AGENDA

Jim Miller, *Mayor*
Stephen Willden, *Mayor Pro Tem*
Shellie Baertsch, *Council Member*
Michael McOmber, *Council Member*
Bud Poduska, *Council Member*
Chris Porter, *Council Member*

CITY COUNCIL MEETING
Tuesday, January 3, 2017
7:00 P.M.
City of Saratoga Springs Council Chambers
1307 North Commerce Drive, Suite 200, Saratoga Springs, Utah 84045

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1. Call to Order.
2. Roll Call.
3. Invocation / Reverence.
4. Pledge of Allegiance.
5. Public Input – This time has been set aside for the public to express ideas, concerns, and comments.

REPORTS:

1. Mayor.
2. City Council.
3. Administration Communication with Council.
4. Staff Updates: Inquiries, Applications, and Approvals.

PUBLIC HEARINGS:

1. Parks Sales Tax Revenue Bonds, Series 2017, Authorizing Resolution R17-1 (1-3-17); and Authorization for Payment to Zions Bank.
2. Budget Amendments; Resolution R17-2 (1-3-17).
3. Bicycle and Pedestrian Master Plan General Plan Amendment; Ordinance 17-1 (1-3-17).

BUSINESS ITEMS:

1. Code Amendment – Park, Trail, Special Events Signs; Ordinance 17-2 (1-3-17) *(cont. from 10-18-16)*.
2. Engineering Services Contract with Hansen, Allen & Luce, Inc. for Secondary Water and Drinking Water Amendments to the Master Plan, Capital Facilities Plan, Impact Fees Facility Plan (IFFP), and Impact Fee Analysis (IFA); Resolution R17-3 (1-3-17).
3. 400 S. Reimbursement Agreement with D.R. Horton; Resolution R17-4 (1-3-17).
4. UDOT SR-68 Corridor Agreement Addendum No. 1; Resolution R17-5 (1-3-17).
5. Modification of Contract with Professional Engineering Consultants (PEC) for Sports Complex Design; Resolution R17-6 (1-3-17).
6. Transportation Master Plan, December 2016 Update; Ordinance 17-3 (1-3-17) *(cont. from 12-6-16)*.

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 766-9793 at least one day prior to the meeting.

7. Planning Commission Appointment; Resolution R17-7 (1-3-17).
8. Marina Pump Station COP Construction, Value Engineering (VE) Change Order #1; Resolution R17-8 (1-3-17).
9. North Zone 1 Waterline, Patterson Homes Reimbursement; Resolution R17-9 (1-3—17).
10. Utah Lake Distributing Canal Pump Station, Vancon Change Order #1 for Upsize of the Secondary Waterline in Sierra Estates for the North Zone 1 Waterline; Resolution R17-10 (3-1-17).

APPROVAL OF MINUTES:

1. December 6, 2016.

CLOSED SESSION:

Motion to enter into closed session for any of the following: purchase, exchange, or lease of real property; discussion regarding deployment of security personnel, devices, or systems; pending or reasonably imminent litigation; the character, professional competence, or the physical or mental health of an individual.

ADJOURNMENT

Decorum - *The Council requests that citizens help maintain the decorum of the meeting by turning off electronic devices, being respectful to the Council and others.*
Councilmembers may participate in this meeting electronically via video or telephonic conferencing.
The order of the agenda items is subject to change by order of the Mayor.
Final action may be taken concerning any topic listed on the agenda.

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Saratoga Springs, Utah

January 3, 2017

The City Council of The City of Saratoga Springs, Utah (the "Council"), met in regular public session at the regular meeting place of the Council in the City of Saratoga Springs, Utah, on January 3, 2017, at the hour of 7:00 p.m., with the following members of the Council being present:

Jim Miller	Mayor
Shellie Baertsch	Councilmember
Michael McOmber	Councilmember
Bud Poduska	Councilmember
Chris Porter	Councilmember
Stephen Willden	Councilmember

Also present:

Mark Christensen	City Manager
Cindy LoPiccolo	City Recorder

Absent:

After the meeting had been duly called to order and after other matters not pertinent to this resolution had been discussed, the City Recorder presented to the Council a Certificate of Compliance with Open Meeting Law with respect to this January 3, 2017, meeting, a copy of which is attached hereto as Exhibit A.

The following resolution was then introduced in written form, was fully discussed, and pursuant to motion duly made by Councilmember _____ and seconded by Councilmember _____, was adopted by the following vote:

AYE:

NAY:

The resolution is as follows:

RESOLUTION NO. R17-01 (1-3-17)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SARATOGA SPRINGS, UTAH (THE "ISSUER"), AUTHORIZING THE ISSUANCE AND SALE OF NOT MORE THAN $10,000,000 AGGREGATE PRINCIPAL AMOUNT OF SALES TAX REVENUE BONDS, SERIES 2017; FIXING THE MAXIMUM AGGREGATE PRINCIPAL AMOUNT OF THE BONDS, THE MAXIMUM NUMBER OF YEARS OVER WHICH THE BONDS MAY MATURE, THE MAXIMUM INTEREST RATE WHICH THE BONDS MAY BEAR, AND THE MAXIMUM DISCOUNT FROM PAR AT WHICH THE BONDS MAY BE SOLD; DELEGATING TO CERTAIN OFFICERS OF THE ISSUER THE AUTHORITY TO APPROVE THE FINAL TERMS AND PROVISIONS OF THE BONDS WITHIN THE PARAMETERS SET FORTH HEREIN; AUTHORIZING AND APPROVING THE EXECUTION OF A SUPPLEMENTAL INDENTURE, A BOND PURCHASE AGREEMENT, AND OTHER DOCUMENTS THAT MAY BE REQUIRED IN CONNECTION THEREWITH; APPROVING A PRELIMINARY OFFICIAL STATEMENT AND AN OFFICIAL STATEMENT; AUTHORIZING THE TAKING OF ALL OTHER ACTIONS NECESSARY TO THE CONSUMMATION OF THE TRANSACTIONS CONTEMPLATED BY THIS RESOLUTION; AND RELATED MATTERS.

WHEREAS, the City Council (the "Council") of the Issuer desires to (a) finance all or a portion of the construction of park and recreational improvements and all related improvements (collectively, the "Series 2017 Project"), (b) fund any necessary debt service reserve funds, and (c) pay costs of issuance with respect to the Series 2017 Bonds herein described; and

WHEREAS, to accomplish the purposes set forth in the preceding paragraph, and subject to the limitations set forth herein, the Issuer desires to issue its Sales Tax Revenue Bonds, Series 2017 (the "Series 2017 Bonds") (to be issued from time to time as one or more series and with such other series or title designation(s) as may be determined by the Issuer), pursuant to (a) Local Government Bonding Act, Title 11, Chapter 14, Utah Code Annotated 1953, as amended (the "Act"), (b) this Resolution, and (c) a General Indenture of Trust and a Supplemental Indenture of Trust (collectively, the "Indenture"), each between the Issuer and a trustee (the "Trustee") in substantially the forms presented to the meeting at which this Resolution was adopted and which are attached hereto as Exhibit B; and

WHEREAS, the Act provides that prior to issuing bonds, an issuing entity must (a) give notice of its intent to issue such Series 2017 Bonds and (b) hold a public hearing to receive input from the public with respect to (i) the issuance of the Series 2017 Bonds and (ii) the potential economic impact that the improvement, facility or property for which the Series 2017 Bonds pay all or part of the cost will have on the private sector; and

WHEREAS, the Issuer has heretofore published a notice of such hearing with respect to the Series 2017 Bonds, including a notice of bonds to be issued, in compliance with the Act, which hearing was held on the date hereof; and

WHEREAS, there has been presented to the Council at this meeting a form of a bond purchase agreement (the "Bond Purchase Agreement"), in substantially the form attached hereto as Exhibit C to be entered into between the Issuer and the underwriter or the purchaser selected by the Issuer for the Series 2017 Bonds (the "Underwriter/Purchaser") in the event that the Series 2017 Bonds are not sold pursuant to a public bid with an official notice of bond sale; and

WHEREAS, in the event that the Designated Officers (defined below) determine that it is in the best interests of the Issuer to publicly offer all or a portion of the Series 2017 Bonds, the Issuer desires to authorize the use and distribution of one or more of a Preliminary Official Statement (the "Preliminary Official Statement") in substantially the form attached hereto as Exhibit D, and to approve one or more of a final Official Statement (the "Official Statement") in substantially the form as the Preliminary Official Statement, and other documents relating thereto; and

WHEREAS, in order to allow the Issuer (with the consultation and approval of Zions Public Finance, Inc., the Issuer's Municipal Advisor) flexibility in setting the pricing date of the Series 2017 Bonds to optimize debt service costs to the Issuer, the Council desires to grant to either the Mayor or any Mayor pro tem (the "Mayor") and the City Manager (the "Designated Officers"), the authority to (a) determine whether all or a portion of the Series 2017 Bonds should be sold pursuant to a private placement or a public offering (including via a negotiated underwriter or public bid); (b) approve the principal amounts, interest rates, terms, maturities, redemption features, and purchase price at which the Series 2017 Bonds shall be sold; and (c) make any changes with respect thereto from those terms which were before the Council at the time of adoption of this Resolution, provided such terms do not exceed the parameters set forth for such terms in this Resolution (the "Parameters").

NOW, THEREFORE, it is hereby resolved by the City Council of the City of Saratoga Springs, Utah, as follows:

Section 1. For the purpose of (a) financing the Series 2017 Project; and (b) paying costs of issuance of the Series 2017 Bonds, the Issuer hereby authorizes the issuance of the Series 2017 Bonds which shall be designated "Saratoga Springs, Utah Sales Tax Revenue Bonds, Series 2017" (to be issued from time to time as one or more series and with such other series or title designation(s) as may be determined by the Issuer) in the aggregate principal amount of not to exceed $10,000,000. The Series 2017 Bonds shall mature in not more than twenty-six (26) years from their date or dates, shall be sold at a price not less than ninety-eight percent (98%) of the total principal amount thereof, shall bear interest at a rate or rates of not to exceed 5.50% per annum, as shall be approved by the Designated Officers, all within the Parameters set forth herein. The issuance of the Series 2017 Bonds shall be subject to the final approval of Bond Counsel and to the approval of the City Attorney for the Issuer.

Section 2. The Designated Officers are hereby authorized to specify and agree as to the method of sale (among competitive sale or negotiated sale (including a private placement without the use of an Official Statement) the final principal amounts, terms, discounts, maturities, interest rates, redemption features, and purchase price with respect to the Series 2017 Bonds for and on behalf of the Issuer, provided that such terms are within the Parameters set by this Resolution. The selection of the form of sale via a private placement, negotiated underwriting, or competitive sale, the selection of the Underwriter/Purchaser and the determination of the final terms and redemption provisions for the Series 2017 Bonds by the Designated Officers shall be evidenced by the execution of the Bond Purchase Agreement if the Series 2017 Bonds are sold at a private or negotiated underwriting sale in substantially the form attached hereto as Exhibit C. The form of the Certificate of Award and of the Bond Purchase Agreement are hereby authorized, approved and confirmed.

Section 3. The Indenture and the Bond Purchase Agreement (if applicable) in substantially the forms presented to this meeting and attached hereto as Exhibits B and C, respectively, are hereby authorized, approved, and confirmed. The Designated Officers are hereby authorized to execute and deliver the Indenture and the Bond Purchase Agreement in substantially the forms and with substantially the content as the forms presented at this meeting for and on behalf of the Issuer, with final terms as may be established by the Designated Officers, in consultation with the Municipal Advisor, within the Parameters set forth herein, and with such alterations, changes or additions as may be necessary or as may be authorized by Section 5 hereof. The Designated Officers are each hereby authorized to select the Underwriter/Purchaser and to specify and agree as to the final principal amounts, terms, discounts, maturities, interest rates, redemption features, purchase price, and any other terms with respect to the Series 2017 Bonds for and on behalf of the Issuer, provided that such terms are within the Parameters set by this Resolution.

Section 4. Should the Designated Officers determine to have the Series 2017 Bonds underwritten, the Issuer hereby authorizes the utilization of the Preliminary Official Statement, in the form attached hereto as Exhibit D, in the marketing of the Series 2017 Bonds and hereby approves the Official Statement in substantially the same form as the Preliminary Official Statement. The Mayor is hereby authorized to execute the Official Statement evidencing its approval by the Issuer.

Section 5. The Designated Officers and any other appropriate officials of the Issuer are authorized to make any alterations, changes or additions to the Indenture, the Series 2017 Bonds, the Bond Purchase Agreement, the Preliminary Official Statement, the Official Statement, a certificate of award, if necessary, or any other document herein authorized and approved which may be necessary to conform the same to the final terms of the Series 2017 Bonds (within the Parameters set by this Resolution), to conform to any applicable bond insurance or reserve instrument or to remove the same, to correct errors or omissions therein, to complete the same, to remove ambiguities therefrom, or to conform the same to other provisions of said instruments, to the provisions of this Resolution or any resolution adopted by the Council or the provisions of the laws of the State of Utah or the United States.

