2]
57-10462	a50755	SHAR – EJIC	1877/2023	43.56	19.69	MPS
57-10703	a43884	SHAR - EJIC	1977/2018	113.74	51.410	MPS
55-2060 55-12783	a43438	D1450 D1450	1965/2018	81.636	47.013	MPS
51-8622 59-5926	a50898	SHAR - USLCC	1870/2023	105.57	47.72	MPS
Marina Pump Station - Subtotal				344.506	165.833	MPS
59-6034	a47641	SHAR - ULDC	1908/2021	766.500	346.460	MPS & ULDC
59-5923	a42686	SHAR - ULDC	1908/2017	605.32	341.840	MPS & ULDC
59-5961	a43584	SHAR - ULDC	1908/2018	98.16	55.430	MPS & ULDC
59-5982	a44302	SHAR - ULDC	1908/2019	102.250	57.743	MPS & ULDC
59-5991	a45243	SHAR - ULDC	1908/2019	73.584	41.575	MPS & ULDC
59-5990	a45242	SHAR - ULDC	1908/2019	2064.440	1166.409	MPS & ULDC
55-11962	a46500	SHAR - ULDC	1908/2021	275.940	124.725	MPS & ULDC
59-6012	a46502	SHAR - ULDC	1908/2020	30.66	13.860	MPS & ULDC
59-6035	a48426	SHAR - ULDC	1908/2022	35.77	16.17	MPS & ULDC
59-6054	a50260	SHAR - ULDC	1908/2023	51.1	23.10	MPS & ULDC
59-6077	a45252	SHAR - ULDC	1908/2024	45.90	20.66	MPS & ULDC
Marina Pump Station and ULDC Canal- Subtotal				4,149.624	2,207.972	MPS & ULDC
59-5994	a45311	SHAR - WJWUC	1853-1908/2019	96.0	43.392	WJWUA
59-5949	a44383	SHAR – WJWUC	2017/2019	107	60.455	WJWUA
59-6022	a47554	SHAR – WJWUC	1853-1908/2021	3.000	1.356	WJWUA
59-6028	a47855	SHAR – WJWUC	1853-1908/2021	45.000	20.340	WJWUA
59-6036	a47857	SHAR – WJWUC	1853-1908/2021	7.000	3.164	WJWUA

Water Right Number	Change Application Number	Basis[1]	Base/ Change Priority	Quantity (acre-feet)	Depletion (acre-feet)	Source[2]
59-6062	a49996	SHAR – WJWUC	1877/2023	50	21.22	WJWUA
59-6038	a49232	SHAR – WJWUC	1877/2022	239	108.03	WJWUA
WJWUA Pond - Subtotal				547	257.957	WJWUA
			TOTAL	5,041.13	2,631.762	

[1] SHAR – Share Statement on canal company shares for the following companies:
USLCC-Utah and Salt Lake Canal Company,
WJWUC - Welby Jacob Water Users Company
EJIC-East Jordan Irrigation Company,
SJCC - South Jordan Canal Company
ULDC-Utah Lake Distributing Company

[2]Source “MPS” refers to the Marina Pump Station, “ULDC” refers to the ULDC Pond, “WJWUA” refers to the Welby Jacob Pond.

ATTACHMENT B – CUWCD AGREEMENT FOR WATER DELIVERY

WATER SUPPLY AGREEMENT BETWEEN CENTRAL UTAH WATER CONSERVANCY DISTRICT AND THE CITY OF SARATOGA SPRINGS FOR SALE OF CWP MUNICIPAL AND INDUSTRIAL WATER

This Water Supply Agreement ("Agreement") is made as of this 25th of November, 2009, by and between the Central Utah Water Conservancy District, a water conservancy district organized under the laws of the State of Utah ("District"), and The City of Saratoga Springs, a municipal corporation ("Purchaser"). The District and the Purchaser are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. The District is organized and exists pursuant to the Utah Water Conservancy Act, Utah Code Annotated §17B-2a-1001, et seq., and those provisions of §17B-1-101, et seq., applicable to all local districts, both sections as amended (collectively, the "Act"), for the purpose, among others, of making water available to contract holders residing within its boundaries and of entering into agreements with water users for the purchase and sale of water and its delivery.

B. The Purchaser is a water user organized under the laws of the State of Utah that utilizes and/or provides water service to its customers within its boundaries, and which desires to purchase an additional supply of municipal and industrial ("M&I") water from the District.

C. The District shall design, construct, operate, maintain, repair and replace the Central Utah Water Conservancy District Water Development Project ("CWP"), and has developed and obtained and will develop and obtain sources of water supply for sale and delivery to contract purchasers through the CWP.

D. The Parties enter into this Agreement to set forth the terms and conditions pursuant to which CWP water may be reserved by, purchased by and delivered to the Purchaser at the point or points designated herein, for sale and distribution by the Purchaser to meet a portion of the needs of its customers.

NOW, THEREFORE, IN CONSIDERATION of the foregoing recitals, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

TERMS

1. **Sale and Purchase of CWP Water**

(a) The District hereby agrees to sell and the Purchaser hereby agrees to purchase annually, or in any event pay for as described herein, Ten Thousand (10,000) acre-feet of M&I water developed from the CWP ("Purchased Water"), consisting of Ten Thousand (10,000) acre-feet of Deliverable Water, as defined in Paragraph 2(b)(1)(B) below, delivered using CWP or District operated infrastructure ("CWP Infrastructure Water") and Zero (0) acre-feet of Deliverable Water delivered to Purchaser by means other than CWP or District operated infrastructure ("CWP Non-Infrastructure Water").

(b) Subject to the terms and conditions of this Agreement, the Purchased Water shall be reserved and made available by the District to the Purchaser in accordance with the Take-down Schedule attached as Exhibit "A" hereto. The Deliverable Water shall then be delivered to the Purchaser at the specified point or points of delivery, and within the maximum daily flow rates ("Contract Capacity") set forth on the Delivery Schedule attached as Exhibit "B" hereto. The Parties hereby understand and acknowledge that in establishing the Contract Capacity, the District must

consider both the capacity of the available CWP water supply and the capacity of the available CWP infrastructure, including the capacity of all available reservoirs, wells, treatment plants, transmission lines, meters and meter stations, and pumps and pump stations within the CWP system (collectively, the "CWP System Capacity").

(c) The District and the Purchaser agree and understand that the sale of Purchased Water under this Agreement is under terms and conditions that are the same for similarly situated customers entering into CWP water supply agreements during the period July 1, 2009 through September 30, 2009 (said grouping of water supply agreements being referred to for purpose of identification as "CWP FY2010 A").

(d) In the event the District shall enter into any CWP supply agreement(s) having a pricing structure or terms of sale more favorable to the purchaser therein than those set forth in Paragraph 2 below, the Parties agree that this Agreement shall be amended so as to apply the same pricing structure or terms of sale herein.

2. **Sales Price of Purchased Water**

(a) General.

(1) CWP water is sold and delivered pursuant to a pricing structure containing the following four components: (i) a One-time Development Charge; (ii) an Annual Reservation Fee, (iii) an Annual Water Fee, and (iv) an Annual Service Fee, all as described in Paragraph 2(b) below. (The One-time Development Charge, the Annual Reservation Fee, the Annual Water Fee and the Annual Service Fee are sometimes referred to herein collectively as the "CWP Fees").

(2) Factors that will influence the amount for each of the four components of the pricing structure may include: (i) whether a purchaser uses or does not use any of the District's

infrastructure; and (ii) the grouping, by year, of water purchase agreements for CWP water. At the sole discretion of the District, the cost of some of the four components of the pricing structure may be zero based on the factors described above.

(3) The CWP Fees set forth herein are imposed for the sole purpose of developing and providing the CWP water supply and providing the infrastructure necessary to deliver the Purchased Water to the Purchaser and other water users and customer agencies that enter into similarly situated and dated CWP water supply agreements. CWP Fees will not include District costs from projects not directly related to the CWP. The District shall treat all CWP water purchasers, similarly situated within water sales agreements grouped according to the effective dates of said agreements as may be determined by the District, in an equal, fair and non-discriminatory manner.

(4) CWP Fees under this Agreement shall be due and payable by the Purchaser, as provided herein, regardless of whether the Purchaser calls for or uses any of the Purchased Water in any given year, subject to annual adjustment as provided in Paragraph 7 herein. Notwithstanding the foregoing, in the unlikely event the CWP infrastructure is not capable of delivering Purchased water to Purchaser in the fiscal year first set forth in the Take Down Schedule, Exhibit "A" hereto, the obligation of the Purchaser to pay the One-time Development Charge and the Reservation Fee shall be suspended, the volume of water scheduled to be removed from reserved status and become Deliverable Water, as defined in Paragraph 2(b)(1)(B), in that fiscal year shall be set back and added onto the next succeeding year, until Purchased water is available for delivery, at which time payment of the One-time Development Charge, as provided herein, shall be due for the fiscal year in which Purchased Water first becomes Deliverable Water and for each fiscal year added on thereto.

(5) Notwithstanding any provision herein to the contrary with regard to payment of

CWP Fees, the Purchaser may request in writing that it be authorized to pre-pay, in whole or in part, any one or all of the CWP Fees due and owing hereunder. The pre-payment request shall be analyzed on a case-by-case basis, and be authorized at the sole discretion of the District, subject to such terms and conditions as the District shall determine at the time. The District's authorization to pre-pay and the terms and conditions of pre-payment shall be set forth in a separate written agreement to be executed between the District and the Purchaser.

(b) CWP Pricing Structure. The pricing structure for the CWP FY2010 A water supply agreements is as follows:

(1) One-time Development Charge.

(A) The District must recover from all purchasers that enter into water supply agreements the costs of the District to develop the CWP, including the acquisition and development of the CWP water supply and the planning, design and construction of the CWP infrastructure ("CWP Development Cost"). The One-time Development Charge is charged on a per acre-foot basis as provided in Paragraph 2(c) below, and covers the majority of the Purchaser's proportionate share of the CWP Development Cost. The One-time Development Charge is fixed by this Agreement and not subject to change for CWP water reserved under this Agreement.

(B) The One-time Development Charge is paid one-time only by the Purchaser for the total volume of Purchased Water, and is due and payable on June 1 prior to the fiscal year Purchased Water is removed from reserved status as provided in Paragraph 2(b)(2)(A) below and made available to the Purchaser for delivery each year ("Deliverable Water") in accordance with the Take-down Schedule, Exhibit A.

(C) The One-time Development Charge for the CWP Infrastructure Water

reserved for Purchaser hereunder is fixed during the term of this Agreement in the amount set forth in the table under Paragraph 2 (c)(1).

(2) Annual Reservation Fee.

(A) The Annual Reservation Fee applies to Purchased Water held in reserve status for the Purchaser pursuant to the provisions of Paragraph 4 ("Reserved Water"), and is imposed inasmuch as the CWP Development Cost must be paid by the District regardless of whether the Purchaser takes delivery of Purchased Water or not. The Annual Reservation Fee is charged on a per acre-foot basis as provided in Paragraph 2(b) below and covers an additional portion of the Purchaser's proportionate share of the CWP Development Cost during the period the Purchased Water remains in reserved status. As Purchased Water is removed from its reserved status and becomes Deliverable Water pursuant to the Take-down Schedule, Exhibit A, the District will no longer impose an Annual Reservation Fee on said water. The Purchaser will then pay the One-time Development Charge on the Deliverable Water as provided in Paragraph 2(b)(1) and commence payment of the Annual Water Fee as provided in Paragraph 2(b)(3) and the Annual Service Fee as provided in Paragraph 2(b)(4). The District will continue to impose the Annual Reservation Fee on any and all Purchased Water that remains in Reserved Water status for the Purchaser.

(B) The Annual Reservation Fee is charged on a per acre-foot basis for each acre-foot of Purchased Water held in reserved status for the Purchaser pursuant to Paragraph 4 as of December 31st of the preceding calendar year, and is due and payable annually on or before February 15th of the current year.

(C) The Annual Reservation Fee for the CWP Infrastructure Water reserved for Purchaser hereunder is fixed during the term of this Agreement in the amount set forth in the table

under Paragraph 2(c)(1).

(3) Annual Water Fee.

(A) The Annual Water Fee is charged on a per acre-foot basis as provided in Paragraph 2(c) below and is imposed to cover costs associated with the operation, maintenance, repair and replacement ("O&M") of the CWP infrastructure, to fund O&M reserves for the CWP, to pay the remaining portion of the Purchaser's proportionate share of the CWP Development Cost not covered by the One-time Development Charge and the Annual Reservation Fee (proportionate share for this purpose being defined as Purchaser's total volume of CWP Infrastructure Water under this Agreement divided by the total capacity of the CWP attributable to CWP Infrastructure Water, estimated by the Parties as of the date hereof to be 53,312 acre-feet, averaged over a five-year rolling period), and to cover other related costs of the District pertaining solely to the CWP infrastructure.

(B) In payment of the Annual Water Fee, the Purchaser will only pay that amount attributed to a proportionate share of costs incurred for O&M, to fund the O&M Reserve and other related costs pertaining to CWP infrastructure, apportioned to the Purchaser based upon the annual cumulative volume of Deliverable Water, in acre-feet.

(C) The initial amount of the Annual Water Fee for the CWP Infrastructure Water reserved for Purchaser hereunder is set forth in the table under Paragraph 2 (c)(1). Payment shall be made in conformance with the following:

(i) The District will invoice the Purchaser for the Annual Water Fee commencing the end of the month following the payment of the One-time Development Charge.

(ii) Subject to the provisions of Paragraph 2(b)(3)(D) below, the Annual Water Fee is payable by the Purchaser on a monthly basis within 30 days of the date of the

District's invoice for actual water deliveries made in months prior to the date of the invoice.

(iii) Subject to the provisions of Paragraph 7 below, the Annual Water Fee is to be paid by the Purchaser as provided herein regardless of whether the Purchaser calls for or uses any of the Deliverable Water in any given year. In the event the amount paid by the Purchaser under invoices for actual water delivered in conformance with Paragraph 2(b)(3)(C)(ii) is less than the total Annual Water Fee due hereunder, the remaining balance shall be invoiced by the District in the June billing each fiscal year.

(D) Notwithstanding the provisions of Paragraph 2(b)(3)(C) above, the Purchaser, at its option, may give written notice to the District that it desires to capitalize the Annual Water Fee. The District is willing to accept an up-front capitalized payment ("Capitalized Annual Water Fee"), for a period of not to exceed five years ("Capitalization Period"), under terms and conditions established by the District in its sole discretion, subject to the following:

(i) Upon receipt of notice from the Purchaser, the District will calculate the total estimated amount of the Capitalized Annual Water Fee to be due and payable over the Capitalization Period commencing the date Deliverable Water becomes available to the Purchaser. The District will thereupon notify the Purchaser, in writing, of the amount of the Capitalized Annual Water Fee to be charged, which shall be due and payable by the Purchaser within thirty (30) days from the date it receives said notice.

(ii) Within sixty (60) days of the end of the Capitalization Period, the District shall reconcile with the Purchaser the difference between the Capitalized Annual Water Fee paid by the Purchaser and the actual amount that would have been paid had the Purchaser paid the Annual Water Fee on an annual basis. If the Capitalized Annual Water Fee paid by the Purchaser is

higher than the actual annual payments would have been pursuant to Paragraph 2(b)(3)(C), the District shall credit the difference to the Purchaser against future Annual Water Fees payable by the Purchaser as determined by the District . If the Capitalized Annual Water Fee paid by the Purchaser is lower than the actual annual payments would have been pursuant to Paragraph 2(b)(3)(C), the Purchaser shall pay the difference to the District within ninety (90) days from the end of the Capitalization Period.

(4) Annual Service Fee.

(A) The Annual Service Fee is charged on a per acre-foot basis as provided in Paragraph 2(c) below and is imposed to cover a portion of the District's CWP administrative costs and expenses.

(B) The Annual Service Fee is due and payable annually on or before February 15th of the current year for the annual cumulative volume, in acre-feet, of Deliverable Water pursuant to this Agreement as of December 31st of the preceding year. The Annual Service Fee will be due and payable regardless of whether the Purchaser calls for or uses any of the Deliverable Water in any given year.

(C) The initial amount of the Annual Service Fee for the CWP Infrastructure Water reserved for Purchaser hereunder is fixed during the term of this Agreement in the amount set forth in the table under Paragraph 2 (c)(1).

(c) Pricing Structure Applicable to the Purchaser Hereunder.

(1) The pricing structure for the CWP 2010A water supply agreements is as follows:

(A) For CWP Infrastructure Water Delivered to the Point(s) of Delivery Identified in Exhibit B:

Price Component	Price per acre-foot
(i) One-time Development Charge	$6,200

(ii)	Annual Reservation Fee	$ 0
(iii)	Annual Water Fee	$ 314**
(iv)	Annual Service Fee	$ 0

** Subject to change. The amount to be charged under the Annual Water Fee is anticipated to fluctuate based upon the District's actual costs, and as such, the amount to be charged for the Annual Water Fee will be set annually by the District.

(B) For CWP Non-Infrastructure Water Delivered to the Point(s) of Delivery Identified in Exhibit B:

Price Component		Price per acre-foot
(i)	One-time Development Charge	$5,000
(ii)	Annual Reservation Fee	$ 0
(iii)	Annual Water Fee	$ 0
(iv)	Annual Service Fee	$ 20**

** Subject to change. The amount to be charged under the Annual Service Fee is anticipated to fluctuate based upon the District's actual costs, and as such, the amount to be charged for the Annual Service Fee will be set annually by the District.

(2) Interest on Delinquent Accounts. Any CWP Fee that remains unpaid after it shall have become due and payable as provided herein shall be subject to simple interest at the rate of one and one-half percent (1.5%) of the delinquent amount per month. Interest will begin to accrue from the date of delinquency and will continue to accrue until such time as the delinquent CWP Fees and all accrued interest have been paid in full; provided, however, that no interest shall be charged to or paid by the Purchaser unless such delinquency continues for more than thirty (30) days or more beyond the date of delinquency.

3. **Quality of Water Delivered**

CWP culinary water shall be delivered to the Purchaser in conformance with standards for public drinking water set by applicable law and regulation, including the Utah Division of Drinking

Water and/or the Utah Drinking Water Board of the Department of Environmental Quality; provided, however, that the District shall not be liable, or otherwise in breach of this Agreement, for failure to meet those standards unless the failure is due to the District's willful misconduct or gross negligence. The District and Purchaser agree that the CWP water sources will be Provo River water, high quality deep groundwater from a well field in or near Vineyard, Utah, or other sources of comparable quality. Deliveries from any other sources shall be of comparable quality.

4. **Reservation of Water**

(a) The District shall hold Purchased Water in reserve for the Purchaser pursuant to the Take-down Schedule, Exhibit A. Purchased Water must be removed from Reserved Water status based on said schedule. As Reserved Water is removed from reserved status, payments will be required for each acre-foot of Deliverable Water as set forth in Paragraph 2.

(b) The Purchaser may conclude that it has reserved more Purchased Water than it will eventually require. The District may consider an application from the Purchaser to transfer or otherwise reduce all or a portion of the amount of CWP water contracted for hereunder; however, the District will not approve the application unless and until another water user in North Utah County or Salt Lake County ("Replacement Purchaser") applies for a new contract, in an equal or greater quantity, to simultaneously replace the reduction hereunder. In such event, the District may approve such a replacement transaction, on the basis of the same terms or on differing terms, in the best interest of the District at its sole discretion. The District agrees, however, that it will not unreasonably deny Purchaser's application for or alter the terms of the replacement transaction under a new contract. The limitations and conditions that shall apply, however, to such a replacement transaction include the following:

(1) A reduction in contract volume to be taken down by Purchaser and/or the timing thereof, as set forth in Exhibit A, hereto must include a corresponding, proportional reduction in Contract Capacity under Exhibit B hereto.

(2) The reduction of contract volume and/or the timing thereof under Exhibit A hereto is limited to the corresponding amount and/or timing of the new or increased contract volume of the Replacement Purchaser.

(3) The reduction of Contract Capacity under Exhibit B hereto must be at least as great as the Contract Capacity increase of the new or increased contract of the Replacement Purchaser, except for variations in maximum daily delivery as between the Purchaser and the Replacement Purchaser.

(c) At the Purchaser's request, and provided that the District has developed the required CWP System Capacity:

(1) Purchased Water may become deliverable to the Purchaser on a year-to-year basis according to an accelerated schedule from that shown in Exhibit A, subject to terms and conditions mutually agreed to in writing by the Parties, or

(2) Purchased Water may become deliverable on a permanent basis according to an accelerated schedule from that shown in Exhibit A pursuant to the terms and conditions set forth in this Agreement;

(d) In the event of a reduction in the take-down as a result of a reduction or transfer of Purchased Water by the Purchaser as provided in subparagraph 4 (b) above, or an acceleration in the delivery of the Purchased Water as provided in subparagraph 4 (c) above, the applicable CWP Fees due and payable by the Purchaser to the District as provided in Paragraph 2 shall be correspondingly

accelerated or reduced as the case may be, as determined in the sole discretion of the District in conformance with the provisions of Paragraph 2(b).

5. **Point of Delivery**

(a) The District will deliver the Purchased Water to the Purchaser in conformance with the following:

(1) For CWP Infrastructure Water: CWP Infrastructure Water will be measured and delivered to the Purchaser only at the point or points of delivery identified in Exhibit B. The infrastructure to be constructed by the District for the purpose of delivering CWP Infrastructure Water from its main transmission lines at said point(s) of delivery include a vault, valve(s), meter(s), piping and related facilities and equipment ("Delivery Infrastructure"), as determined to be necessary by the District to deliver and measure the CWP Infrastructure Water at said point(s). The Delivery Infrastructure will be constructed and installed at the District's sole expense in connection with the development of the CWP, and the District shall own, operate, maintain, repair and replace the same for the term of this Agreement.

(2) For CWP Non-Infrastructure Water: CWP Non-infrastructure Water will be measured and delivered by the Purchaser at its infrastructure. The District will administer water right change applications as necessary to designate points of diversion for delivery of CWP Non-infrastructure Water to the Purchaser at the Purchaser's sources. The Purchaser will meter and tabulate totals of CWP water delivered on a monthly basis from Purchasers sources and report that to the District for each contract year.