Section 6. The form, terms, and provisions of the Series 2017 Bonds and the provisions for the signatures, authentication, payment, registration, transfer, exchange, redemption, and number shall be as set forth in the Indenture. The Mayor or Mayor pro tem and the City Recorder are hereby authorized and directed to execute and seal the Series 2017 Bonds and to deliver said Series 2017 Bonds to the Trustee for authentication. The signatures of the Mayor or Mayor pro tem and the City Recorder may be by facsimile or manual execution.

Section 7. The Designated Officers or other appropriate officials of the Issuer are hereby authorized and directed to execute and deliver to the Trustee the written order of the Issuer for authentication and delivery of the Series 2017 Bonds in accordance with the provisions of the Indenture.

Section 8. Upon their issuance, the Series 2017 Bonds will constitute special limited obligations of the Issuer payable solely from and to the extent of the sources set forth in the Series 2017 Bonds and the Indenture. No provision of this Resolution, the Indenture, the Series 2017 Bonds, or any other instrument, shall be construed as creating a general obligation of the Issuer, or of creating a general obligation of the State of Utah or any political subdivision thereof, or as incurring or creating a charge upon the general credit of the Issuer or its taxing powers.

Section 9. The Designated Officers or other appropriate officials of the Issuer, and each of them, are hereby authorized and directed to execute and deliver for and on behalf of the Issuer any or all additional certificates, documents and other papers (including, without limitation, any tax compliance policies and reserve instrument guaranty agreements permitted by the Indenture) and to perform all other acts they may deem necessary or appropriate in order to implement and carry out the matters authorized in this Resolution and the documents authorized and approved herein.

Section 10. After the Series 2017 Bonds are delivered by the Trustee to the Underwriter/Purchaser, and upon receipt of payment therefor, this Resolution shall be and remain irrepealable until the principal of, premium, if any, and interest on the Series 2017 Bonds are deemed to have been duly discharged in accordance with the terms and provisions of the Indenture.

Section 11. The Issuer held a public hearing on the date hereof, to receive input from the public with respect to (a) the issuance of the Series 2017 Bonds, and (b) the potential economic impact that the improvements to be financed with the proceeds of the Series 2017 Bonds will have on the private sector, which hearing date was not less than fourteen (14) days after notice of such public hearing was (i) first published, once a week for two consecutive weeks, in The Daily Herald, a newspaper of general circulation in the Issuer, (ii) posted on the Utah Public Notice Website created under Section 63F-1-701 Utah Code Annotated 1953, as amended, and (iii) posted on the Utah Legal Notices website (www.utahlegals.com) created under Section 45-1-101, Utah Code Annotated 1953, as amended.

Section 12. All resolutions or parts thereof in conflict herewith are, to the extent of such conflict, hereby repealed and this Resolution shall be in full force and effect immediately upon its approval and adoption.

APPROVED AND ADOPTED this January 3, 2017.

(SEAL)

By:_____
Jim Miller, Mayor

ATTEST:

By:_____
Cindy LoPiccolo, City Recorder

(Other business not pertinent to the foregoing appears in the minutes of the meeting.)

Upon the conclusion of all business on the Agenda, the meeting was adjourned.

(SEAL)

By:_____
Jim Miller, Mayor

ATTEST:

By:_____
Cindy LoPiccolo, City Recorder

STATE OF UTAH)
: ss.
COUNTY OF UTAH)

I, Cindy LoPiccolo, the duly appointed and qualified City Recorder of The City of Saratoga Springs, Utah (the "City"), do hereby certify according to the records of the City Council (the "City Council") in my official possession that the foregoing constitutes a true and correct excerpt of the minutes of the meeting of the City Council held on January 3, 2017, including a resolution (the "Resolution") adopted at said meeting as said minutes and Resolution are officially of record in my possession.

I further certify that the Resolution, with all exhibits attached, was deposited in my office on January 3, 2017.

IN WITNESS WHEREOF, I have hereunto subscribed my signature and impressed hereon the official seal of said City, this January 3, 2017.

(SEAL)

By:_____
Cindy LoPiccolo, City Recorder

EXHIBIT A

CERTIFICATE OF COMPLIANCE WITH
OPEN MEETING LAW

I, Cindy LoPiccolo, the undersigned City Recorder of The City of Saratoga Springs, Utah (the "City"), do hereby certify, according to the records of the City in my official possession, and upon my own knowledge and belief, that in accordance with the requirements of Section 52-4-202, Utah Code Annotated, 1953, as amended, I gave not less than twenty-four (24) hours public notice of the agenda, date, time and place of the January 3, 2017, public meeting held by the City Council of the City (the "City Council") as follows:

(a) By causing a Notice, in the form attached hereto as Schedule 1, to be posted at the principal offices of the City on _____, _____, at least twenty-four (24) hours prior to the convening of the meeting, said Notice having continuously remained so posted and available for public inspection until the completion of the meeting;

(b) By causing a copy of such Notice, in the form attached hereto as Schedule 1, to be delivered to The Daily Herald on _____, _____, at least twenty-four (24) hours prior to the convening of the meeting; and

(c) By causing a copy of such Notice, in the form attached hereto as Schedule 1, to be posted on the Utah Public Notice Website (http://pmn.utah.gov) at least twenty-four (24) hours prior to the convening of the meeting.

In addition, the Notice of 2017 Annual Meeting Schedule for the City Council (attached hereto as Schedule 2) was given specifying the date, time, and place of the regular meetings of the City Council to be held during the year, by causing said Notice to be (a) posted in _____, at the principal office of the City Council, (b) provided to at least one newspaper of general circulation within the City in _____, and (c) published on the Utah Public Notice Website (http://pmn.utah.gov) during the current calendar year.

IN WITNESS WHEREOF, I have hereunto subscribed my official signature this January 3, 2017.

(SEAL)

By:_____
Cindy LoPiccolo, City Recorder

SCHEDULE 1

NOTICE OF MEETING

SCHEDULE 2

ANNUAL MEETING SCHEDULE

(attach Proof of Publication of
Notice of Public Hearing and Bonds to be Issued)

EXHIBIT B

FORM OF INDENTURE

(See Transcript Document Nos. __ and __)

EXHIBIT C

FORM OF BOND PURCHASE AGREEMENT

(See Transcript Document No. __)

EXHIBIT D

FORM OF PRELIMINARY OFFICIAL STATEMENT

(See Transcript Document No. __)

City Council
Staff Report

Author: **Chelese M. Rawlings, Finance Manager**
Subject: **Budget Amendments**
Date: **January 3, 2017**
Type of Item: **Resolution**

Summary Recommendation: Staff recommends approval of the following by resolution amending the budget for the fiscal year 2016-17.

Description

A. Topic

This is the fourth budget amendment for the fiscal year 2016-2017.

B. Background

On July 19, 2016, September 20, 2016, and November 15, 2016 the first, second, and third budget amendments for FY16-17 were approved. Attached is the detail of the requested budget amendments for the 4th budget amendments.

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 2016-17.

2016-2017 Budget Amendment Supplemental #4						
G/L Account	**Department**	**Description**	**Current FY 2017 Budget**	**New Budget Amount**	**Increase (Decrease)**	**Notes/Comments**
General Fund						
Revenues						
10-3701-955	Administrative Chages	Admin Charge - Storm Drain Fund	(400,134)	(100,034)	300,100	Unfund Allocation from Storm Drain to General Fund
10-3680-255	Other Revenue	Bluffdale Contract	(1,001,000)	(1,100,000)	(99,000)	Per new Bluffdale contract approved December 6, 2016 effective January 1, 2017
10-3493-103	Charges for Services	Wildland Revenue	(85,000)	(185,730)	(100,730)	Increase in revenue for Wildland
10-3130-100	Tax Revenue	Sales and Use Tax	(3,000,000)	(3,300,000)	(300,000)	Budgeted Increase in Sales Tax Revenue
10-3150-100	Tax Revenue	Energy Taxes	(862,500)	(950,000)	(87,500)	Budgeted Increase in Energy Taxes
10-3221-100	Licenses and Permits	Building Permits	(750,000)	(800,000)	(50,000)	Budgeted Increase in Building Permits
10-3356-100	Intergovernmental Revenue	Class "C" Road Fund Allotment	(594,000)	(800,000)	(206,000)	Budgeted Increase in Class C due to a delay in a FY2016 payment
10-3414-100	Charges for Services	Plan Checking Fees	(450,000)	(700,000)	(250,000)	Budgeted Increase in plan checking fees
Expenses						
10-4420-345	Public Works Department	Electrical Lock Boxes	25,280	30,280	5,000	Revenue Received to offset in protective services
10-4215-110	Police Bluffdale	Salaries	410,305	459,715	49,410	Per new Bluffdale contract approved December 6, 2016 effective January 1, 2017
10-4215-130	Police Bluffdale	Benefits	282,285	309,960	27,675	Per new Bluffdale contract approved December 6, 2016 effective January 1, 2017
10-4215-140	Police Bluffdale	Uniform Allowance	10,000	12,200	2,200	Per new Bluffdale contract approved December 6, 2016 effective January 1, 2017
10-4215-305	Police Bluffdale	Consumable Supplies & Electronics	10,000	23,948	13,948	Per new Bluffdale contract approved December 6, 2016 effective January 1, 2017
10-4220-202	Fire Department	Wildland Expenses	-	80,409	80,409	Wildland Expenses offeset by revenue received
Storm Drain Operations						
Expenses						
54-5400-10	Storm Drain Operations	Admin Charge - General Fund	400,134	100,034	(300,100)	Unfund Allocation from Storm Drain to General Fund
					-	
Parks Impact Fund						
Expenses						
32-4000-693	Parks Impact Fund	Shay Park	282,389	60,000	(222,389)	Defund - Project Complete
Roads Impact Fund						
Expenses						
33-4000-741	Roads Impact Capital	400 S Widening Reimb with DR Horton	75,000	212,000	137,000	Reimbursement Agreement
33-4000-736	Roads Impact Capital	Riverside Drive	179,076	45,330	(133,746)	Defund - Project Complete
33-4000-754	Roads Impact Capital	Legacy Farms Reimbursement	212,500	-	(212,500)	Defund - No longer needed
Sewer Impact Fund						
Expenses						
53-4000-783	Sewer Impact Capital	400 South Reimbursement Agree	256,592	318,827	62,235	Professional Contract Services for Sewer upsize plans
53-4000-782	Sewer Impact Capital	North Sewer Outfall Phase II	55,951	1,400	(54,551)	Defund - No longer needed
Water Operations						
Expenses						
51-5100-938	Water Operations	ULD Canal Turnout Pond Rehab	38,706	-	(38,706)	Defund - No longer needed
Culinary Water Impact Fund						
Expenses					-	
new code	Culinary Water Capital	Legacy Farms Reimbursement	-	50,000	50,000	Reimbursement Agreement
56-4000-721	Culinary Water Capital	CUWCD Connection	-	20,000	20,000	North CUWCD Connection

G/L Account	Department	Description	Current FY 2017 Budget	New Budget Amount	Increase (Decrease)	Notes/Comments
Secondary Water Impact Fund						
Expenses					-	
57-4000-801	Secondary Water Capital	ULDC Pump Station	1,900,000	2,050,000	150,000	Secondary Water Project
57-4000-802	Secondary Water Capital	Marina Pump Station	4,592,200	5,792,200	1,200,000	Secondary Water Project
					42,756	

RESOLUTION NO. R17-02 (1-3-17)

A RESOLUTION AMENDING THE CITY OF SARATOGA SPRINGS BUDGET FOR FISCAL YEAR 2016-2017 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 2016-2017 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 2016-2017 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 January, 2017

CITY OF SARATOGA SPRINGS
A UTAH MUNICIPAL CORPORATION

Signed: _____
Jim Miller, Mayor

Attest: _____
Cindy LoPiccolo, City Recorder

Kimber Gabryszak, AICP
Planning Director

Planning Commission
Staff Report

General Plan Amendment
Adopting a Bicycle and Pedestrian Master Plan
Thursday, December 8, 2016
Public Hearing

Report Date:	Thursday, December 1, 2016
Applicant:	Staff and Mountainland Association of Governments (MAG)
Previous Meetings:	Steering Committee Meetings throughout 2015 Planning Commission Public Hearing April 14, 2016 Planning Commission Continued Discussion May 12, 2016 City Council Work Session June 7, 2016
Type of Action:	Legislative
Land Use Authority:	City Council
Future Routing:	Public hearing with City Council
Author:	Kimber Gabryszak, Planning Director

A. Executive Summary:

In 2015, the City received a grant from MAG for a Bicycle and Pedestrian Study. The result of this study is a draft master plan for the City, specifically for bicycle and pedestrian planning and connectivity. The adopted plan will become a standalone element of the General Plan, and will be used in concert with the Parks and Trails Master Plan.