(b) Once the District delivers CWP Infrastructure Water to the point(s) of delivery, or CWP Non-infrastructure water is delivered at the Purchaser's sources, it shall be the responsibility of the

Purchaser to provide its own facilities as needed to take this water from the Delivery Infrastructure or Purchasers sources into the Purchaser's own delivery and/or distribution system for its use. No new points of delivery will be allowed without the prior written approval of the District. All Purchased Water delivered by the District under this Agreement will be measured through measuring devices installed in the Delivery Infrastructure or the Purchasers infrastructure at its sources.

6. System Capacity

(a) It is understood by the Purchaser that the delivery of Deliverable Water by the District to the Purchaser is limited to the Contract Capacity set forth in Exhibit B.

(b) If CWP System Capacity is available to deliver water beyond the Contract Capacity, and the Purchaser so requests, the Purchaser may, with the prior written approval of the District, receive delivery of Deliverable Water at a flow rate higher than the Contract Capacity provided in Exhibit B, subject to the following:

(1) The maximum flow rate at which the Deliverable Water shall be delivered and resulting adjustments in the applicable CWP Fees set forth in Paragraph 2 (c) herein for said year or other costs to be applied, if any, shall be negotiated and agreed upon by the Parties prior to the delivery of Deliverable Water in the increased amount.

(2) A request by the Purchaser to exceed the Contract Capacity shall be made on an annual basis no later than April 30th.

(3) Notwithstanding the foregoing, if the Contract Capacity is exceeded by the Purchaser without receiving the prior written approval of the District, then a monthly surcharge will be assessed to the Purchaser in an amount per acre-foot set annually by the District for each acre-foot of water exceeding Contract Capacity or Contract Capacity modified in accordance with Paragraph

6(b)(1), calculated on a daily basis.

7. **Quantity of Water Delivered**

(a) The District is not a guarantor of CWP water supply or of CWP delivery capacity. It is understood by the Parties that the District's ability to deliver CWP water to the Purchaser depends, in part, on the available CWP System Capacity. Therefore, in its reasonable discretion and pursuant to its interpretation and the application of its policies, rules, and procedures as they may be amended periodically:

(1) in times of CWP water shortage due to lack of runoff or other conditions which may be beyond the control of the District, the District may make a ratable allocation of CWP water among the various CWP purchasers, which allocation shall be based on the then-current amount of Deliverable Water in proportion to the District's CWP water purchase commitments under all of its CWP water supply agreements, and the amount of Deliverable Water for that year shall be reduced pro-rata; and

(2) in the event of CWP System Capacity shortages due to potential failures of equipment and infrastructure, and limitations in water source and infrastructure capacities, and in peak demand periods and other times of limited delivery capacity, the District may allocate the available CWP System Capacity among the District's CWP purchasers, which allocation shall be based on the then-current amount of CWP System Capacity available in proportion to the total CWP delivery capacity set forth in Exhibit B.

(b) No liability shall accrue against the District or any of its trustees, officers, agents, or employees, for any damages, direct or indirect, sustained by the Purchaser and/or its customers in the event of shortages of CWP System Capacity, or the District's inability to deliver the Purchased Water to the Purchaser not resulting from the District's own negligence, or due to shortages caused by drought,

hostile diversion, prior or superior claims, or other similar causes not within the control of the District.

(c) In the event the Purchaser does not take delivery during any contract year of all of the Deliverable Water for which the One-time Development Fee has been paid in conformance with the provisions of Paragraph 2 (b) (1), the Purchaser may take delivery in the immediately following contract year of so much of the Deliverable Water not taken as does not exceed five percent (5%) of the total Deliverable Water for that year ("Deferred Water"), subject to the following:

(1) Calculation of the amount of Deferred Water shall not include any water besides Deliverable Water as of the end of the previous contract year.

(2) Deferred Water cannot be accumulated on a multi-year basis.

(3) Deferral is subject to the availability of CWP System Capacity, as reasonably determined by the District;

(4) Delivery of Deferred Water shall have a lower priority than delivery of Deliverable Water for that year;

(5) The Purchaser may take delivery of Deferred Water only after it has taken delivery of all of the Deliverable Water for the contract year in which the Deferred Water is to be taken.

8. **Use and Delivery of Purchased Water by the Purchaser**

(a) The Purchaser shall use the Purchased Water made available to it under this Agreement only for M&I purposes. No other use of Purchased Water shall be made without the prior written consent of the District.

(b) The portfolio of water rights the District has acquired for the CWP requires that a percentage of water represented by the CWP water rights be returned to the hydrologic system in Utah and Salt Lake counties in order to avoid interference with other water right appropriators and with

other District water supply operations. As such, the Purchaser shall not recycle nor otherwise utilize the Purchased Water in a manner that depletes the Purchased Water in amounts greater than fifty percent (50%) without the prior written consent of the District.

(c) Subject to the prior written consent of the District, all or some portion of the CWP Non-infrastructure Water may be utilized by the Purchaser by change application or exchange application under Utah law filed by the District. The Purchaser shall reimburse the District for any legal, engineering or other professional and consulting fees and all related costs and expenses it reasonably incurs in prosecuting any such change or exchange application to decision before the State Engineer, and through any subsequent judicial or administrative review proceedings or appeal.

(d) The Purchaser shall build its own infrastructure as required by it to take delivery of the Purchased Water from the District and utilize and distribute the same to its customers. All cost for O&M of the Purchaser's facilities shall be paid by the Purchaser and not the District.

(e) The Purchaser shall not use, deliver for use, sell, lease or otherwise dispose of any Purchased Water outside Purchaser's political boundaries or its recognized service area, without the prior written consent of the District. No user of the Purchased Water will use the Purchased Water on any basis other than the same basis as the general public.

(f) The facilities to be used to provide and deliver the Purchased Water may be financed, in whole or in part, with the proceeds of tax-exempt bonds ("Tax-exempt Bonds") of the District.

(1) The Purchaser acknowledges that in the event the District issues or has issued Tax-exempt Bonds related to the Purchased Water or its delivery, the use of Purchased Water by the Purchaser may be subject to various limitations imposed under the Internal Revenue Code of 1986 (the "Code"), and United States Treasury Regulations dealing with the tax-exempt bond provisions of the

Code (the "Regulations"), that must be complied with in order to protect the tax-exempt status of interest on the Tax-exempt Bonds; and as such, the Purchaser agrees as follows:

(A) The Purchaser shall not, without the prior written approval of the District, supply or enter into any arrangement to supply any of the Purchased Water to any person or entity, other than a state or local government, that conveys any preferential benefits, or that supplies water other than on the basis of rates that are generally applicable and uniformly applied or supplies the water to any person or entity who will resell the water in such a manner as to establish a "Private Business Use" under applicable provisions of Section 141(a) of the Code and the Regulations, thereby jeopardizing the tax-exempt status of the Tax-Exempt Bonds.

(B) The Purchaser shall not establish any fund or otherwise set aside any money or investments that it reasonably expects to use to make payments due and owing to the District under this Agreement without the prior written approval of the District (which approval may, among other requirements, limit the maximum yield for the investment or any such amounts pursuant to certain arbitrage rules under applicable provisions of Section 148(f) of the Code and the Regulations).

(2) The Purchaser shall, on an annual basis, provide to the District written verification of compliance with the requirements of this Subparagraph 8 (f).

9. Water Conservation

The Purchaser covenants that it shall prepare and file with the District a water conservation plan promulgated by the Purchaser which addresses, among other things, pricing, technical assistance and public education as components of the water conservation plan. Such plan shall be submitted to the District within one year of first delivery of Purchased Water to the Purchaser and shall be updated biennially.

10. **Collection of Fees and Charges**

In order to assure full and continuous performance of the Purchaser's obligations as set forth herein, the Purchaser hereby covenants and agrees that it will levy and collect all necessary fees, charges and assessments and reasonable contingencies in amounts which, together with other legally available funds, are sufficient to pay in full to the District all of its CWP Fee obligations under this Agreement. The Purchaser shall timely pay to the District the full amount of CWP Fees as they become due regardless of whether the Purchaser collects the full amount of its fees, charges, and assessments from its customers.

11. **Refusal of Water in the Event of Default and Termination**

(a) The District may withhold the delivery of all or any portion of the Purchased Water to the Purchaser if the Purchaser is in arrears for more than sixty (60) days in the payment to the District of any CWP Fee to be paid pursuant to Paragraph 2(b). Deliveries shall resume upon payment in full of any such arrearage including any and all accrued interest imposed by the District pursuant to this Agreement. Funds received to cure any arrearage shall be first applied by the District to payment of accrued interest and then towards the reduction of the principal on any such outstanding CWP Fee.

(b) If the Purchaser is in default under any provision of this Agreement and the default remains uncured for more than sixty (60) days after the date of written notice of default, the Parties shall reasonably mediate the dispute. However, if the dispute remains unresolved notwithstanding mediation, this Agreement may be terminated at the sole discretion of the District, subject to the following:

(1) The Purchaser shall have up to one (1) year after the date of written notice of default to seek judicial resolution of the dispute following mediation. This Agreement may not be terminated

by the District during the pendency of any judicial action, including any subsequent appeal.

(2) Should the Purchaser fail to bring legal action within said one year period and the dispute otherwise remains unresolved, the District may thereupon proceed to terminate the Agreement, effective upon written notice to the Purchaser.

(3) Upon termination of the Agreement, the Purchased Water will revert to the District for reallocation to other purchasers as determined by the District.

(4) Termination will not relieve the Purchaser of its obligations to pay any past due CWP Fees, together with any and all accrued interest; however, the Purchaser will be relieved of any future payment obligations after the termination of this Agreement.

12. Term of Agreement

The term of this Agreement shall be perpetual so long as the required payments are paid in accordance with the terms of this Agreement. However, nothing herein shall prohibit the Parties from negotiating or terminating this Agreement if the Parties mutually agree to do so. There are no third party beneficiaries of this Agreement, and no one other than the Parties hereto may enforce its terms and conditions.

13. Assignment Limited

Neither Party may assign this Agreement or any of its rights under it without the prior written consent of the other Party; provided, however, that the District may pledge and assign any monies received pursuant to this Agreement to the payment of the District's bonds.

14. Exhibits

All exhibits attached to this Agreement are incorporated into and made a part of this Agreement as though fully set forth herein.

15. **Binding Effect**

This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

16. **Severability**

If any term or provision of this Agreement shall, to any extent, be determined by a court of competent jurisdiction to be void, voidable, or unenforceable, such void, voidable or unenforceable term or provision shall not affect the enforceability of any other term or provision of this Agreement.

17. **Construction**

This Agreement is the result of negotiations between the Parties, neither of whom has acted under any duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms and provisions hereof shall be construed in accordance with their usual and customary meanings. Each Party hereby waives the application of any rule of law which otherwise would be applicable in connection with the construction of this Agreement that ambiguous or conflicting terms or provisions should be construed against the Party who (or who's attorney) prepared the executed Agreement or any earlier draft of the same. As used herein, all words in any gender shall be deemed to include the masculine, feminine, or neuter gender, all singular words shall include the plural, and all plural words shall include the singular, as the context may require.

18. *Further Action*

The Parties hereby agree to execute and deliver such additional documents and to take further action as may become necessary or desirable to fully carry out the provisions and intent of this Agreement.

19. **Business Relationship**

This Agreement neither acknowledges the existence of nor is it intended nor shall it be construed to establish, create or organize any principal-agent relationship, partnership, joint venture, or any other legal entity or form of business relationship between the Parties, and is limited solely to the purposes and interests expressed herein.

20. **Entire Agreement**

This Agreement, including exhibits, constitutes the entire agreement of the Parties and supersedes all prior undertakings, representations, or agreements of the Parties regarding the subject matter hereof.

21. **Warranty of Authority**

Each individual executing this Agreement does hereby represent and warrant that he or she has been duly authorized to sign this Agreement in the capacity and for the entities identified herein. The District and the Purchaser each represent and warrant that it has full legal right and authority to enter into this Agreement.

22. **Notices**

Notices given by or to the Parties shall be in writing and may be served personally or served by depositing them in the United States mail, postage prepaid, certified or registered mail with return receipt requested, addressed to the Parties at the addresses set forth below, or at such other addresses as the Parties may designate in writing:

DISTRICT:

Central Utah Water Conservancy District
Attention: General Manager
355 West University Parkway
Orem, Utah 84058

PURCHASER:

THE CITY OF SARATOGA SPRINGS
Attention: Mayor
3700 North Commerce Drive
Suite 200
Saratoga Springs, UT 84045

23. **Rules and Regulations Governing Service**

Subject to the terms and conditions of this Agreement, the District reserves the right to adopt rules and regulations governing the delivery of water under this Agreement, and to exercise its full statutory powers, including specifically the right to amend its rates, fees, charges, and its rules and regulations in the future, and the right to exercise its statutory powers, as they now exist or are amended or enacted in the future. It is expressly agreed that the District, by signing this Agreement, has not surrendered any of its rights in this regard.

24. Subject to Act

Subject to the terms and conditions of this Agreement, any commitment of CWP water, and payment to the District for CWP water so committed pursuant to this Agreement, shall be subject to the Act and the rules and regulations of the District's Board of Trustees now existing or hereafter legally promulgated, as the same may be supplemented or amended.

IN WITNESS WHEREOFF, the Parties hereto have executed this Agreement effective as of the day and year first written above.

CENTRAL UTAH WATER CONSERVANCY DISTRICT	THE CITY OF SARATOGA SPRINGS
By: _____	By: _____
Its: President	Its: Mayor
Attest: _____	Attest: _____
Secretary	Its:

City of SARATOGA SPRINGS CORPORATE SEAL STATE OF UTAH

EXHIBIT A

PURCHASED WATER TAKE DOWN SCHEDULE (BY VOLUME) FOR CWP INFRASTRUCTURE WATER UNDER THIS AGREEMENT

FISCAL YEAR (eg. FY 2009 = July 1, 2008 through June 30, 2009)	ANNUAL VOLUME OF CWP INFRASTRUCTURE WATER REMOVED FROM RESERVED STATUS - DELIVERABLE WATER (AF)	CUMULATIVE ANNUAL VOLUME OF CWP INFRASTRUCTURE WATER DELIVERED (AF)
2009		
2010		
2011		
2012		
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020	10,000	
2021 and thereafter		10,000
TOTAL VOLUME OF CWP INFRASTRUCTURE WATER RESERVED UNDER THIS AGREEMENT (AF)	10,000	

PURCHASED WATER TAKE DOWN SCHEDULE (BY VOLUME) FOR CWP NON-INFRASTRUCTURE WATER UNDER THIS AGREEMENT

CALENDER YEAR	ANNUAL VOLUME OF CWP NON-INFRASTRUCTURE WATER REMOVED FROM RESERVED STATUS (AF)	CUMULATIVE ANNUAL VOLUME OF CWP NON-INFRASTRUCTURE WATER DELIVERED (AF)
2009		
2010		
2011		
2012		
2013		

2014		
2015		
2016		
2017		
2018		
2019		
2020		
2021 and thereafter		
TOTAL VOLUME OF CWP NON-INFRASTRUCTURE WATER RESERVED UNDER THIS AGREEMENT(AF)	None	

EXHIBIT B

DELIVERY LOCATION AND RATE OF DELIVERY CAPACITY UNDER THIS AGREEMENT

I. FOR CWP INFRASTRUCTURE WATER

Delivery Location See Note (1)	Ultimate Contract Capacity (Maximum Daily Flow Rate in GPM But Limited by Annual Deliverable Volume) See Note (2)
1. Turnout at approximately 2300 West Pioneer Crossing, Lehi	
2. Turnout at approximately Pony Express Parkway and 800 West, Saratoga Springs	
3. Turnout at approximatery 1500 North and Utah Lake Distribution Canal, Lehi	
4. Turnout at approximately Pioneer Crossing and Redwood Road, Saratoga Springs	
See attached Figure 1	For Combined Total of up to 13,140 GPM

II. FOR CWP NON-INFRASTRUCTURE WATER

Delivery Location See Note (1)	Contract Capacity (Maximum Daily Flow Rate in GPM) See Note (3)
1. None	

Notes:
(1) The delivery location referenced herein is preliminary. A final delivery location or locations will be determined by the Parties and designated herein after final design and prior

to the commencement of construction of the CWP infrastructure or approval of water right change application.

(2) The total Contract Capacity corresponds to the Cumulative Annual Volume Delivered shown in Exhibit A in each year multiplied by 18% and divided by 31 days and converted to a gallons per minute flow rate, i.e. Delivered Water amount in AF multiplied by 0.18 divided by 31 days multiplied by 325,829 gallons per AF divided by 24 hours per day divided by 60 minutes per hour.

(3) The total Contract Capacity is anticipated to be identified in the approved water right change application.

FIGURE 1—DELIVERY POINT LOCATIONS

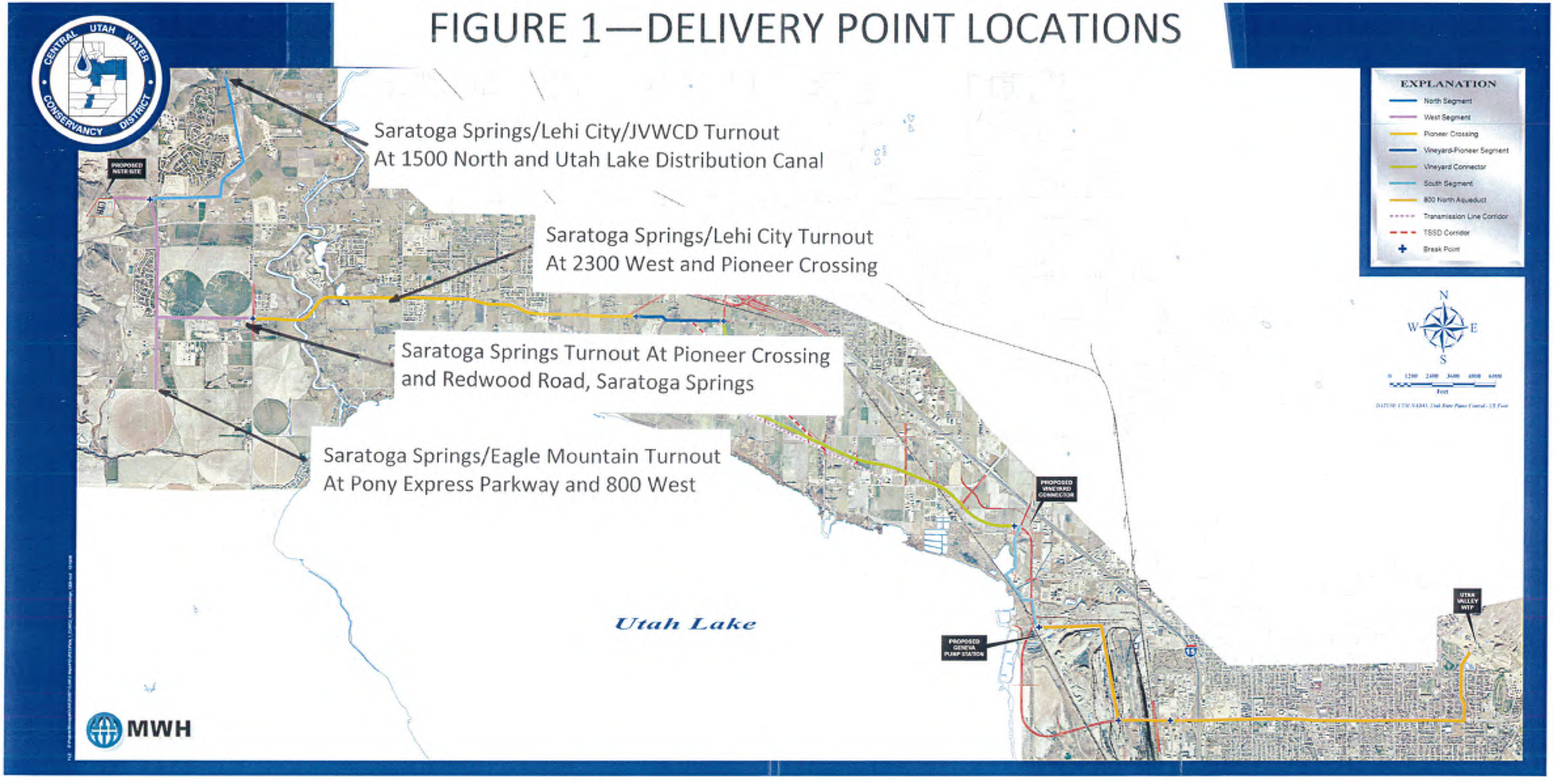


EXHIBIT A

February, 2017

Take-Down Schedule - Purchased Water Take-Down Schedule (By Volume) for Purchased Water Under this Agreement

COLUMN	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	Annual Volume (Block) of Purchased Water For Which One-Time Development Fee is Due (AF)	One Time Development Charge for Blocks of Purchased Water (per AF)	Annual Volume of Purchased Water Subject to Capital Recovery Component of Annual Fee (AF)	*Actual* and Estimated Capital Recovery Component of Annual Fee for Volume of Water in Column C (per AF)	Annual Volume of Purchased Water which becomes Deliverable Water (AF)	Cumulative Annual Volume of Deliverable Water (AF)	*Actual* and Estimated OM&R Component of Annual Fee for Deliverable Water in Column (F) (per AF)	*Actual* and Estimated Future Annual Fee (As set annually by the District) (Fee includes the OM&R and Capital Recovery Components in Columns D & G
2008-09	0	*$6,200*	0		0	0		*$300*
2009-10	0	*$6,200*	0		0	0		*$314*
2010-11	0	*$6,200*	0		0	0		*$328*
2011-12	0	*$6,200*	0		0	0		*$343*
2012-13	0	*$6,200*	0		0	0		*$358*
2013-14	0	*$6,200*	0		0	0		*$374*
2014-15	0	*$6,200*	0	*$222*	0	0	*$169*	*$391*
2015-16	0	*$6,200*	0	*$203*	0	0	*$205*	*$408*
2016-17	0	*$6,200*	0	*$252*	0	0	*$175*	*$427*
2017-18	50	$6,200	50	$280	50	50	$166	$446
2018-19	50	$6,200	100	$310	50	100	$156	$466
2019-20	9900	$6,200	10,000	$346	380	480	$141	$487
2020-21	0		10,000	$364	380	860	$145	$509
2021-22	0		10,000	$383	380	1,240	$149	$532
2022-23	0		10,000	$400	380	1,620	$156	$556
2023-24	0		10,000	$421	380	2,000	$160	$581
2024-25	0		10,000	$442	380	2,380	$165	$607
2025-26	0		10,000	$464	380	2,760	$170	$634
2026-27	0		10,000	$484	380	3,140	$179	$663
2027-28	0		10,000	$508	380	3,520	$185	$693
2028-29	0		10,000	$530	380	3,900	$194	$724
2029-30	0		10,000	$556	380	4,280	$200	$756
2030-31	0		10,000	$583	380	4,660	$207	$790
2031-32	0		10,000	$609	380	5,040	$217	$826
2032-33	0		10,000	$639	380	5,420	$224	$863
2033-34	0		10,000	$668	380	5,800	$234	$902
2034-35	0		10,000	$702	380	6,180	$241	$943
2035-36	0		10,000	$733	380	6,560	$252	$985
2036-37	0		10,000	$7	380	6,940	$259	$266
2037-38	0		10,000	$8	380	7,320	$271	$279
2038-39	0		10,000	$11	380	7,700	$280	$291
2039-40	0		10,000	$12	380	8,080	$293	$305
2040-41	0		10,000	$16	380	8,460	$302	$318
2041-42	0		10,000	$16	380	8,840	$316	$332
2042-43	0		10,000	$20	380	9,220	$327	$347
2043-44	0		10,000	$21	380	9,600	$342	$363
2044-45	0		10,000	$25	400	10,000	$355	$380