The Planning Commission conducted a public hearing on April 14, 2016, and voted to continue the decision to a future meeting with direction to the consultant on necessary changes. The consultants then made modifications to the plan based on Commission direction, and the Commission reviewed the changes on May 12, 2016. The Council also held a work session on June 7, 2016.

Based on feedback from the Commission and Council, the consultants have spent the last 6 months assembling GIS data on sidewalks to avoid conflicts and inaccurate information, and updating the plan. The consultants have provided all the raw data to Staff, and due to budget constraints will no longer be involved in the project. Staff will make any remaining changes to the plan as directed by the Commission.

Recommendation:

Staff recommends that the Planning Commission conduct a public hearing, discuss the proposed Bicycle and Pedestrian Master Plan, and vote to choose from the options in Section H of this report. Options include a positive recommendation to the City Council on the study with or without modifications, continuance to a future meeting with direction on information or changes needed to render a decision, or a negative recommendation.

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kgabryszak@saratogaspringscity.com

B. **Background:** In 2015 the City received a grant for a Bicycle and Pedestrian study from MAG. After a Request for Proposal (RFP) process, the City selected Fehr & Peers to conduct the study. A steering committee was created composed of Planning staff, Parks staff, Engineering staff, two Planning Commissioners, one City Council member, and a local business owner. The process included:

- community input sessions
- a study website
- a survey to identify community priorities and concerns
- identification of mission statement and goals
- a field trip to see potential infrastructure options in person
- a draft report and initial feedback form the steering committee
- a final draft prepared for the Planning Commission and City Council
- work sessions and public hearing with the Planning Commission
- work session with the City Council

The Planning Commission held a public hearing on April 14, 2016, and reviewed an updated plan on May 12, 2016, and expressed concern over several aspects of the study. The Council also held a work session on June 7, 2016, and provided feedback. In addition to other topics, of particular concern were proposed bicycle parking regulations, and missing or inaccurate trail and sidewalk segements. The applicants have provided an updated plan, along with a document tracking the changes that were made.

Minutes from these meetings are attached.

C. **Specific Request:**

The updated plan is on the City website at www.SaratogaSpringsCity.com under Announcements then Proposed Bicycle and Pedestrian Master Plan. The plan includes goals and objectives for bicycle and pedestrian planning in the City, a background on existing conditions, a summary of public outreach and surveys, and the resulting proposed system improvements and prioritization such as trails, sidewalks, bike parking, crosswalk options, and more. Additionally, unlike many studies where the funding and costs are not adequately addressed, this plan identifies both construction and ongoing maintenance costs, and identifies potential funding sources.

The draft Bicycle and Pedestrian Master Plan will be used in concert with the existing Parks and Trails Master Plan; the Parks and Trails Master Plan is also due for an update, which will occur at a future date when updated park needs are ready. Until then,in case of conflict, this plan will as it was adopted most recently. When the Parks and Trails Master Plan is updated, it is anticipated that one of the following actions will be taken:

- the two documents will merge, with the trails elements of the Bicycle and Pedestrian Plan incorporated, or
- trails will be removed from the Parks and Trails Master Plan, leaving it as a Parks Master Plan only.

PC, Council, and Staff Recommended Changes

Since the work sessions and public hearing this spring, the plan has been modified to address the following:

- Mountain bike connectivity with adjacent cities
- Connectivity with Camp Williams
- Including parking requirements as a reference only (staff is able to remove fully if necessary)

- Restoration of or correction to missing or mislabeled paths & trails (this involved a thorough mapping of sidewalks throughout the city) For example, some changes included:
    - Harbor Parkway has a trail, not a sidewalk
    - Wildlife Blvd has a trail
    - 400 North has a sidewalk
    - Pony Express has a trail
    - Portion of Foothill Blvd was missing
- Adding labels for unlabeled graphics
- Other staff recommendations such as minor wording changes or clarifications, map clarifications, and map combinations

D. **Process:** Section 19.17.03 of the Code outlines the process and criteria for a General Plan amendment:

1. The Planning Commission shall review the petition and make its recommendation to the City Council within thirty days of the receipt of the petition.
   Complies*. There is no application as this is City initiated, and is being presented to the Commission for a recommendation.*

2. The Planning Commission shall recommend adoption of proposed amendments only where it finds the proposed amendment furthers the purpose of the Saratoga Springs Land Use Element of the General Plan and that changed conditions make the proposed amendment necessary to fulfill the purposes of this Title.
   Complies. *Please see Sections F and G of this report.*

3. The Planning Commission and City Council shall provide the notice and hold a public hearing as required by the Utah Code. For an application which concerns a specific parcel of property, the City shall provide the notice required by Chapter 19.13 for a public hearing.
   Complies*. Please see Section E of this report. After the Planning Commission recommendation, a public hearing will be scheduled with the City Council.*

4. For an application which does not concern a specific parcel of property, the City shall provide the notice required for a public hearing except that notice is not required to be sent to property owners directly affected by the application or to property owners within 300 feet of the property included in the application.
   Complies*. Please see Section E of this report.*

E. **Community Review:** Per Section 19.17.03 of the City Code, the April 7, 2016 meeting was noticed as a public hearing in the *Daily Herald*; this current additional hearing was also noticed appropriately. As this amendment affects the entire City, no mailed notice was required.

A public hearing with the City Council will be scheduled and noticed prior to final action.

F. **General Plan:**

Land Use Element
The Transportation section of the General Plan includes goals for both Pedestrian and Bicycle Trails.

PEDESTRIAN TRAILS

GOAL: 1.0 PROVIDE A NETWORK OF PEDESTRIAN TRAILS, INCLUDING SIDEWALKS, WALKWAYS, AND HIKING/JOGGING TRAILS THROUGHOUT THE CITY AS A VIABLE ALTERNATIVE TO AUTOMOBILES.

POLICIES:

1.1 Require installation and maintenance of a continuous, safe, and aesthetically pleasing network of pedestrian trails throughout the City.
1.2 Develop design standards for each type of pedestrian trail to minimizes hazards (e.g. lighting, surface texture, landscaping, automobile pedestrian conflicts).
1.3 Reduce physical barriers for the handicapped who might use these facilities.
1.4 Require sidewalks on both sides of all roads unless facilities for other modes of transportation are planned, particularly on arterial and collector roads.
1.5 Require access for pedestrian traffic to and from all parts of commercial development. This should include bus stops, handicapped loading, crosswalks, traffic signals, sidewalks and roadways.
1.6 Work closely with the Alpine School District in reviewing locations for future schools and bus stops to minimize the necessity of children crossing or waiting for buses on arterial roads.
1.7 Consider maintenance costs in the planning and design of sidewalks, trails, landscaping, and other alternative transportation modes or recreational facilities.

Potential conclusion: consistent. The plan has the goal of a continuous and safe network of pedestrian connections, includes design standards for sidewalks and other pedestrian connections, and has attempted to address ongoing maintenance costs.

BICYCLE TRAILS

GOAL: 1.0 PROVIDE A NETWORK OF BICYCLE TRAILS THROUGHOUT THE CITY.
POLICIES:

1.1 Require installation and maintenance of a continuous and aesthetically pleasing network of bicycle trails throughout the City.
1.2 Provide a balance of each type of bicycle trail, where appropriate, to satisfy the transportation as well as the recreation needs for residents of the City.
1.3 Develop design standards for bicycle trails that will integrate bicycle trails with other modes of transportation and that will be buffered from surrounding land uses for safety.
1.4 Coordinate road improvement projects with construction of bicycle trails.
1.5 Require bicycle trail access to commercial and recreational sites.
1.6 Require bike racks at shopping centers, public buildings, schools, parks, transportation, nodes, etc.
1.7 Enforce State laws and local ordinances concerning the use of bicycles to promote bicycle safety.

Potential conclusion: consistent. The plan includes goals for a continuous network of bicycle trails, attempts to address the needs of multiple user types, has provisions for road and mountain trails, includes design standards, and proposes required bicycle parking, and road cross sections.

G. Code Criteria:

General Plan Amendments are a legislative decision; therefore, the City Council has significant discretion when considering changes to the General Plan, and the Planning Commission in making a recommendation.

The criteria outlined below act as guidance to the Council, and to the Commission in making a recommendation. Note that these criteria are not binding.

19.17.04 Consideration of General Plan, Ordinance, or Zoning Map Amendment

The Planning Commission and City Council shall consider, but not be bound by, the following criteria when deciding whether to recommend or grant a general plan, ordinance, or zoning map amendment:

1. The proposed change will conform to the Land Use Element and other provisions of the General Plan;
   Consistent*. See Section F of this report.*

2. the proposed change will not decrease nor otherwise adversely affect the health, safety, convenience, morals, or general welfare of the public;
   Consistent. *The change, to adopt the proposed plan, will improve health and safety for public users of alternative transportation through enhanced design standards and improved connectivity.*

3. the proposed change will more fully carry out the general purposes and intent of this Title and any other ordinance of the City; and
   Consistent. *The stated purposes of the Code are found in section 19.01.04:*
   1. The purpose of this Title, and for which reason it is deemed necessary, and for which it is designed and enacted, is to preserve and promote the health, safety, morals, convenience, order, fiscal welfare, and the general welfare of the City, its present and future inhabitants, and the public generally, and in particular to:
      a. encourage and facilitate the orderly growth and expansion of the City;
      b. secure economy in governmental expenditures;
      c. provide adequate light, air, and privacy to meet the ordinary or common requirements of happy, convenient, and comfortable living of the municipality's inhabitants, and to foster a wholesome social environment;
      d. enhance the economic well-being of the municipality and its inhabitants;
      e. facilitate adequate provisions for transportation, water, sewer, schools, parks, recreation, storm drains, and other public requirements;
      f. prevent the overcrowding of land, the undue concentration of population, and promote environmentally friendly open space;
      g. stabilize and conserve property values;
      h. encourage the development of an attractive and beautiful community; and
      i. promote the development of the City of Saratoga Springs in accordance with the Land Use Element of the General Plan.

The master plan will help to facilitate orderly growth through complete networks and facilitate adequate provisions for transportation.

4. in balancing the interest of the petitioner with the interest of the public, community interests will be better served by making the proposed change.
   Consistent. *The amendments will enhance the usability of alternative transportation modes in the city, and public users will be both safer and healthier.*

H. Recommendation / Options:

Staff recommends that the Planning Commission hold a public hearing, discuss the updated plan, and vote to forward a positive recommendation to the City Council on the master plan with or without modifications, or choose from the alternatives provided.

Staff Recommended Motion – Positive Recommendation
The Planning Commission may choose to forward a **positive recommendation** on the master plan, as proposed or with modifications:

Motion: "Based upon the evidence and explanations received today, I move to forward a **positive** recommendation to the City Council for the adoption of the proposed Bicycle and Pedestrian Master Plan with the Findings and Conditions below:

Findings:
1. The master plan is consistent with Section 19.17.04.1, General Plan, as outlined in Sections F and G of this report and incorporated herein by reference.
2. The master plan is consistent with Section 19.17.04.2 as outlined in Section G of this report and incorporated herein by reference.
3. The master plan is consistent with Section 19.17.04.3 as outlined in Section G of this report and incorporated herein by reference.
4. The master plan is consistent with Section 19.17.04.4 as outlined in Section G of this report, and incorporated herein by reference.

Conditions:
1. The master plan shall be edited as directed by the Commission: _____
   a. _____
   b. _____
   c. _____"

Alternative A – Continuance
Vote to **continue** the master plan the next meeting, with specific feedback and direction to Staff on changes needed to render a decision.

Motion: "I move to continue proposed Bicycle and Pedestrian Master Plan to the January 12, 2016 meeting, with the following direction on additional information needed and/or changes to the plan:
_____
_____
_____"

Alternative B – Negative Recommendation
Vote to forward a **negative** recommendation to the City Council for the master plan.