- Actual previous or present fee amounts are in Italics and Blue as set by District Board of Trustees

Continues at 10,000 AF

- Fee amounts are estimated amounts and set annually by District Board of Trustees

CWP-Saratoga Springs Exhibit A Summary and Calculation

Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	CWP One Time Development Charge Removed from Reserved Status (AF)	Actual and Estimated Capital Recovery Portion of Annual Fee (per AF)	Actual and Estimated OM&R Portion of Annual Fee (per AF)	Actual and Estimated Future Annual Fee (As set annually by the District) (Fee Includes the OM&R and Capital Recovery Components (per AF)	Capital Prepayment No Discount (per AF)	Capital Prepayment with 2.5% Discount (per AF)	Cost per Discounted Typical Single Family = .45 AF = WFSU .40
2008-09	$5,850				$15,949	$12,827	$5,772
2009-10	$6,200				$16,299	$13,168	$5,926
2010-11	$7,000				$17,099	$13,949	$6,277
2011-12	$7,800				$17,899	$14,729	$6,628
2012-13	$8,400				$18,499	$15,314	$6,891
2013-14	$8,500				$18,599	$15,412	$6,935
2014-15	$9,100	$222	$169	$391	$19,199	$15,997	$7,199
2015-16	$9,370	$203	$205	$408	$19,247	$16,222	$7,300
2016-17	$9,600	$252	$175	$427	$19,274	$16,426	$7,391
2017-18	$9,840	$280	$166	$446	$19,262	$16,590	$7,466
2018-19	$10,090	$310	$156	$466	$19,232	$16,736	$7,531
2019-20	$10,340	$346	$141	$487	$19,172	$16,850	$7,582
2020-21	$10,600	$364	$145	$509	$19,086	$16,935	$7,621
2021-22	$10,870	$383	$149	$532	$18,992	$17,008	$7,654
2022-23	$11,140	$400	$156	$556	$18,879	$17,058	$7,676
2023-24	$11,420	$421	$160	$581	$18,759	$17,095	$7,693
2024-25	$11,720	$442	$165	$607	$18,638	$17,126	$7,707

WATER SUPPLY AGREEMENT BETWEEN CENTRAL UTAH WATER CONSERVANCY DISTRICT AND THE CITY OF SARATOGA SPRINGS FOR SALE OF CWP MUNICIPAL AND INDUSTRIAL WATER

THIS WATER SUPPLY AGREEMENT ("Agreement") is made effective as of this 21 of August, 2018 (the "Effective Date"), by and between the Central Utah Water Conservancy District, a water conservancy district organized under the laws of the State of Utah ("District"), and the City of Saratoga Springs, a municipal corporation ("Purchaser"). The District and the Purchaser are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. The District is organized and exists pursuant to the Utah Water Conservancy Act, Utah Code Annotated §17B-2a-1001, et seq., and those provisions of §17B-1-101, et seq., applicable to all local districts, both sections as amended (collectively, the "Act"), for the purpose, among others, of making water available to contract holders residing within its boundaries and of entering into agreements with water users for the purchase and sale of water and its delivery.

B. The Purchaser is a water user organized under the laws of the State of Utah that utilizes and/or provides water service to its customers within its boundaries, and which desires to purchase an additional supply of municipal and industrial ("M&I") water from the District.

C. The District shall design, construct, operate, maintain, repair and replace the Central Utah Water Conservancy District Water Development Project ("CWP"), and has developed and obtained and will develop and obtain sources of water supply for sale and delivery to contract purchasers through the CWP.

D. The Parties enter into this Agreement to set forth the terms and conditions pursuant to which CWP water may be reserved by, purchased by and delivered to the Purchaser at the point or points designated herein, for sale and distribution by the Purchaser to meet a portion of the needs of its customers.

NOW, THEREFORE, in consideration of the foregoing recitals, and other good and valuable

consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

TERMS

1. **Sale and Purchase of Purchased Water**

(a) Purchase Water; Block Subscriptions; Take-down and Payment. The District hereby agrees to sell and the Purchaser hereby agrees to purchase in a given District fiscal year (July 1 – June 30) as provided below, or in any event pay for, in a given fiscal year (defined for purposes of the District as July 1 – June 30) an annual original supply and optional additional supply of District M&I water developed from the CWP (collectively, the "Purchased Water"). Purchased Water hereunder shall be made available and subscribed for in Blocks of Fifty (50) acre-feet (each, a "Block"), which shall be held in reserve for the benefit of Purchaser, and be taken-down for delivery using CWP or District operated infrastructure, in conformance with the following:

(1) Block Subscriptions.

(A) Original Contract Supply. The original contract supply of Purchased Water, which Purchaser subscribes for and agrees to purchase hereunder, shall consist of two (2) 50 acre-foot Blocks (the "Original Contract Supply").

(B) Optional Additional Contract Supply. Subject to the availability of additional CWP water, as determined in the sole discretion of the District, the Purchaser has the option of increasing the contract supply of Purchased Water hereunder up to an additional amount of Two Hundred (200) acre-feet (the "Optional Contract Supply"), for a total contract supply of Purchased Water hereunder in the amount of Three Hundred (300) acre-feet, including both the Original Contract Supply and the Optional Contract Supply.

(i) The Optional Contract Supply of Purchased Water shall be made available and may be subscribed for by Purchaser in up to a total of Four (4) additional Blocks.

(ii) The Purchaser's option to increase the contract supply of Purchased Water hereunder as provided in this Paragraph shall terminate on June 30, 2021.

(iii) Purchaser may subscribe for one or more additional Blocks of water per year, at any time in those fiscal years identified in the Take-down Schedule attached as EXHIBIT "A" hereto (the "Take-down Schedule"), by submitting to the District one or more written Block requests (each a "Block Request") for that fiscal year, duly authorized by the Purchaser and approved by the District.

(2) Take-down of Block Water. The Purchaser may take-down water (i.e. remove water subscribed for under each Block from Reserved Status to Deliverable Water), in amounts not less than ten (10) acre-feet, at any time by submitting to the District a written take-down request ("Take-down Request"), duly authorized by the Purchaser and approved by the District. Notwithstanding the foregoing, the total water supply within each Block subscribed for in any given fiscal year shall be taken-down by Purchaser within that fiscal year or in any event paid for in full as provided below as set forth in Paragraph 2(b)(1)(B).

(3) Payment. Payment of the One-time Development Charge for each additional Block shall be due and payable in conformance with the provisions of Paragraph 2(b)(1) herein, and payment of the Annual Fee for each additional Block shall be due and payable commencing with the year in which the Block request is submitted, in conformance with the provisions of Paragraph 2(b)(2) herein.

(b) Take-down and Delivery Schedule. Subject to the terms and conditions of this Agreement, Purchased Water, including the Original Contract Supply and the Optional Contract Supply, shall be held by the District in reserved status ("Reserved Status"), and be made available for delivery by the District to the Purchaser in accordance with the Take-down Schedule, and the scheduling provisions set forth in Paragraph 7. Purchased Water scheduled to be delivered in a given fiscal year which is removed from Purchased Water status to become "Deliverable Water" according to the Take-down Schedule, shall then be delivered to the Purchaser at the specified point or points of delivery, and within the maximum daily flow rates ("Contract Capacity") set forth on the Delivery Schedule attached as EXHIBIT "B" hereto (the "Delivery Schedule"). The Parties hereby understand and acknowledge that in establishing the Contract Capacity, the District must consider both the capacity of the available Purchased Water supply and the capacity of the available CWP infrastructure, including the capacity of all available reservoirs, wells, treatment plants, transmission lines, meters and meter

stations, and pumps and pump stations within the CWP system (collectively, the "CWP System Capacity").

(c) Substantially Similarly Situated Customers Offer. The District and the Purchaser agree and understand that the sale of Purchased Water under this Agreement is under terms and conditions that are substantially the same for similarly situated customers entering into CWP water supply agreements during the period July 1, 2017 through June 30, 2018 (said grouping of water supply agreements being referred to for purpose of identification as "CWP FY2018 A"), and offered to all other existing CWP Water Supply Agreement Customers as of January 1, 2018.

(d) Similar Pricing Structure Amendment. In the event the District shall enter into any CWP water supply agreement(s) having a pricing structure or terms of sale more favorable to the purchaser therein than those set forth in Paragraph 2 below, the Parties agree that this Agreement shall be amended so as to apply the same pricing structure or terms of sale herein.

2. **Sales Price of Purchased Water**

(a) General.

(1) The Purchased Water is sold and delivered pursuant to a pricing structure containing the following two components: (i) a One-time Development Charge; and (ii) an Annual Fee, with its two subcomponents, as described in Paragraph 2(b) below. (The One-time Development Charge and the Annual Fee, including its two subcomponents, are sometimes referred to herein collectively as the "CWP Fees").

(2) Factors that will influence the amount for each of the two components of the pricing structure may include among other things, the grouping, by year, of water purchase agreements for CWP water.

(3) The CWP Fees set forth herein are imposed for the sole purpose of developing and providing the CWP water supply and providing the infrastructure necessary to deliver the Purchased Water to the Purchaser and other water users and customer agencies that enter into similarly situated and dated CWP water supply agreements. CWP Fees will not include District costs from projects not directly related to the CWP. The District shall treat all CWP water purchasers, similarly situated within water sales agreements

grouped according to the effective dates of said agreements as may be determined by the District, in an equal, fair and non-discriminatory manner.