Motion: "Based upon the evidence and explanations received today, I move to forward a **negative** recommendation to the City Council for the proposed Bicycle and Pedestrian Master Plan with the Findings below:

Findings

1. The amendments do not comply with Section 19.17.04(1), General Plan, as articulated by the Commission: _____
2. The amendments do not comply with Section 19.17.04, sub paragraphs 2, 3, and/or 4 as articulated by the Commission: _____
3. _____"

I. Exhibits:

1. 4/14/2016 Planning Commission Minutes
2. 5/12/2016 Planning Commission Minutes
3. 6/7/2016 City Council Work Session Minutes
4. Updated Bicycle and Pedestrian Master Plan (also online at www.SaratogaSpringsCity.com)
5. Updated Master Plan Appendices

City of Saratoga Springs
Planning Commission Meeting
April 14, 2016
Regular Session held at the City of Saratoga Springs City Offices
1307 North Commerce Drive, Suite 200, Saratoga Springs, Utah 84045

Minutes

Present:
Commission Members: Kirk Wilkins, Sandra Steele, Hayden Williamson, David Funk, Ken Kilgore, Troy Cunningham, Brandon MacKay
Staff: Sarah Carroll, Kevin Thurman, Nicolette Fike, Gordon Miner, Mark Christensen
Others: Kyle Cook, Stan Steele, Richard Brockmyer, Corey Anderson

Call to Order - 6:32 p.m. by Chairman Kirk Wilkins

1. **Pledge of Allegiance** - led by Kyle Cook

2. **Roll Call** – A quorum was present

3. **Public Input**
Public Input Open by Chairman Kirk Wilkins
No public input was given tonight.
Public Input Closed by Chairman Kirk Wilkins

4. **Public Hearing: Transportation Master Plan Amendment. --- Item Continued to April 28th meeting.**

5. **Public Hearing: Bicycle & Pedestrian Study & Master Plan.**
Sarah Carroll introduced Kyle Cook and Richard Brockmyer, Consultants from Fehr and Peers, who explained some of the details of the project.
Kyle Cook gave an overview of the process they went through for the study. He then noted the vision and goals they had. Continuity was a key goal along with increasing transportation safety and making it a routine component of city planning. He noted some of the things learned from community outreach and surveys that were the basis of the plans that were developed.
Richard Brockmyer reviewed the proposed system improvements and prioritization such as trails, sidewalks, bike parking, crosswalk options, and support facilities. He noted a section of the report dedicated to maintenance costs. He noted the online web map they had developed
Public Hearing Open by Chairman Kirk Wilkins
Cory Anderson asked about bike parking requirements added to the code. He bikes to work every day as do others in his office. He suggested incentives for businesses that allow for bike parking, a reduction in their credits for parking spaces. He notes that people that bike to work don't want to leave their bikes outside; they are too expensive, so he would like a way for them to provide parking inside the building.
Richard Brockmyer commented that there are both short and long term suggested biking requirements.
Public Hearing Closed by Chairman Kirk Wilkins
Sandra Steele asked if they had included Camp Williams in any of their planning (Consultants replied no) because for connectivity they would like to see a trail all the way around the Camp and part of that would go through our community. She asked if they did any studies for mountain biking, more than just the soft trails. She asked if the study indicated how many would bike to work if there were facilities.
Kyle Cook noted that the questions weren't asked in that way but noted that 80% cited lack of complete infrastructure that prevents them from biking and walking. With that you can infer that having the infrastructures and support facilities would help.

Sandra Steele commented that because we are a linear city some of the things that work in other cities may not work with ours. She is concerned about the amount of money that would need to be spent to provide some of the facilities. Developers won't want to provide something that doesn't get used. She thought the code changes were overkill; in Lindon they do a percentage for parking.

Kyle Cook replied that it's common to have a concern about putting undue burden on businesses to provide the racks and things. It's something the City needs to decide how far they want to go. Bike parking alone is not going to really encourage people to bike; it's more a combination of things.

Sandra Steele likes the percentage for public parking spaces that you have. She would like to look at something similar to disabled parking standards, it would look cleaner, not one at every business store front. She understands 50 ft. from the front door but disabled parking needs to take precedence and it should be noted that it should. Sandra asked why is it required to be concrete and noted that Lindon has theirs as a hard surface.

Kyle Cook replied that they would be ok with hard surface.

Richard Brockmyer commented that it's a best practice, putting it on equal footing with parking.

Sandra Steele noted she asked because thinking in the future, if they find they are under-bicycle-parked, it may be easier to put it on asphalt without tearing it up and putting in concrete. She asked when they did measurements if they took into consideration tricycles some seniors and disabled ride.

Kyle said they didn't include those directly, they looked at typical designs, in most instances you could use them for a tricycle too.

Sandra Steele noted when there could be cases of it impeding accessible parking. She noted Lindon did not require covers for outdoor parking; maybe a certain percentage could meet the code. But we need to remember keeping the 80" clearance. Sandra noted when business uses change they would have to meet new code and put in parking. Also it may require wider sidewalks that we may need to start requiring. She asked who would be responsible for lighting, the City or Businesses. She is concerned that it could be considered business un-friendly because of the cost they need to incur. Would big business want to come here or go to another area that didn't require as much? You need to consider the sq. ft. those inside lockers take up. You are paying per sq. ft. per year for that space being taken up. When we get commuter light rail she agrees with more parking there than any other use.

Mark Christensen commented that it is a changing trend especially for the millennial generation and people that like to bike to work. They heard comments earlier tonight to the fact. It's an HR question of how can we provide those amenities for our employees so they can have those opportunities. Having those amenities available will pull in a certain demographic. It's a lifestyle change for the community that will be driven by demand. Human resource practices today are driving a lot of these suggestions.

Sandra Steele thinks the sizes of the business will drive the need.

Mark Christensen said they had this conversation with another developer recently, we don't know what business will come in next as uses can change. Perhaps what is in there today doesn't need it but by not requiring it we've prevented our future from having adequate resources.

David Funk noted that he lived near Portland which is a biking community. It is a great idea to provide indoor facilities and that we ought to reduce their requirement for auto parking. If it converts to another use, they already have the indoor facilities to continue to use. We are definitely a different city than Portland, but we are set up for light rail and biking in the future, so everything should flow to the Redwood Road corridor so it will be easier to pick up a bus or light rail. He is a little concerned about some of the future walking and biking trails. He has found it unfriendly getting between locations currently. He noted three areas he was concerned about on the map. One was where Foothill Blvd. meets with Pioneer Crossing (an area where an accident has occurred). A second area was the high school on the east side. (It was clarified that there was a sidewalk from the high school east to Redwood Road.) Third he was looking at near the new Smiths and Pioneer Crossing, especially from the high school over to that area. He noted Jordan river Parkway is something a lot of people like to use and as many parts of the city as possible should be connected to that. He sees the two most important areas to provide connectivity to are Redwood Road corridor and Jordan River Parkway Trail.

Mark Christensen noted when D.R. Horton finishes the phases in Legacy Farms; one of them will include a widening and expansion of 400 South that will help provide that connectivity.

Hayden Williamson would be opposed to requiring bicycle parking. There are compelling reasons why business would want parking and then we don't need to mandate it. They should decide if they need it. He would be in favor of incentivizing or letting them substitute some bike parking for regular parking.

Troy Cunningham commented that a few of his avid cycling friends like the bike plans. Cyclists want connectivity and places to stop along the way to eat or rest. He looked at bike lockers in other areas. He wonders whether or not businesses may find this unfriendly and would be in favor of some sort of offset for parking.

Ken Kilgore asked if we were to put the plan in place how it would influence UDOT to getting things built.

Gordon Miner noted it's a cooperative effort with UDOT, we express our desires and they try to accommodate as best they can.

Mark Christensen commented that for non-motorized things there are different grants and funding we can look at. MAG has some grants we could use. We definitely have a need for it and we will be looking at a lot of different funds for it. The more we do that puts structure in place, it will give us leverage to look for partners. When we go to MAG for funding it's about tying the right funding to the right project. The Redwood Road expansion is different. But the trail from Pioneer Crossings to Legacy Farms is going to be a conversation they are having. Having these plans in place will help prioritize this.

Gordon Miner noted that at the next meeting the Master Transportation Plan will be presented and they can see some of the plans there.

Sarah Carroll noted that they do have a Master Plan that is a tool when they are coordinating with them. She noted the path under Pioneer Crossing that was able to be added because they had that on their master plan. When we have bike trails shown on our plans and we are able to show that as priority it helps. We do have employees that like to bike and they have commented on the connectivity, as that improves you will see more bikers as the safety and convenience rises.

Mark Christensen noted it's a lifestyle a lot of people are moving towards. We are going to have to meet it from an HR standpoint. We need to start down the path and continue to make incremental changes. But if we don't have the connectivity then we are never going to make the steps. As we add more and more bike lanes and trails we will see it used more.

Hayden Williamson asked if we had any indication of what percentage of the residents would bike if they felt the right circumstances were in place.

Kyle Cook replied that those that were interested in taking the bike survey are those that are interested in biking to begin with. They can't say for sure. But the majority of the respondents noted that being outdoors and healthy were of interest.

Richard Brockmyer commented that about 80% of the population was interested but concerned. There is a percentage that will never bike no matter what, but a large percentage right now that this plan is focused on, are interested but don't feel safe with the conditions now.

Mark Christensen commented that this is looking forward and as we can build these modes of transportation it may help draw different types of employers here.

Ken Kilgore commented on the cross sections, has it been studied that it's actually a safer design.

Richard Brockmyer says there is literature that supports that more separation is better especially at higher speeds.

Kyle Cook mentioned it's less about space and more about volume and level of comfort that comes with that.

Ken Kilgore just wants to make sure that whatever we put in is indeed safer.

Kyle Cook responded that the most important thing is to provide that space. The white line is not going to stop an errant driver but you can decide what you want to do with that space like curb.

Richard Brockmyer noted that at a certain point it's better to totally separate it.

Gordon Miner noted the general idea is about separation. On freeway it's 12 feet on a local street it can be down to 10 feet. The concept here is just the higher volume of vehicles the more separation.

Ken Kilgore agrees with the concerns about cost to business when requiring parking. But sees a different way than Commissioner Williamson that yes we want our city to be bicycle friendly. He noted how it didn't hurt business in cities where it became a priority, like Portland. As for locker facilities, he thinks we can encourage it, but be sensitive to types of businesses. If it's not high tech offices it may not be necessary. Because of the way Saratoga is laid out it may be a very good place for biking.

Brandon MacKay noted that for his business in order to attract millennials you need to have these types of amenities. He commented on the need for soft trails and mountain biking. It has tons of possibility here in Saratoga. He noted he just had lunch with the School Bike team and it's the highest growth sport in the state. The high school here has the second largest team in Utah. Soft trail single track would make Saratoga a destination. Due strictly to the topography here it's a great opportunity for an attraction point in the City and a great place for our youth. Mountain biking is a great youth sport to provide a life of opportunity.

Kirk Wilkins noted that Eagle Mountain has some great trails and he would like to see some connectivity to that. He asked if we would do anything with bike locks, we have to accommodate it. He likes the idea that we don't increase the huge requirements for businesses without a tradeoff.

Sandra Steele noted on Riverside dr. there are roundabouts, when you come to those the bike trails have a concrete stop where you have to come back out into traffic. Perhaps there should be some type of mechanism where the bike lane would be continuous.

Mark Christensen noted those were designed specifically to slow traffic down. There is some inherent sharing of the road. At the point of full build out it may need to be addressed further.

Sandra Steele thinks we may need to look at standards for roundabouts in the future that include this. Along the lake for connectivity, she noted homes that had not put in hard surface trails. We need some way that our teams look for the trails in the individual custom homes that were required.

Sarah Carroll noted at the next meeting they will be seeing the update to the Transportation Master Plan and there are some different alignments on there that don't necessarily coordinate with the maps you are seeing tonight so staff recommended a condition that those coordinate with the upcoming Master Transportation Plan.

Hayden Williamson asked about maintenance cost and wanted an idea of what it was.

Kyle Cook noted typical costs for plowing, sweeping, resurfacing. It took into account centerline distance at build out, hard or soft surfaces, distance, facility types, and typical unit cost for maintenance at build out.

Mark Christensen noted the amount typically used on trail maintenance. He also mentioned a lot of the network hubs they are looking at are state budgeted, a lot of trails are maintained by HOA's also.

Hayden Williamson said this is money coming out of our pocket so we do need to be careful.

Sarah Carroll mentioned that they need to make a motion on this tonight and reviewed conditions. There are two suggested conditions:

a. The bicycle parking code shall be removed and replaced with a paragraph identifying required bike parking is a general goal, and staff shall be directed to return later with a revised code amendment reflecting appropriate parking requirements.

b. A revised Transportation Map is scheduled for a public hearing with the Planning Commission April 28th, road locations on the maps within the Bicycle And Pedestrian Map shall be updated to reflect the revised Transportation Master Plan.

Sandra Steele wants to continue this because there are some issues but would comment that City Council should see this also for a work session because they will have things to look at.

Kevin Thurman noted that they can't direct that Council have a work session but staff could speak with City Council to see if they are interested in a work session on this issue.

Ken Kilgore is ok with the Master Plan but perhaps there are issues with the code.

Sandra Steele is not ok with the Master Plan, there are some omissions that have been made, that she commented on earlier.

Motion made by Hayden Williamson to Table the Bicycle and Pedestrian Study and Master plan until after staff has had a Work Session with City Council and come back to us with updates based upon comments we made today and comments that Council will make. Seconded by Troy Cunningham.

David Funk is concerned that they are saying that staff has to meet with City Council with a work session. We can't tell them they have to do that.