(4) CWP Fees under this Agreement shall be due and payable by the Purchaser, as provided herein, regardless of whether the Purchaser calls for or uses any of the Purchased Water in any given fiscal year, subject to monthly and annual adjustments as provided in Paragraph 7 herein. Notwithstanding the foregoing, in the unlikely event the CWP infrastructure is not capable of delivering Purchased Water to Purchaser in the amount set forth in Column C of the Take-down Schedule, in the corresponding fiscal year, the obligation of the Purchaser to pay the One-time Development Charge due and payable that fiscal year shall be suspended, and the volume of water scheduled to be delivered in that fiscal year shall be set back and added onto the next succeeding year until the Deliverable Water is available for delivery to the Purchaser, at which time payment of any unpaid One-time Development Charges, in the amount(s) set forth in Column D of the Take-down Schedule shall be due, as billed by the District.

(5) Notwithstanding any provision herein to the contrary with regard to payment of CWP Fees, the Purchaser may request in writing that it be authorized to pre-pay, in whole or in part, any one or both of the CWP Fees due and owing hereunder. The pre-payment request shall be analyzed on a case-by-case basis,and be authorized at the sole discretion of the District, subject to such terms and conditions as the District shall determine at the time. The District's authorization to pre-pay and the terms and conditions of pre-payment shall be set forth in a separate written agreement to be executed between the District and the Purchaser.

(b) CWP Pricing Structure. The pricing structure for the CWP FY2018 A water supply under this Agreement is as follows:

(1) One-time Development Charge.

(A) The District must recover from all purchasers that enter into water supply agreements the costs of the District to develop the CWP, including the acquisition and development of the CWP water supply and the planning, design and construction of the CWP infrastructure ("CWP Development Cost"). The One-time Development Charge is charged on a per acre-foot basis as provided in Paragraph 2

below, and covers a portion of the Purchaser's proportionate share of the CWP Development Cost. The respective One-time Development Charges to be paid by Purchaser for the Purchased Water reserved under this Agreement are fixed in the amounts shown in Column D of the Take-down Schedule during the term of this Agreement for each Block of Purchased Water in Column A and Column B.

(B) The One-time Development Charge due and owing for each Block designated in the Take-down Schedule is paid one-time only by the Purchaser for the Block of water constituting the Original Contract Supply of Purchased Water set forth in Column A, and the Blocks of water constituting the Optional Contract Supply set forth in Column B of the Takedown Schedule. The One-time Development Charge in the amount set forth in Column D of the Takedown Schedule shall be paid in installments when Purchased Water subscribed for under a Block is taken-down pursuant to the provisions of Paragraph 1(a)(2) herein and removed from Reserved Status to become Deliverable Water as set forth in Column C of the Takedown Schedule. The amount due shall be payable on the first day of the month next succeeding the month in which Purchased Water is taken down and removed from reserved status to become Deliverable Water pursuant to the provisions of Paragraph 1(a)(2) herein. Notwithstanding the foregoing, the total amount of the One-time Development Charge due and owing for each Block of Purchased Water set forth in Column A and Column B shall be payable for the entire Block, in full, by June 30 of the fiscal year in which the Block of water is subscribed for by the Purchaser, whether or not the full amount of said Block is taken-down within that fiscal year by the Purchaser.

(2) Annual Fee.

(A) The Annual Fee is charged on a per acre-foot basis as provided in Paragraph 2(c) below, and is imposed to cover costs associated with the operation, maintenance, repair and replacement ("OM&R") of the CWP infrastructure, to fund OM&R reserves for the CWP, to pay the remaining portion of the Purchaser's proportionate share of the CWP Development Cost not covered by the One-time Development Charge ("proportionate share" for this purpose being defined as Purchaser's total volume of Purchased Water under this Agreement divided by the total capacity of the CWP attributable to all water capable

of being delivered through CWP infrastructure, estimated by the Parties as of the date hereof to be 53,312 acre-feet, averaged over a five-year rolling period). The amount of the Annual Fee to be charged is set annually by the District's Board of Trustees and may change from year-to-year.

(B) The Annual Fee, for the purpose of this Agreement, is comprised of two separate components, as follows:

(i) The Annual OM&R Fee Subcomponent ("OM&R Component"). This subcomponent is imposed to cover costs associated with the operation, maintenance, repair and replacement of the CWP infrastructure in operation status and to fund OM&R reserves for the CWP. The OM&R Component is estimated and shall be imposed in a reasonable amount in conformance with applicable State law, annually at the beginning of each Fiscal Year (which may change from year-to-year), and is charged on a per acre-foot basis for the then cumulative total of the amount of Deliverable Water as of that Fiscal Year, as shown in "Column C" of the Take-down Schedule. The Purchaser will only pay that amount attributed to a proportionate share of costs incurred for OM&R, and to fund the OM&R reserve, apportioned to the Purchaser based upon the annual cumulative volume of Deliverable Water, in acre-feet.

(ii) The Annual Capital Recovery Fee Subcomponent (the "Capital Recovery Component"). This subcomponent is imposed to pay the remaining portion of the Purchaser's proportionate share of the CWP Development Cost not covered by the One-time Development Charge, as defined above. The Capital Recovery Component is estimated from time to time by the District as it updates its CWP System financial status (which may change from year-to-year), taking into account, among other things, the timing of additional capital facilities, if any, needed to satisfy future customer demands on the CWP System, and is charged on a per acre-foot basis for the then cumulative total amount of Purchased Water identified as of that Fiscal Year, as shown in "Column A" and "Column B" of the Take-down Schedule. The Purchaser will only pay that amount attributed to a proportionate share of capital development costs incurred in financing the CWP, apportioned to the Purchaser based upon the annual volume of Purchased Water, in acre-feet, as shown each year under Columns A and B of the Take-down Schedule, as amended from time to time.

(C) The estimated amount of the OM&R Component and the Capital Recovery Component of the Annual Fee is set forth in the Take-down Schedule, Exhibit A. Subject to the provisions of Paragraph 2(b)(2)(D) below, the Annual Fee shall be calculated, invoiced and be payable by the Purchaser as follows:

(i) The OM&R Component of the Annual Fee shall be calculated by multiplying the volume of actual water delivered in the prior month by the estimated OM&R Component amount set forth in Column F of Exhibit A, and be payable on a monthly basis within 30 days of the date of the District's invoice for actual water deliveries made in months prior to the date of the invoice. The District will invoice the Purchaser for the OM&R component of the Annual Fee commencing the end of the month following the payment of the One-time Development Charge and Capital Recovery Component.

(ii) The Capital Recovery Component of the Annual Fee shall be calculated based upon the volume of Purchased Water subscribed for under a Block which is taken-down pursuant to the provisions of Paragraph 1(a)(b) and removed from Reserved Status to become Deliverable Water, as shown in Column C of the Takedown Schedule, multiplied by the estimated Capital Recovery Component amount of the Annual Fee set forth in Column E of the Takedown Schedule. The amount due shall be payable on the first day of the month next succeeding the month in which Purchased Water is removed from Reserved Status to become Deliverable Water pursuant to the provisions of Paragraph 1(a)(2) herein.

(iii) Subject to the provisions of Paragraph 7 below, the Annual Fee is to be paid by the Purchaser as provided herein regardless of whether the Purchaser calls for or uses any of the Purchased Water in any given year. In the event the amount paid by the Purchaser under invoices for actual water delivered in conformance with Paragraph 2(b)(2)(C) is less than the total Annual Fee due hereunder, the remaining balance shall be invoiced by the District in the June billing each fiscal year.

(D) Notwithstanding the provisions of Paragraph 2(b)(2)(C) above, the Purchaser, at its option, may give written notice to the District that it desires to capitalize components of the Annual Fee. The District is willing to accept an up-front capitalized payment ("Capitalized Annual Fee"), for a

period of years agreeable to the District and Purchaser ("Capitalization Period"), under terms and conditions established by the District in its sole discretion, subject to the following:

(i) Upon receipt of notice from the Purchaser, the District will calculate the total estimated amount of the Capital Recovery Component of the Annual Fee to be due and payable over the Capitalization Period commencing the date Deliverable Water becomes available to the Purchaser. The District will thereupon notify the Purchaser, in writing, of the amount of the Capital Recovery Component of the Annual Fee to be charged, which shall be due and payable by the Purchaser within thirty (30) days from the date it receives said notice.

(ii) The Parties agree that upon payment of the Capital Recovery Component of the Annual Fee no credit or additional payment is due whether the actual amounts vary from the estimated amounts which were paid. It is agreed that "Column H" contains the calculated Capital Prepayment amount per acre-foot of the One-time Development Fee and the Estimated Capital Recovery Component of the Annual Fee as of the date of this Agreement.

(c) Pricing Structure Applicable to the Purchaser Hereunder.

(1) The pricing structure for the CWP Fees due and owing for Purchased Water hereunder, including the One-time Development Charge and the Annual Fee (including the OM&R Component and the Capital Recovery Component), is set forth in the Take-down Schedule.

(2) Interest on Delinquent Accounts. Any CWP Fee that remains unpaid after it shall have become due and payable as provided herein shall be subject to simple interest at the rate of one and one-half percent (1.5%) of the delinquent amount per month. Interest will begin to accrue from the date of delinquency and will continue to accrue until such time as the delinquent CWP Fees and all accrued interest have been paid in full; provided, however, that no inter shall be charged to or paid by the Purchaser unless such delinquency continues for more than thirty (30) days or more beyond the date of delinquency.

3. **Quality of Water Delivered**

CWP culinary water shall be delivered to the Purchaser in conformance with standards for public

drinking water set by applicable law and regulation, including the Utah Division of Drinking Water and/or the Utah Drinking Water Board of the Department of Environmental Quality; provided, however, that the District shall not be liable, or otherwise in breach of this Agreement, for failure to meet those standards unless the failure is due to the District's willful misconduct or gross negligence. The District and Purchaser agree that the CWP water sources will be Provo River water, high quality deep groundwater from a well field in or near Vineyard, Utah, or other sources of comparable quality. Deliveries from any other sources shall be of comparable quality.

4. **Reservation of Water**

The District shall hold Purchased Water in Reserved Status for the Purchaser pursuant to the Take-down Schedule, which shall be amended as each additional Block of water is requested by the Purchaser pursuant to Paragraph 1(a)(2) herein. The total Optional Contract Supply of Purchased Water must be removed from Reserved Status and become Deliverable Water based upon the Takedown Schedule, subject to the provisions of Paragraph 1(a)(1)(B)(ii) herein. As Purchased Water becomes Deliverable Water, payments will be required for each acre-foot of Deliverable Water pursuant to the provisions of Paragraph 2.

5. **Point of Delivery**

(a) Purchased Water will be measured and delivered to the Purchaser only at the point or points of delivery identified in the Delivery Schedule. The infrastructure to be constructed by the District for the purpose of delivering Purchased Water from its main transmission lines at said point(s) of delivery include a vault, valve(s), meter(s), piping and related facilities and equipment ("Delivery Infrastructure"), as determined to be necessary by the District to deliver and measure the Purchased Water at said point(s). The Delivery Infrastructure will be constructed and installed at the District's sole expense in connection with the development of the CWP, and the District shall own, operate, maintain, repair and replace the same for the term of this Agreement.

(b) Once the District delivers Purchased Water to the point(s) of delivery, it shall be the responsibility of the Purchaser to provide its own facilities as needed to take this water from the Delivery Infrastructure or Purchasers sources into the Purchaser's own delivery and/or distribution system for its use. No

new points of delivery will be allowed without the prior written approval of the District. All Purchased Water delivered by the District under this Agreement will be measured through measuring devices installed in the Delivery Infrastructure or the Purchasers infrastructure at its sources.