Mark Christensen said they can suggest, but it's City Council's meeting to decide.

Ken Kilgore thinks a lot of these are just details that don't seem to need a whole work session. Shouldn't we be able to decide this, it's either obvious or not that it's important. We should be able to work it out

ourselves and not ask City Council before be decide. Perhaps we need to approve the Plan and not the code yet. Why does it require City Council to look at before we decide?

Hayden Williamson feels that he is in favor of tabling it and having City Council look at it in a work session. He feels it should have come to us first as a work session then they could do the work and come back to us. He thinks tonight should be considered as a work session.

Kevin Thurman suggested that they make their recommendation. It is a legislative communication.

Kirk Wilkins asked if Commissioner Williams would consider amending the motion to reflect that we feel more to continue it to have more time to consider it.

Ken Kilgore believes we should give City Council a clear recommendation.

Kevin Thurman also recommends that they give a recommendation.

The Motion was Amended by Hayden Williamson: To continue the Bicycle and Pedestrian Study and Master Plan to a future date as determined by staff.

The Amendment was accepted by the Second, Troy Cunningham.

Sarah Carroll asked if they wanted to give specific direction, or just everything they have discussed.

Hayden Williamson said everything they have discussed.

(1. Review the items discussed by the Planning Commission today.)

Aye: Sandra Steele, David Funk, Hayden Williamson, Kirk Wilkins, Ken Kilgore, Troy Cunningham, Brandon MacKay. Motion passed 7 - 0.

6. Work Session: Code Amendments for Large Lot Landscaping.

Sarah Carroll reviewed the Code amendments. Due to increased code enforcement, issues have arisen with the landscaping of large lots. With larger than ½ acre lots complete landscaping may not make sense as the native landscaping on the lots matches well with existing native landscaping along the road. The Planning Commission previously discussed allowing large lots to only landscape a portion of their lot and also expressed concern over inequity of water rates. The proposed amendment is to: Amend single-family landscaping standards to address large lots and require all lots over ½ acre to landscape at least ½ acre, and all lots under ½ acre to completely landscape.

Ken Kilgore commented that most of the complaints have been that many of the larger lots (1-5 acres) are not meeting the requirement. So if we add this in it doesn't necessarily take care of the complaints. He wondered about grandfathering.

Sarah Carroll replied that currently we are requirement the whole lot so there wouldn't be any grandfathering but it would change the enforcement to just ½ acre.

Kevin Thurman noted that this is less restrictive than currently. For a grandfathered use you would have had to meet the old code at some point.

Kirk Wilkins asked the size of lots were that had complaints.

Sarah Carroll replied they were 1-5 acres.

Troy Cunningham mentioned one resident got a fine for his yard not being landscaped but it was due to the fact that the flood wiped out his landscaping.

Ken Kilgore remembered that there was an extension created to help in those situations.

Sarah Carroll said there is an extension request where people can explain their situation and it can be taken into consideration.

Mark Christensen remarked that this is a legitimate question for people, what are they required to maintain. There is an equity question and it's a legislative decision more than a staff recommendation issue. We do need clarification as we deal with it as a staff for enforcement.

Kirk Wilkins asked where the ½ acre came from.

Mark Christensen noted it started with ⅓ and some felt they should have to do more.

Ken Kilgore noted ⅓ put undue burden on the small guy and not let the bigger lots pay their fair share.

Kirk Wilkins would like to see the data, how many properties are above ½ acre or ⅓

Mark Christensen noted that for those that have the large lots it's a big issue. It can be a lot of land to take care of.

City of Saratoga Springs
Planning Commission Meeting
May 12, 2016
Regular Session held at the City of Saratoga Springs City Offices
1307 North Commerce Drive, Suite 200, Saratoga Springs, Utah 84045

Minutes

Present:

Commission Members: Kirk Wilkins, Sandra Steele, Hayden Williamson, David Funk, Ken Kilgore, Troy Cunningham, Brandon MacKay

Staff: Kimber Gabryszak, Planning Director; Mark Christensen, City Manager; Sarah Carroll, Senior Planner; Jamie Baron, Planner; Kevin Thurman, City Attorney; Gordon Miner, City Engineer; Nicolette Fike, Deputy Recorder; Jess Campbell, Fire Chief

Others: Peter Simmons, Ken Evans

Call to Order - 6:30 p.m. by Chairman Kirk Wilkins

1. **Pledge of Allegiance** - led by Hayden Williamson

2. **Roll Call** – A quorum was present

3. **Public Input**
   Public Input Open by Chairman Kirk Wilkins
   No input was given.
   Public Input Closed by Chairman Kirk Wilkins

4. **Public Hearing: Site Plan and Conditional Use Permit for Pro Split Pea, located 1461 North 400 East, Technology Associates, applicant.**
   Jamie Baron presented the application. This is a request for Site Plan and Condition Use Permit (CUP) approval for the purpose of constructing a 96' cellular tower on the property located at 1461 North 400 East. They are proposing a chain link fence with barbed wire and slats. Condition 3 has been met with a recent change that meets the 25' setback. It was recommended to pay attention to the code criteria section of the staff report, namely increased setback distance for safety and relating to the appearance and harmony with adjacent development.
   Peter Simmons representing the applicant was present to answer questions.

   Public Hearing Open by Chairman Kirk Wilkins
   No public input was given.
   Public Hearing Closed by Chairman Kirk Wilkins

   Hayden Williamson was fine with the setbacks as they currently are but in some point in the future the tower could be an eyesore. He asked what the process was for changing the appearance in the future. Peter Simmons commented that when they approved the CUP that is the way it would be, they couldn't go back and redesign it. He noted that stealth designs are possible but often they stand out even more, are more of an eyesore, than a regular tower would that blends with existing power lines.

   Ken Kilgore asked if there were other cell towers similar to this situation, he wondered how the setback compared. Peter Simmons replied with several examples that were comparable. Peter Simmons also advised that no restructuring of the land would be needed and that they would have a backup generator.

   David Funk received clarification that the fence would be 6'.

Sandra Steele asked why the fence was 20' back. Peter Simmons replied that it was for drive access and would be maintained. Sandra Steele doesn't like chain link with barbed wire near residential areas. She asked about using other types of fencing. Peter Simmons replied they had done other types of fencing and have had concerns about CPTED issues where someone could hide behind the fence. The police usually prefer to keep the fences that can be seen through. He believes the chain link with barbed wire is a higher deterrent.

Kirk Wilkins noted that the current fence design was permitted in this use. He thought the slats could be a color to match the neighboring residential fence. He asked what the commissioners thought about increasing the setback; all felt it met the current qualifications as proposed.

Motion made by Hayden Williamson to forward a positive recommendation of the Pro Split Pea Site Plan and CUP as outlined in Exhibit 4 with the Findings and Conditions in the Staff Report dated May 5, 2016. With the additional condition that the color of the slats in the chain link fence be consistent with the neighboring residential neighborhood as verified by Staff. Seconded by David Funk. Aye: Sandra Steele, David Funk, Hayden Williamson, Kirk Wilkins, Ken Kilgore, Troy Cunningham, Brandon MacKay. Motion passed 7 - 0.

5. **Continued Item from April 14, 2016: Bicycle & Pedestrian Study & Master Plan.**

Kimber Gabryszak apprised the commission that most of the items from Planning Commission discussion have been addressed. Exceptions are Mountain Biking, which she will follow up with them on; and the Camp Williams trail which plans they don't have access to, we can show connectivity up to that future trail and to Eagle Mountain. She addressed bicycle parking; the ordinance is draft only and will be adjusted as needed by staff. It is an option that can be pulled out. There was some confusion on the bike lane for Foothill Blvd. there will be a sidewalk also but not a separate trail. In response to questions from Sandra Steele, she replied that the bus stop connections were handled by this plan and also City Council would be having their own work session on this item.

Sandra Steele was not comfortable approving until it was all correct.

Ken Kilgore noticed that this does not seem to address tricycles and that most cities have larger stalls for bikes than is being recommended here, in which case we are not accommodating for tricycles. He noted many tricycles in the Park City area.

David Funk was concerned that some trails are not marked and some trails marked are not there, it does not appear to be accurate.

Motion made by Hayden Williamson to continue the bicycle and pedestrian Master Plan to a future meeting. Seconded by David Funk. Aye: Sandra Steele, David Funk, Hayden Williamson, Kirk Wilkins, Ken Kilgore, Troy Cunningham, Brandon MacKay. Motion passed 7 - 0.

6. **Work Session: Setback Code Amendments.**

Sarah Carroll said they had wanted to eliminate redundancies and inconsistencies in the document. There are some specifying landscaping requirements for non-residential uses in residential zones. Other items include distinguishing requirements for different residential options in the R-6 and higher zones. She reviewed the proposed changes. She reviewed changes in each section as listed in the staff report.

In discussing Residential areas Hayden Williamson was concerned that with a minimum lot size for single family in R10 the minimum lot size would force you to do multifamily because you couldn't get 10 single family homes in that area. Staff replied that it would probably be a more practical use or a mixture could happen. Sandra Steele asked if there was anything that said they could not fence in any area that is common area. Sarah Carroll replied they did not; they would follow up with and look at differentiations.

CITY OF SARATOGA SPRINGS
CITY COUNCIL MEETING MINUTES

Tuesday, June 7, 2016
City of Saratoga Springs City Offices
1307 North Commerce Drive, Suite 200, Saratoga Springs, Utah 84045

City Council Work Session

Call to Order: 5:35 p.m. by Mayor Pro Tem Stephen Willden

Present: Council Members Bud Poduska, Shellie Baertsch, Stephen Willden, Chris Porter, and Michael McOmber.
Mayor Jim Miller arrived 5:43 pm

Staff: City Manager Mark Christensen, City Attorney Kevin Thurman, Assistant City Manager Spencer Kyle, Planning Director Kimber Gabryszak, Public Relations Economic Development Manager Owen Jackson, City Engineer Gordon Miner, Assistant Public Works Director George Leatham, City Recorder Cindy LoPiccolo

Future Agenda Items/Issues.

City Manager Christensen reported staff is prepared to address the current water system issue in the southern part of the City and provide information to the public, a temporary water purchase agreement with Central Utah Water has allowed the City to connect to the Central Utah system, staff is working to stabilize the system, and Central Utah Water agreement amendments will be presented to Council as a temporary emergency provision for water this summer should the need arise.

City Manager Christensen reported the City will contract to receive 50 af of water next summer with the goal to construct the City's water project this year. In response to Council Member Baertsch, City Manager Christensen advised the firm of Hansen Allen & Luce has the design contract for the Utah Lake water project, this is scheduled for design, bid and construction this summer, and to be ready next spring. Staff is arranging a water seminar with the consultant during the Council retreat tentatively scheduled for July 12, this will include long-term strategy and upon Council direction a public informational meeting may also be scheduled.

City Manager Christensen reported a joint City Council and Planning Commission meeting is also being arranged; Planning Director Gabryszak advised the new General Plan consultant will be present and receive direction.

Bicycle and Pedestrian Study Master Plan (Continued from May 17, 2016). This plan when adopted will become a standalone element of the General Plan, used in concert with the Parks and Trails and Transportation Master Plans.

Planning Director Gabryszak introduced the draft Bicycle and Pedestrian Study Master Plan, noting there have been no changes in the information presented at the last meeting. Director Gabryszak reported staff is working with the consultant to address concerns in regard to proposed bicycle parking regulations, mountain bike connectivity with adjacent cities, and working in addition with GIS to correct mapping, and integration of bus and transit future locations.

Council Member Porter noted this is a useful plan for the City and recommended care be taken to not overstep regulations.

Council Member Willden commented he is also not in favor of parking regulation and noted it appears that code section will be removed, supports incentives, and appreciates the work on the plan.

Council Member McOmber commented he was familiar with the proposed plan having served on the committee, this document provides clarity and safety standards for the public, noted the City's survey showing 75% saying the City's biking conditions are fair or poor and 50% ride at least a few times a week or more, the City lost a bicycle race event due to unsuitable conditions in the south, however, improvements will be made in conjunction with UDOT, and strongly recommended bicyclist left turn boxes on major highway interchanges.

City Manager Christensen reported staff is working with UDOT in regard to the Redwood Road widening project, identified the current connecting trails noting the City is a few small properties away from having a continuous trail the entire length of the City.

Council Member Poduska recommended a policy in regard to snow removal and provision for cross country skiing on trails off of the highway.

Council Member Baertsch concurred with Council Member McOmber, does not want to impose excessive regulation or hinder economic development with inappropriate mandates on businesses noting many provide employees with bike amenities, recommended allowing winter recreation on soft trails with snow removal on some of the hard surface trails, and inclusion of a trail maintenance report on the City's app to identify cleared trails in the winter.

Adjournment: The Work Session adjourned at 6:00 p.m. to the Policy Session.

Policy Meeting

Call to Order: Mayor Jim Miller called the Policy Session to order at 6:02 p.m.