6. **System Capacity**

(a) It is understood by the Purchaser that the delivery of Deliverable Water by the District to the Purchaser is limited to the Contract Capacity set forth in the Delivery Schedule.

(b) If CWP System Capacity is available to deliver water beyond the Contract Capacity, and the Purchaser so requests, the Purchaser may, with the prior written approval of the District, receive delivery of Deliverable Water at a flow rate higher than the Contract Capacity provided in the Delivery Schedule, subject to the following:

(1) The maximum flow rate at which the Deliverable Water shall be delivered and resulting adjustments in the applicable CWP Fees set forth in Paragraph 2 (c) herein for said year or other costs to be applied, if any, shall be negotiated and agreed upon by the Parties prior to the delivery of Deliverable Water in the increased amount.

(2) A request by the Purchaser to exceed the Contract Capacity shall be made on an annual basis no later than April 30th.

(3) Notwithstanding the foregoing, if the Contract Capacity is exceeded by the Purchaser without receiving the prior written approval of the District, then a monthly surcharge will be assessed to the Purchaser in an amount per acre-foot set annually by the District for each acre-foot of water exceeding Contract Capacity or Contract Capacity modified in accordance with Paragraph 6(b)(1), calculated on a daily basis.

7. **Quantity of Water Delivered**

(a) The District is not a guarantor of CWP water supply or of CWP delivery capacity. It is understood by the Parties that the District's ability to deliver CWP water to the Purchaser depends, in part, on the

available CWP System Capacity. Therefore, in its reasonable discretion and pursuant to its interpretation and the application of its policies, rules, and procedures as they may be amended periodically:

(1) in times of CWP water shortage due to lack of runoff or other conditions which may be beyond the control of the District, the District may make a ratable allocation of CWP water among the various CWP purchasers, which allocation shall be based on the then-current amount of Deliverable Water in proportion to the District's CWP water purchase commitments under all of its CWP water supply agreements, and the amount of Deliverable Water for that year shall be reduced pro-rata; and

(2) in the event of CWP System Capacity shortages due to potential failures of equipment and infrastructure, and limitations in water source and infrastructure capacities, and in peak demand periods and other times of limited delivery capacity, the District may allocate the available CWP System Capacity among the District's CWP purchasers, which allocation shall be based on the then-current amount of CWP System Capacity available in proportion to the total CWP delivery capacity set forth in the Delivery Schedule.

(b) No liability shall accrue against the District or any of its trustees, officers, agents, or employees, for any damages, direct or indirect, sustained by the Purchaser and/or its customers in the event of shortages of CWP System Capacity, or the District's inability to deliver the Purchased Water to the Purchaser not resulting from the District's own negligence, or due to shortages caused by drought, hostile diversion, prior or superior claims, or other similar causes not within the control of the District.

(c) In the event the Purchaser does not take delivery during any contract year of all of the Deliverable Water for which the One-time Development Charge has been paid in conformance with the provisions of Paragraph 2 (b) (1), the Purchaser may take delivery in the immediately following contract year of so much of the Deliverable Water not taken as does not exceed five percent (5%) of the total Deliverable Water for that year ("Deferred Water"), subject to the following:

(1) Calculation of the amount of Deferred Water shall not include any water besides Deliverable Water as of the end of the previous contract year.

(2) Deferred Water cannot be accumulated on a multi-year basis.

(3) Deferral is subject to the availability of CWP System Capacity, as reasonably determined by the District;

(4) Delivery of Deferred Water shall have a lower priority than delivery of Deliverable Water for that year;

(5) The Purchaser may take delivery of Deferred Water only after it has taken delivery of all of the Deliverable Water for the contract year in which the Deferred Water is to be taken.

8. **Use and Delivery of Purchased Water by the Purchaser**

(a) The Purchaser shall use the Purchased Water made available to it under this Agreement only for M&I purposes. No other use of Purchased Water shall be made without the prior written consent of the District.

(b) The portfolio of water rights the District has acquired for the CWP requires that a percentage of water represented by the CWP water rights be returned to the hydrologic system in Utah County in order to avoid interference with other water right appropriators and with other District water supply operations. As such, the Purchaser shall not recycle nor otherwise utilize the Purchased Water in a manner that depletes the Purchased Water in amounts greater than fifty percent (50%), without the prior written consent of the District.

(c) The Purchaser shall build its own infrastructure as required by it to take delivery of the Purchased Water from the District and utilize and distribute the same to its customers. All cost for O&M of the Purchaser's facilities shall be paid by the Purchaser and not the District.

(d) The Purchaser shall not use, deliver for use, sell, lease or otherwise dispose of any Purchased Water outside Purchaser's political boundaries or its recognized service area, without the prior written consent of the District. No user of the Purchased Water will use the Purchased Water on any basis other than the same basis as the general public.

(e) The facilities to be used to provide and deliver the Purchased Water may be financed, in whole or in part, with the proceeds of tax-exempt bonds ("Tax-exempt Bonds") of the District.

(1) The Purchaser acknowledges that in the event the District issues or has issued Tax-exempt Bonds related to the Purchased Water or its delivery, the use of Purchased Water by the Purchaser may be subject to various limitations imposed under the Internal Revenue Code of 1986 (the "Code"), and United States Treasury Regulations dealing with the tax-exempt bond provisions of the Code (the "Regulations"), that must be complied with in order to protect the tax-exempt status of interest on the Tax-exempt Bonds; and as such, the Purchaser agrees as follows:

(A) The Purchaser shall not, without the prior written approval of the District, supply or enter into any arrangement to supply any of the Purchased Water to any person or entity, other than a state or local government, that conveys any preferential benefits, or that supplies water other than on the basis of rates that are generally applicable and uniformly applied or supplies the water to any person or entity who will resell the water in such a manner as to establish a "Private Business Use" under applicable provisions of Section 141(a) of the Code and the Regulations, thereby jeopardizing the tax-exempt status of the Tax-Exempt Bonds.

(B) The Purchaser shall not establish any fund or otherwise set aside any money or investments that it reasonably expects to use to make payments due and owing to the District under this Agreement without the prior written approval of the District (which approval may, among other requirements, limit the maximum yield for the investment of any such amounts pursuant to certain arbitrage rules under applicable provisions of Section 148(f) of the Code and the Regulations).

(2) The Purchaser shall, on an annual basis, provide to the District written verification of compliance with the requirements of this Subparagraph 8 (e).

9. **Water Conservation**

The Purchaser covenants that it shall prepare and file with the District a water conservation plan promulgated by the Purchaser which addresses, among other things, pricing, technical assistance and public education as components of the water conservation plan. Such plan shall be submitted to the District within one year of first delivery of Purchased Water to the Purchaser and shall be updated biennially.

10. **Collection of Fees and Charges**

In order to assure full and continuous performance of the Purchaser's obligations as set forth herein, the Purchaser hereby covenants and agrees that it will levy and collect all necessary fees, charges and assessments and reasonable contingencies in amounts which, together with other legally available funds, are sufficient to pay in full to the District all of its CWP Fee obligations under this Agreement. The Purchaser shall timely pay to the District the full amount of CWP Fees as they become due regardless of whether the Purchaser collects the full amount of its fees, charges, and assessments from its customers.

11. **Refusal of Water in the Event of Default and Termination**

(a) The District may withhold the delivery of all or any portion of the Purchased Water to the Purchaser if the Purchaser is in arrears for more than sixty (60) days in the payment to the District of any CWP Fee to be paid pursuant to Paragraph 2(b). Deliveries shall resume upon payment in full of any such arrearage including any and all accrued interest imposed by the District pursuant to this Agreement. Funds received to cure any arrearage shall be first applied by the District to payment of accrued interest and then towards the reduction of the principal on any such outstanding CWP Fee.

(b) If the Purchaser is in default under any provision of this Agreement and the default remains uncured for more than sixty (60) days after the date of written notice of default, the Parties shall reasonably mediate the dispute. However, if the dispute remains unresolved notwithstanding mediation, this Agreement may be terminated at the sole discretion of the District, subject to the following:

(1) The Purchaser shall have up to one (1) year after the date of written notice of default to seek judicial resolution of the dispute following mediation. This Agreement may not be terminated by the District during the pendency of any judicial action, including any subsequent appeal.

(2) Should the Purchaser fail to bring legal action within said one year period and the dispute otherwise remains unresolved, the District may thereupon proceed to terminate the Agreement, effective upon written notice to the Purchaser.

(3) Upon termination of the Agreement, the Purchased Water will revert to the District for reallocation to other purchasers as determined by the District.

(4) Termination will not relieve the Purchaser of its obligations to pay any past due CWP Fees, together with any and all accrued interest; however, the Purchaser will be relieved of any future payment obligations after the termination of this Agreement.

12. **Term of Agreement**

The term of this Agreement shall be perpetual so long as the required payments are paid in accordance with the terms of this Agreement. However, nothing herein shall prohibit the Parties from amending or terminating this Agreement if the Parties mutually agree to do so. There are no third party beneficiaries of this Agreement, and no one other than the Parties hereto may enforce its terms and conditions.

13. **Assignment Limited**

Neither Party may assign this Agreement or any of its rights under it without the prior written consent of the other Party; provided, however, that the District may pledge and assign any monies received pursuant to this Agreement to the payment of the District's bonds.

14. **Exhibits**

All exhibits attached to this Agreement are incorporated into and made a part of this Agreement as though fully set forth herein.

15. **Binding Effect**

This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

16. **Severability**

If any term or provision of this Agreement shall, to any extent, be determined by a court of competent jurisdiction to be void, voidable, or unenforceable, such void, voidable or unenforceable term or provision shall not affect the enforceability of any other term or provision of this Agreement.

17. **Construction**

This Agreement is the result of negotiations between the Parties, neither of whom has acted under any duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms and provisions hereof shall

be construed in accordance with their usual and customary meanings. Each Party hereby waives the application of any rule of law which otherwise would be applicable in connection with the construction of this Agreement that ambiguous or conflicting terms or provisions should be construed against the Party who (or who's attorney) prepared the executed Agreement or any earlier draft of the same. As used herein, all words in any gender shall be deemed to include the masculine, feminine, or neuter gender, all singular words shall include the plural, and all plural words shall include the singular, as the context may require.

18. **Further Action**

The Parties hereby agree to execute and deliver such additional documents and to take further action as may become necessary or desirable to fully carry out the provisions and intent of this Agreement.

19. **Business Relationship**

This Agreement neither acknowledges the existence of nor is it intended nor shall it be construed to establish, create or organize any principal-agent relationship, partnership, joint venture, or any other legal entity or form of business relationship between the Parties, and is limited solely to the purposes and interests expressed herein.

20. **Entire Agreement**

This Agreement, including exhibits, constitutes the entire agreement of the Parties and supersedes all prior undertakings, representations, or agreements of the Parties regarding the subject matter hereof.

21. **Warranty of Authority**

Each individual executing this Agreement does hereby represent and warrant that he or she has been duly authorized to sign this Agreement in the capacity and for the entities identified herein. The District and the Purchaser each represent and warrant that it has full legal right and authority to enter into this Agreement.

22. **Notices**

Notices given by or to the Parties shall be in writing and may be served personally or served by depositing them in the United States mail, postage prepaid, certified or registered mail with return receipt requested, addressed to the Parties at the addresses set forth below, or at such other addresses as the Parties may

designate in writing:

DISTRICT:

Central Utah Water Conservancy District
Attention: General Manager
355 West University Parkway
Orem, Utah 84058

PURCHASER:
THE CITY OF SARATOGA SPRINGS
Attention: Mayor
And to:
Attention: City Recorder
3700 North Commerce Drive, Suite 200
Saratoga Springs, UT 84045

23. **Rules and Regulations Governing Service**

Subject to the terms and conditions of this Agreement, the District reserves the right to adopt rules and regulations governing the delivery of water under this Agreement, and to exercise its full statutory powers, including specifically the right to amend its rates, fees, charges, and its rules and regulations in the future, and the right to exercise its statutory powers, as they now exist or are amended or enacted in the future. It is expressly agreed that the District, by signing this Agreement, has not surrendered any of its rights in this regard.

24. **Subject to the Act**

Subject to the terms and conditions of this Agreement, any commitment of Purchased Water, and payment to the District for Purchased Water so committed pursuant to this Agreement, shall be subject to the Act and the rules and regulations of the District's Board of Trustees now existing or hereafter legally promulgated, as the same may be supplemented or amended.

IN WITNESS WHEREOFF, the Parties hereto have executed this Agreement effective as of the day and year first written above.

CENTRAL UTAH WATER CONSERVANCY DISTRICT	**CITY OF SARATOGA SPRINGS**
By: _____	By: _____
Its: President	Its: Mayor
Attest:	Attest:
_____	_____
Secretary	City Recorder
8/15/18	8-21-2018

EXHIBIT A

TAKE-DOWN SCHEDULE

PURCHASED WATER TAKE-DOWN SCHEDULE (BY VOLUME) FOR PURCHASED WATER UNDER THIS AGREEMENT

EXHIBIT A

August, 2018

Take-Down Schedule - Purchased Water Take-Down Schedule (By Volume) for Purchased Water Under this Agreement

COLUMN	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	Annual Volume (Block) of Purchased Water For Which One-Time Development Fee is Due (AF)	Annual Volume (Block) of Additional CWP Water Available to Be Removed from Reserved Status (AF)	Volume of Purchased Water Removed from Reserved Status which becomes Deliverable Water (AF)	One Time Development Charge for Blocks of Purchased Water (per AF)	*Actual* and Estimated Capital Recovery Component of Annual Fee for Volume of Water in Column C (per AF)	*Actual* and Estimated OM&R Component of Annual Fee for Deliverable Water in Column (F) (per AF)	*Actual* and Estimated Future Annual Fee (As set annually by the District) (Fee includes the OM&R and Capital Recovery Components in Columns D & G	Capital Prepayment with 2.5% Discount of One-Time Development Fee and Estimated Capital Recovery Component of Annual Fee (per AF)
2008-09	0	0	0	*$5,850*			*$300*	
2009-10	0	0	0	*$6,200*			*$314*	
2010-11	0	0	0	*$7,000*			*$328*	
2011-12	0	0	0	*$7,800*			*$343*	
2012-13	0	0	0	*$8,400*			*$358*	
2013-14	0	0	0	*$8,500*			*$374*	
2014-15	0	0	0	*$9,100*	*$222*	*$169*	*$391*	
2015-16	0	0	0	*$9,370*	*$203*	*$205*	*$408*	
2016-17	0	0	0	*$9,600*	*$252*	*$175*	*$427*	*$16,426*
2017-18	0	0	0	*$9,840*	*$280*	*$166*	*$446*	*$16,590*
2018-19	100	200	60	$10,090	$310	$156	$466	$16,736
2019-20	0	200		$10,340	$346	$141	$487	$16,850
2020-21	200	0		$10,600	$364	$145	$509	$16,935
2021-22	0	0		$10,870	$383	$149	$532	$17,008
2022-23	0	0		$11,140	$400	$156	$556	$17,058
2023-24	0	0		$11,420	$421	$160	$581	$17,095
2024-25	0	0		$11,720	$442	$165	$607	$17,126

 # - Actual previous or present fee amounts are in Italics and Blue as set by District Board of Trustees

 # - Fee amounts are estimated amounts and set annually by District Board of Trustees

EXHIBIT B

DELIVERY SCHEDULE

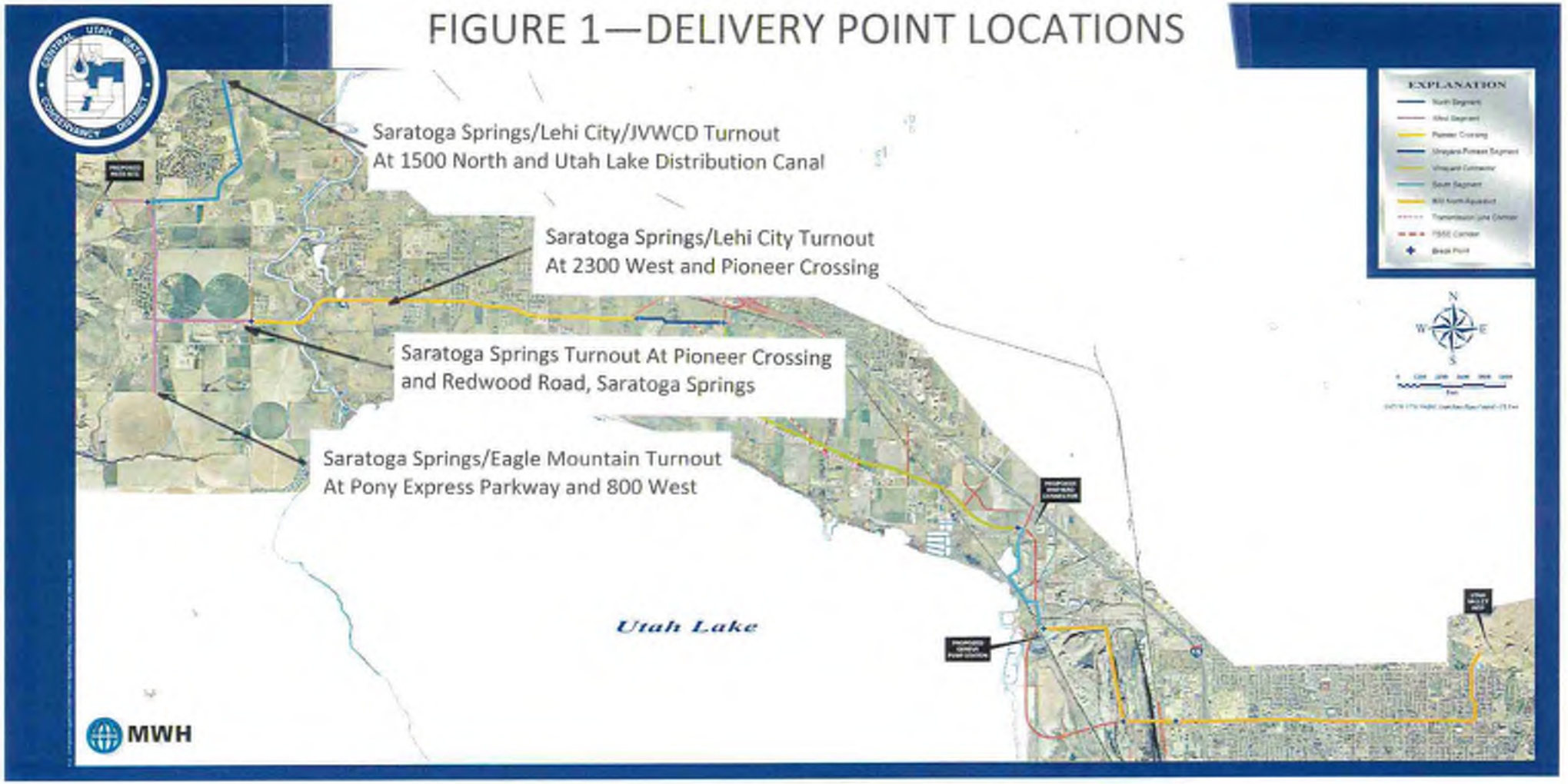
DELIVERY LOCATION AND RATE OF DELIVERY CAPACITY UNDER THIS AGREEMENT

I. FOR PURCHASED WATER

Delivery Location See Figure 1	Ultimate Contract Capacity (Maximum Daily Flow Rate in GPM But Limited by Annual Deliverable Volume) See Note (1)
1. Turnout at approximately 2300 West Pioneer Crossing, Lehi	
2. Turnout at approximately Pony Express Parkway and 800 West, Saratoga Springs	
3. Turnout at approximately 1500 North and Utah Lake Distribution Canal, Lehi	
4. Turnout at approximately Pioneer Crossing and Redwood Road, Saratoga Springs	
See attached Figure 1	For Combined Total of up to 394 GPM

Notes:
(1) The total Contract Capacity corresponds to the Cumulative Annual Volume Delivered shown in Exhibit A in each year multiplied by 18% and divided by 31 days and converted to a gallons per minute flow rate, i.e. Delivered Water amount in AF multiplied by 0.18 divided by 31 days multiplied by 325,829 gallons per AF divided by 24 hours per day divided by 60 minutes per hour.

FIGURE 1—DELIVERY POINT LOCATIONS



RESOLUTION NO. R26-08 (02-03-26)

A RESOLUTION ADOPTING UPDATES TO THE CITY'S SANITARY SEWER MASTER PLAN

WHEREAS, the City operates Drinking Water and Pressurized Irrigation Systems that provide s an essential service for the citizens of Saratoga Springs; and

WHEREAS, the Drinking Water and Pressurized Irrigation Master Plans were last updated and adopted by the Saratoga Springs City Council in 2017 to strategically plan for the expansion, repair, replacement, and operation of the Drinking Water and Pressurized Irrigation systems at that time; and

WHEREAS, in 2025, the city hired Hansen, Allen, and Luce to review, evaluate, and update the Drinking Water and Pressurized Irrigation master plans; and

WHEREAS, the primary objective of updating the Drinking Water and Pressurized Irrigation Master Plans is to ensure it reflects the best available population growth projections, ensure consistency with growth patterns that have occurred in the City since the last update, to ensure consistency with the Drinking Water and Pressurized Irrigation Impact Fee Facilities Plans and Analysis, and to review and revise as necessary the costs for capital facility improvements; and

WHEREAS, adoption by the City Council of the City of Saratoga Springs of the updated Drinking Water and Pressurized Irrigation Master Plan demonstrates their commitment to operating the sanitary sewer system and planning for growth in an environmentally and fiscally responsible manner; and

WHEREAS, after considering the facts presented them, the Council finds the updated Drinking Water and Pressurized Irrigation Master Plans should be approved and that such action will reasonably further the health, safety and general welfare of the citizens of the City of Saratoga Springs.

NOW THEREFORE, BE IT RESOLVED by the governing body of the City of Saratoga Springs, Utah that the Drinking Water and Pressurized Irrigation Master Plans, attached hereto as Exhibits A and B, are hereby adopted, and City staff are authorized to implement the plan as a standard of practice. This resolution shall take effect immediately upon passage.

PASSED on the 3rd day of February, 2026

CITY OF SARATOGA SPRINGS
A UTAH MUNICIPAL CORPORATION

_____
Chris Carn, Mayor

Attest: _____
Nicolette Fike, City Recorder