Roll Call:

Present: Council Members Chris Porter, Stephen Willden, Michael McOmber, Bud Poduska, and Shellie Baertsch.

Staff Present: City Manager Mark Christensen, City Attorney Kevin Thurman, Assistant City Manager Spencer Kyle, Police Chief Andrew Burton, Fire Chief Jess Campbell, Planning Director Kimber Gabryszak, Finance Manager Chelese Rawlings, Economic Development/Public Relations Manager Owen Jackson, City Engineer Gordon Miner, Human Resources Specialist Holly Neibaur, City Planner Jamie Baron, Assistant Public Works Director George Leatham, City Recorder Cindy LoPiccolo

Invocation by Council Member McOmber.
Pledge of Allegiance Scout Michael Morris, Troop 1034.

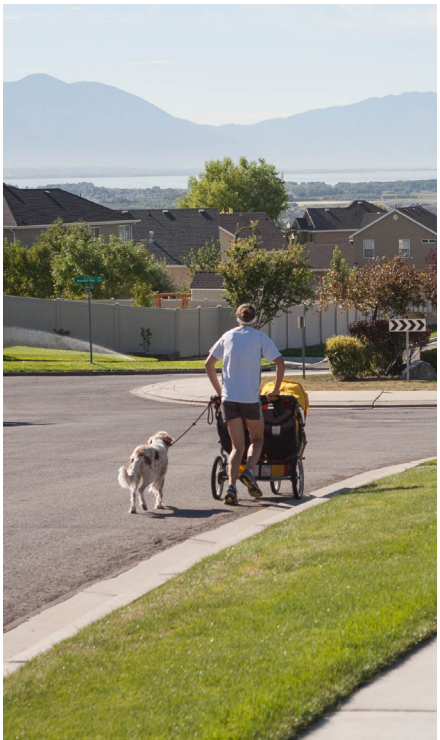
Public Input:

Michael Morris, eleven year old Scout, Harvest Hills, as part of his work on his citizenship in the community merit badge, presented information and a petition containing 222 signatures requesting the City make a cemetery a high priority. Scout Morris reported he met with City staff and outlined the importance of a local cemetery, possible means for obtaining property, the public benefit and honor of military veterans. Mayor Miller and Council thanked Scout Morris and expressed appreciation for his work, involvement and information.

POLICY ITEMS:

REPORTS:

Mayor Miller reported he and Council Member Baertsch attended the Mountainland Association of Governments (MAG) meeting last Thursday evening; requested staff investigate and clarify with the County Attorney in regard to retaining a seat on the Sewer Board; reported Tour de Utah visited with the City, Council



SARATOGA SPRINGS
BICYCLE & PEDESTRIAN MASTER PLAN

Bicycle & Pedestrian Master Plan

September 2016

Prepared by

FEHR PEERS

alta PLANNING + DESIGN

CITY OF SARATOGA SPRINGS

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acknowledgements

Project Steering Committee

Kimber Gabryszak	Saratoga Springs, Planning Director
Jim Price	Mountainland Association of Governments
Mark Edwards	Saratoga Springs, Capital Facilities Manager
Jeremy D. Lapin	Saratoga Springs, City Engineer
Sarah Carroll	Saratoga Springs, Senior Planner
Rick Kennington	Saratoga Springs, Parks Supervisor
Kirk Wilkins	Saratoga Springs, Planning Commission
Hayden Williamson	Saratoga Springs, Planning Commission
Michael McOmber	Saratoga Springs, City Council
Mark Chesley	Saratoga Springs, Building Official
Heston Williams	Saratoga Springs, Recreation Director
David Funk	Saratoga Springs, Planning Commission

Consultant Team

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chapter one

introduction

Bicycling and walking are increasingly recognized as an important component of the transportation system. The Saratoga Springs Bicycle and Pedestrian Master Plan (the Plan) sets forth a vision and goals and policies for walking and bicycling in Saratoga Springs:

"Saratoga Springs will create healthy and vibrant communities through the creation of attractive and safe bicycle and pedestrian networks that can be enjoyed for recreation and transportation."

The Plan serves as a guide for elected officials, City staff, and Saratoga Springs residents to implement infrastructure necessary to achieve the Plan's vision. The Saratoga Springs Bicycle and Pedestrian Master Plan does this by proposing a system of bikeways, sidewalks, and trails connecting neighborhoods to key activity centers throughout the City, developing support facilities, and by identifying recommendations for monitoring the implementation of the Plan.

Bicycle and Pedestrian Master Plan Overview

This is Saratoga Spring's first ever Bicycle and Pedestrian Master Plan. Previously, all bicycle planning and policy was contained within the City's General Plan or in the Trails Master Plan.

The development of the Plan comes as part of an effort by the City to address local and regional desires to enhance the viability of active transportation as mode of transportations, enhance the local quality of life, and reduce transportation system impacts on local communities.

The goals, policies, and recommendations in this Plan are the of a public outreach effort by the Project Team. Between June and December 2015, the City and consultant team accepted public input to the Plan at one public event and through an on-line survey and on-line web application. Additionally, a public website and Facebook broadcasted the latest news related to the Plan.

Making the Case for Investment

Walking and bicycling are effective ways for people to improve their health and wellbeing. But the benefits of active transportation go beyond the health of the individual. A growing body of research shows that active transportation can also benefit the environment and improve the transportation network. The addition of active transportation infrastructure can even boost economic viability in the places where it is located. A short summary of research regarding the benefits of active transportation infrastructure is provided below.

Air Quality

- Research indicates that transportation accounts for roughly 28 percent of the United States' total greenhouse gas (GHG) emissions[1]. Of commuting modes, automobiles have the largest impact on air quality[2]. Bicycling and walking have a negligible GHG impact (outside of the production needed in the manufacturing of the bicycle).
- The Rails To Trails Conservancy estimates that bicycling and pedestrian travel can offset between 3 percent and 8 percent of GHG emissions in the United States caused by surface transportation[3].
- Many state applications for Congestion Mitigation and Air Quality Improvement Program (CMAQ), a federal funding program, ask applicants to estimate the congestion and GHG reduction potential of their bicycle and pedestrian projects. A federal review of CMAQ bicycle and pedestrian projects found CO_2 reductions of up to 38.4 kg emissions reductions each day[4].

MAKING THE CASE

According to research conducted in the Portland area, every 1% increase in miles traveled by active transportation instead of by car reduces regional greenhouse gas emissions by 0.4%.

Reduced Vehicle Miles Traveled

- Many trips regularly done by car can be done by bicycle. The national average trip length is 2.25 miles for a one-way bicycling trip. Half of all trips taken in the United States are three miles or less, with 40 percent under two miles. However, 90 percent of trips fewer than three miles are taken by car[5].
- A study in King County, Seattle, WA found that a 5 percent increase in walkability of a community reduced vehicle miles traveled per capita by 6.5 percent and increased time spent in physically active travel by 32.1 percent[6].

---

[1] Moving Cooler Steering Committee. Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions. Prepared by Cambridge Systematics, Inc. July 2009.
[2] Urban Transportation Caucus. *Urban Transportation Report Card*. August 2007. Accessed online June 2013: http://www.transalt.org/files/newsroom/reports/Urban_Transpo_Report_Card.pdf
[3] Oregon Metro. *The Case for Active Transportation*. Spring 2009. Accessed online June 2013: http://library.oregonmetro.gov/files//case_for_at.pdf
[4] Ibid.
[5] America Bikes and the League of American Bicyclists. *National Household Travel Survey – Short Trips Analysis.* Accessed online June 2013: http://www.bikeleague.org/content/national-household-travel-survey-short-trips-analysis
[6] Frank, L. D., J. F. Sallis, T. L. Conway, J. E. Chapman, B. E. Saelens and W. Bachman (2006). "Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index, and Air Quality." Journal of the American Planning Association 72(1): 75-87

Increased Bike Commuting

- Each additional mile of bicycle lane per square mile is correlated with an approximate one percent increase in the share of bike-to-work trips[7].
- Cities with higher levels of bicycle infrastructure (lanes and paths) also saw higher levels of bicycle commuting[8].
- The construction of a bicycle and pedestrian bridge in Charleston, South Carolina led to more cycling throughout the City. A survey conducted on trail use showed that 67 percent of users claimed their physical activity had increased since the path opened[9].

MAKING THE CASE

An analysis of Portland, Oregon's bicycle infrastructure on health savings shows that completion of their 2030 Plan would help the City save $800 million due to fuel cost savings, health care savings, and the value of reduced mortality.

Health Benefits

- Communities with higher rates of bicycling and walking have lower obesity rates than communities with lower levels of active transportation[10].
- Researchers from Harvard University found that bicycling for as little as five minutes each day can prevent weight gain for middle aged women[11].
- The National Institutes of Health have shown that people are more likely to consistently ride a bicycle or walk than to maintain a gym-based exercise program[12].
- Commuters using active transportation modes are happier with their commutes[13].
- People who use active transportation to commute report fewer days of work missed due to illness than those with non-active commutes[14].

---

[7] Dill, Jennifer and Carr, Theresa. "Bicycle Commuting and Facilities in Major U.S. Cities: If you build them they will come – another look." Accessed online June 2013: http://www.des.ucdavis.edu/faculty/handy/ESP178/Dill_bike_facilities.pdf).

[8] Dill, Jennifer and Theresa Carr. (2003). Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Them They Will Come – Another Look Transportation Review Board 2003 Annual Meeting. http://www.des.ucdavis.edu/faculty/handy/ESP178/Dill_bike_facilities.pdf

[9] "Wonder's Way Bike Pedestrian Pathway on the Arthur Ravenel, Jr. Bridge: A Successful Model for Facilitating Active Living in Lowcountry South Carolina" (http://media.charleston.net/2009/pdf/crbpathstudy_032609.pdf).
[10] "Walking and Cycling to Health: A Comparison of Recent Evidence from City, State, and International Studies" (http://www.cfah.org/hbns/archives/viewSupportDoc.cfm?supportingDocID=943).
[11] "Bicycle Riding, Walking, and Weight Gain in Premenopausal Women" (http://archinte.ama-assn.org/cgi/reprint/170/12/1050).
[12] "Randomised controlled trials of physical activity promotion in free living populations: a review" (http://www.ncbi.nlm.nih.gov/pubmed/7499985).

[13] "Like commuting? Workers' perceptions of their daily commute" (http://www.statcan.gc.ca/pub/11-008-x/2006004/pdf/9516-eng.pdf).

[14] "Physical activity, absenteeism and productivity: an Evidence Review" (http://www.tfl.gov.uk/assets/downloads/businessandpartners/Physical-activityabsenteeism-and-productivity-evidence-review.pdf).

- A study by the National Institutes of Health determined that physically active employees incurred approximately $250 less in health care costs annually compared to sedentary employees[15].

Transportation Safety

- There is safety in numbers. The walking/bicycling crash risk decreases as walking/bicycling rates increase[16].
- The National Institutes of Health found that for every 100 percent increase in the number of cyclists, the number of fatalities only increases by 25 percent, thus reducing the overall risk of cycling by 37 percent[17].
- The presence of bike lanes have been shown to reduce the overall crash rate by 18 percent compared to streets without any bicycle facility[18].

Economic Benefits

- The combined potential value of bicycling in Wisconsin totals nearly $2 billion yearly[19].
- It's been estimated that the entire bikeway network of Portland, Oregon was built for less than the cost of constructing one mile of urban freeway[20].
- There is a 12.5 percent increase in productivity of employees who exercise as compared to those who do not exercise[21].
- A survey of residents along bicycle boulevards indicated that the majority of respondents felt that bicycle boulevards have had a positive impact on home values, quality of life and sense of community, along with reducing noise, improving air quality, and providing convenience for bicyclists. Additionally, 42 percent of respondents said living on a bicycle boulevard makes them more likely to bike[22].
- Installation of bike lanes and bike racks can have a positive influence on the local economy. Fort Worth, Texas spent $12,000 to purchase 80 bike racks and $160,000 on local road diets in one district in town. As a result, local restaurants experienced a 200 percent increase in business[23].

---

[15] "Relationship of body mass index and physical activity to health care costs among employees" (http://www.ncbi.nlm.nih.gov/pubmed/15167389).
[16] Source: "Safety in numbers: more walkers and bicyclists, safer walking and bicycling" (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1731007/pdf/v009p00205.pdf).
[17] Source: "An expert judgment model applied to estimating the safety effect of a bicycle facility" (http://www.ncbi.nlm.nih.gov/pubmed/10868762).
[18] "Adult Bicyclists in the United States: Characteristics and Riding Experience in 1996" (http://www.enhancements.org/download/trb/1636-001.PDF).
[19] Gabrow, Maggie, Micah Hahn, Melissa Whited. (2010). Valuing Bicycling's Economic and Health Impacts in Wisconsin. The Nelson Institute for Environmental Studies and the The Center for Sustainability and the Global Environment. University of Wisconsin-Madision. Prepared for Representative Spencer Black.

[20] http://www.politifact.com/oregon/statements/2011/mar/19/samadams/

portland-mayor-sam-adams-says-portlands-spent-its-/
[21] Campbell, Richard and Wittgens, Margaret. (2004). The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling. Prepared for Better Environmentally Sound Transportation.
[22] VanZerr, Mariah. (2009). Resident Perceptions of Bicycle Boulevards: A Portland, Oregon Case Study. Submitted to the Transportation Research Board for the 89th Annual Meeting.
[23] Elly Blue's Bikenomics series: http://grist.org/biking/2011-04-11-the-economic-case-for-on-street-bike-parking/

Impacts on Home Values

- The walkability of an area can directly impact home values. Homes with above average levels of walkability are worth $4,000 to $34,000 more than homes with average levels of walkability in the areas studied. Typically, a one point increase in Walk Score was associated with between a $500 and $3,000 increase in home value[24].
- The Urban Land Institute compared four new pedestrian communities to determine the effect of walkability on home prices. They determined that homebuyers were willing to pay $20,000 more for homes in walkable areas compared to similar homes in surrounding areas[25].
- For developers, walkability translates into direct economic benefits. In Washington, buildings in neighborhoods with good walkability command an average of $8.88/sq. ft. per year more in office rents and $6.92/sq. ft. per year higher in retail rents, and generate 80 percent more in retail sales as compared to places with fair walkability, holding household income levels constant. Housing prices and property values are also increased in areas with higher walkability – a place with good walkability, on average, commands $301.76 per month more in residential rent and has for-sale residential property values of $81.54/sq. ft. more relative to places with fair walkability, holding household income levels constant[26].
- Adjacency to trails can also have a positive effect on property values. For instance, according to the Rails to Trails Conservancy, lots adjacent to Wisconsin's Mountain Bay Trail sold for 9 percent more than similar properties not adjacent to the trail[27].
- In Apex, North Carolina, houses adjacent to a regional greenway sold for $5,000 more than houses in the same subdivision that were not on the greenway[28].

Job Creation

- A national study of employment impacts following the installation of bicycle and pedestrian infrastructure estimated that each $1 million in bicycle-related projects creates 11.4 jobs from direct, indirect and induced construction spending. Likewise, pedestrian-only projects create about 10 jobs and multi-use path projects create 9.6 jobs per $1 million of project coStreet Projects that combine pedestrian and bicycle facilities with other road improvements create 7.8 jobs per $1 million. In contrast, road-only projects generated 7.75 jobs per $1

MAKING THE CASE

Bike lanes reduced the risk of fatalities in pedestrian-involved crashes by 40%. (Source: The New York City Pedestrian Safety Study and Action Plan)

[24] CEOS for Cities. *Walking the Walk*. August 2009. Accessed online June 2013: http://blog.walkscore.com/wp-content/uploads/2009/08/WalkingTheWalk_CEOsforCities.pdf
[25] Eppli, Mark J. and Charles C. Tu. Valuing the new Urbanism, The Impact of the New Urbanism of Prices of Single-Family Homes. Urban Land Institute, 1999.
[26] Leinberger, Christopher B. and Mariela Alfonzo. (2012). Walk this Way: The Economic Promise of Walkable Places in Metropolitan Washington, D.C. The Metropolitan Policy Program at the Brookings Institute.
[27] Rails to Trails Conservancy. Economic Benefits of Trails and Greenways. Washington, DC.
[28] Ibid.

million. Spillover (indirect) employment adds an additional 3 jobs per $1 million[29].

- In Colorado, the bicycling industry has created 513 manufacturing jobs and 700 full-time equivalent retail jobs[30].
- Similar results have been shown in Wisconsin, where the bicycling industry (consisting of manufacturing, distribution, retail, and other services) contributes $556 million and 3,418 jobs to the Wisconsin economy[31].
- Portland's bicycle industry has also contributed significantly to the local economy. In 2008, revenues in the bicycle-related economic sector were found to be nearly $90 million[32].

[29] Garrett-Peltier, Heidi (2011). Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts. Political Economy Research Institute. University of Massachusetts, Amherst. http://www.peri.umass.edu/236/hash/64a34bab6a183a2fc06fdc212875a3ad/publication/467/

[30] "Economic Impact of Bicycling in Colorado" (http://atfiles.org/files/pdf/CObikeEcon.pdf).

[31] Source: "The Economic Impact of Bicycling in Wisconsin" (http://www.dot.wisconsin.gov/

business/econdev/docs/impact-bicycling.pdf).

[32] "The Value of the Bicycle-Related Industry in Portland" (http://www.altaplanning.com/App_Content/files/fp_docs/2008%20Portland%20Bicycle-Related%20Economy%20Report.pdf).

chapter two

goals, objectives, and policies

This chapter articulates the purpose, goals and objectives for the Saratoga Springs Bicycle and Pedestrian Master Plan. These principles provide a guiding document for Saratoga Springs in creating, maintaining, and promoting pedestrian and bicycle infrastructure and programs both now and in the future.

Vision

The vision statement guides Saratoga Springs' direction for bicycle and pedestrian facilities, and provides clear direction for the project. To create consistency with neighboring communities, the Steering Committee reviewed language from previously developed local bicycle and pedestrian master plans, including the Lindon Bicycle and Pedestrian Master Plan (2014), American Fork Bicycle and Pedestrian Master Plan (2013), the Lehi Bicycle and Pedestrian Master Plan, the Pleasant Grove Master Plan (2013), and the Orem Bicycle and Pedestrian Master Plan (2010), as well as national examples from Anchorage, Alaska; Davis, California; Minneapolis, Minnesota; and Portland, Oregon. The vision statement of the Saratoga Springs Bicycle and Pedestrian Plan is:

"Saratoga Springs will create healthy and vibrant communities through the creation of attractive and safe bicycle and pedestrian networks that can be enjoyed for recreation and transportation."

Goals and Objectives

Goal 1: Provide a continuous system of bike lanes, sidewalks, crosswalks, shared paths, and other bicycle and pedestrian facilities throughout Saratoga Springs and connections to neighboring cities that are safe and attractive to all users.

Objective 1a: Coordinate multi-modal bicycle and pedestrian planning with adjacent municipalities, including hard surface / paved trails, sidewalks, bike lanes, and soft trails for mountain biking and equestrian use.

Objective 1b: Install signage along local and regional bikeways to assist with way-finding and to increase awareness of bicyclists.

Objective 1c: Coordinate with the Utah Department of Transportation (UDOT) on desired improvements on State roadways.

Objective 1d: Encourage, incentivize, or require new development to participate in the advancement of a robust bicycle and pedestrian system.

Objective 1e: Coordinate with Utah County on its Adopt-a-Trail program for shared use paths.

Objective 1f: Foster a bicycle friendly atmosphere to attract large events like the Tour of Utah and triathlons.

Goal 2: Increase transportation safety for all modes through education and enforcement efforts.

Objective 2a: Publish, distribute, and post city and region-wide bike maps.

Objective 2b: Keep non-motorized facilities clean, safe, and accessible.

Objective 2c: Promote pedestrian and bicycle safety and awareness through education and encouragement activities.

Objective 2d: Enhance Safe Routes to School programming and support Saratoga Springs school children who walk and bike to school.

Goal 3: Institutionalize bicycle and pedestrian planning and routine accommodation of bicycle and pedestrian needs into city processes.

Objective 3a: Involve the Civic Events Committee to attract large events or festivals like the Tour of Utah and triathlons.

Objective 3b: Ensure that bicycle and pedestrian facilities are an integral part of intersection and street design.

Objective 3c: Standardize bike route detour protocol for roadway construction projects.

Objective 3d: Incorporate bicycle and pedestrian network repair and maintenance needs into the regular roadway maintenance regime as appropriate, paying particular attention to sweeping and pothole repair on priority bicycle facilities.

Objective 3e: Identify, track, and pursue a variety of funding sources to implement, renovate, and maintain Saratoga Springs' bicycle and pedestrian system.

chapter three

existing conditions

Study Area Context

Saratoga Springs is located in north-central Utah County, neighboring Camp Williams to the north, Lehi to north/east, Eagle Mountain to the west, and unincorporated Utah County to the south. The City is constrained by Utah Lake to the east and Lake Mountain to the west. These constraints and neighboring jurisdictional boundaries make Saratoga Springs a city that runs primarily north to south. At the widest point the City is only approximately five miles wide, and far narrower in other areas.

According to the most recent census estimate available (2014), the city's population is approximately 24,000 and is one of the fastest growing cities in the state – a trend that is expected to continue. The Mountainland Association of Governments (MAG) projects the population to reach 33,500 by 2020 and 58,500 by 2030. According to the city's general plan the estimated buildout population will range between 75,000 and 125,000 people.

The average high temperature for Saratoga Springs in January is 37°F and the average low is 17°F with 1.02 inches of precipitation. In July, the average high temperature is 91°F and the average low is 56°F, with 0.59 inches of precipitation.

Elevation increases from the low points of Utah Lake and the Jordan River to Lake Mountain on the west and the Traverse Mountains to the north create a mixed topography. There is an elevation change of approximately 400' between the low points and high points in the city.

State Route 68/Redwood Road is the primary north/south transportation corridor while State Route 73/Crossroad Boulevard, Pioneer Crossing, and Pony Express Parkway are the primary east/west corridors through the city. Both of these routes are owned and maintained by UDOT. Subdivision neighborhoods, cul-de-sacs, large lots, or undeveloped land are typically accessed off of these main corridors. Foothill Boulevard/800 West is currently the only other roadway that provides a portion of the city with a contiguous access from north to south through the city. Commercial land uses and employment are also located along State Route 68/Redwood Road and State Route 73/Crossroads Boulevard. The major roads of State Route 68/Redwood Road (20,900 vehicles per day[33]) and Pioneer Crossing (21,600 vehicles per day[34]) are crucial for regional vehicle mobility. These routes are also very important for cycling mobility, as they provide continuous routes through Utah County.

Existing Planning Document Review

The following relevant existing planning documents were reviewed to gain an understanding of existing conditions of bicycle and pedestrian facilities in Saratoga Springs:

[33] UDOT AADT Data, 2014
[34] UDOT AADT Data, 2014

- Saratoga Springs Parks, Recreation, Trails, and Open Space Mater Plan (2011)
- Saratoga Springs Transportation Master Plan (2012)
- Saratoga Springs City Center Plan
- Saratoga Springs Land Use Element of the General Plan –100 Year Plan (2005)
- Saratoga Springs Land Use Element of the General Plan – 100 Year Plan (2005)
- TransPlan 2040 (MAG Regional Transportation Plan)
- Utah Collaborative Active Transportation Study (UCATS)
- Utah Department of Transportation Region 3 Bike Plan

Saratoga Springs City General Plan

The Saratoga Springs General Plan Land Use Element (2005) lays out a broad vision and goals for future development of the city. Three sections highlight goals and policies directly related to the Bicycle and Pedestrian Master Plan:

Alternative Transportation Modes

Goal 1.0: Reduce the number of vehicular trips required by residents to accomplish employment and other activities.

POLICIES:

1.1 Be responsive to the infrastructure needs of the community that support home shopping, home banking, electronic neighborhood meetings, telecommuting and other alternatives to travel.

1.2 Where appropriate, require the construction of pedestrian connections between adjoining developments.

Pedestrian Trails

Goal 1.0: Provide a network of pedestrian trails, including sidewalks, walkways, and hiking/jogging trails throughout the City as a viable alternative to automobiles.

POLICIES:

1.1 Require installation and maintenance of a continuous, safe, and aesthetically pleasing network of pedestrian trails throughout the City.

1.2 Develop design standards for each type of pedestrian trail to minimizes hazards (e.g. lighting, surface texture, landscaping, automobile pedestrian conflicts).

1.3 Reduce physical barriers for the handicapped who might use these facilities.

1.4 Require sidewalks on both sides of all roads unless facilities for other modes of transportation are planned, particularly on arterial and collector roads.

1.5 Require access for pedestrian traffic to and from all parts of commercial development. This should include bus stops, handicapped loading, crosswalks, traffic signals, sidewalks and roadways.

1.6 Work closely with the Alpine School District in reviewing locations for future schools and bus stops to minimize the necessity of children crossing or waiting for buses on arterial roads.

1.7 Consider maintenance costs in the planning and design of sidewalks, trails, landscaping, and other alternative transportation modes or recreational facilities.

Bicycle Trails

Goal 1.0: Provide a network of bicycle trails throughout the City.

POLICIES:

1.1 Require installation and maintenance of a continuous and aesthetically pleasing network of bicycle trails throughout the City.

1.2 Provide a balance of each type of bicycle trail, where appropriate, to satisfy the transportation as well as the recreation needs for residents of the City.

1.3 Develop design standards for bicycle trails that will integrate bicycle trails with other modes of transportation and that will be buffered from surrounding land uses for safety.

1.4 Coordinate road improvement projects with construction of bicycle trails.

1.5 Require bicycle trail access to commercial and recreational sites.

1.6 Require bike racks at shopping centers, public buildings, schools, parks, transportation, nodes, etc.

1.7 Enforce State laws and local ordinances concerning the use of bicycles to promote bicycle safety.

Parks, Recreation, and Open Space

Goal 6.0: To provide a recreational trail system with trail heads in strategic locations for access to the mountains and existing parks.

POLICIES:

6.1 Encourage the completion of the Jordan River Parkway Trail.

6.2 Require the completion of trails along major arterial roadways.

6.3 Where applicable, ensure the development of the Welby Jacob Canal Parkway and the development of trails along other canals as well as utility corridors and rail right-of-ways.

6.4 Plan for east-west trail connections in the urbanized areas of the City.

6.5 Encourage the completion of a comprehensive Parks and Trails Element of the General Plan identifying exact locations and alignments, and secure rights of way/easements.

6.6 Encourage the design and implementation of multi-use trails as indicated.

6.7 Maintain public access to State lands.

2040 Metropolitan Transportation Plan

The Metropolitan Transportation Plan notes that "as Utah Valley continues to grow and urbanize, the need and demand for multi-use paths, neighborhood connections, on-street bike lanes, sidewalks and pedestrian friendly development increases." Planned bicycle and pedestrian projects in Saratoga Springs include a SR-68 / Redwood Road buffered bike lanes, Pony Express Parkway Trail, Lehi Main Street On-street bike facilities, Utah Lake Shore Trail, and an SR-73 Trail.

Utah Collaborative Active Transportation Study (UCATS)

The Utah Collaborative Active Transportation Study was a joint planning effort between UDOT and the Utah Transit Authority (UTA) to identify a regional bicycle network throughout the Wasatch Front. As part of this plan, the project team identified locations across the Wasatch Front that could potentially have high levels of bicycle and pedestrian activity or demand for facilities, based on factors like housing and employment densities, demographic information, and proximity to destinations like shopping, schools, and parks. In Saratoga Springs, the areas of highest demand are located in the Harvest Hills neighborhood and around commercial districts on Redwood Road.

Adjacent Community Plans

Saratoga Springs is bordered on the north/east by Lehi, and Eagle Mountain on the west. Both bordering cities have completed a bicycle and pedestrian master plan, and where possible connections have been identified to provide continuous facilities between the communities.

Existing and Planned Bicycle and Pedestrian Facilities

This section inventories the existing network of facilities to accommodate active transportation, which is a term that usually refers to walking and bicycle trips, but can include many forms of transportation powered by human energy, such as skateboards, kick scooters, or rollerblades. To be effective, active transportation systems should be designed to provide a network of facilities that accommodate a diversity of equipment and skill levels. For instance, it is not unusual to have side paths in a corridor with bike lanes; experienced adult riders may choose to ride at higher speeds adjacent to vehicle travel lanes, whereas a 12-year old riding to school would probably feel more comfortable on a path or sidewalk separated from traffic.

Similar to the roadway networks that connect destinations for automobiles, active transportation networks get people from point A to point B on trails, quiet neighborhood streets, side paths, sidewalks, and bike lanes. For the purposes of this plan, active transportation facilities are distinguished in terms of "On-Street Bicycle Facilities" and "Off-Street Pedestrian & Bicycle Facilities."

On-Street Bicycle Facility: portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists.

Off-Street Pedestrian & Bicycle Facility: separate from roadways for use of bicyclists, pedestrians, and other non-motorized user groups. Commonly referred to as shared use paths, multi-use paths, side paths, and trails. Often hard surface asphalt or concrete but can also be unpaved.

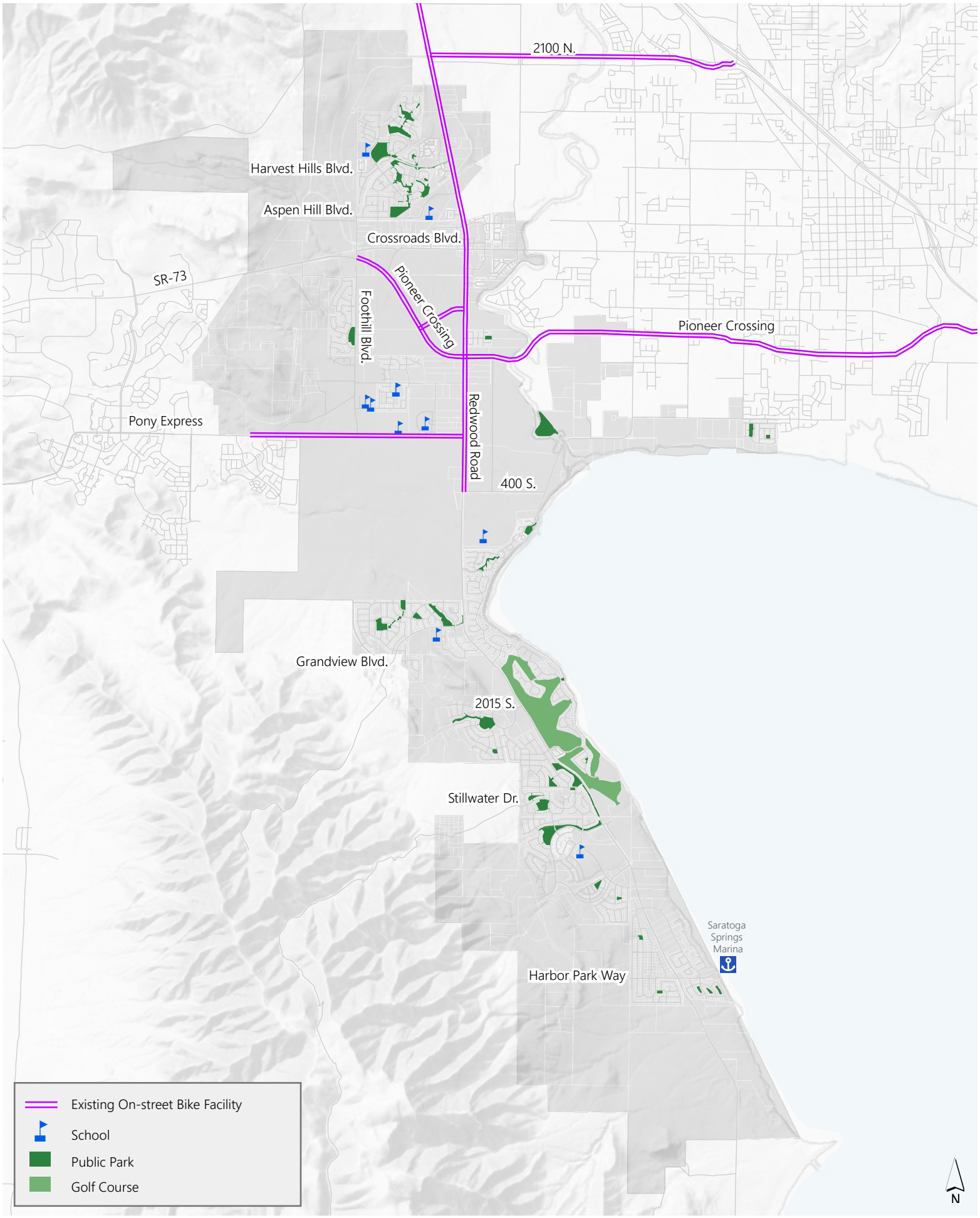
On-Street Bicycle Facilities

On-street bicycle facilities are limited to a few corridors within Saratoga Springs. Redwood Road north of 400 South has a marked bike lane, as does Pony Express and 2100 North. Pioneer Crossing also has a shoulder bikeway, however future widening may remove this bike facility. **Figure 1** provides an overview of existing on-street bicycle facilities.

Off-Street Pedestrian & Bicycle Facilities

Saratoga Springs has leveraged new development to include sidewalks and multi-use pathways as part of its subdivision regulation requirements. The City has also developed a robust trails system to provide recreational amenities for the community. Gaps in these systems are limited primarily to areas where development has yet to occur. **Figure 2** provides an overview of existing off-street bike and pedestrian facilities.

Mountain biking is becoming an increasingly important recreation amenity for Saratoga Springs. While the city does not currently have designated mountain biking trails, the neighboring community of Eagle Mountain invested in 30-acre amenity called the Mountain Ranch Bike Park. Connections to this regional facility and more informal mountain bike routes are viewed as key components to the bicycle network.



0 1.25 2.5 5 Miles

Figure 1: Existing On-Street Bicycle Facilities

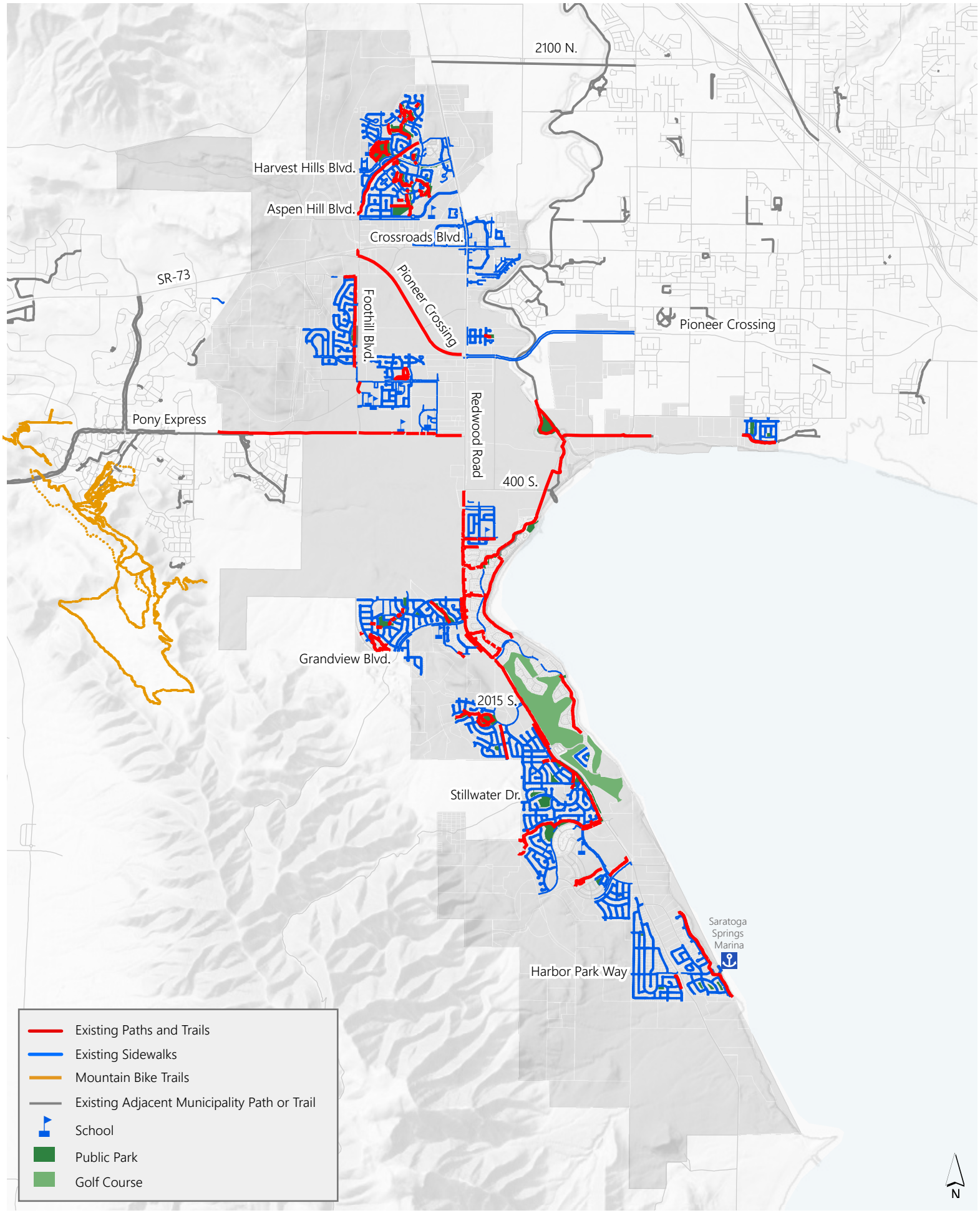


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Figure 2: Existing Off-Street Bike/Ped Facilities

Schools

Elementary

- Harvest Elementary (2105 Providence Drive) is located in the Harvest Hills neighborhood which has several path and trail facilities and a robust sidewalk network. However, connections outside of the neighborhood to the rest of the city are limited.
- Thunder Ridge Elementary (264 North 750 West) is located just north of Pony Express Parkway and west of Redwood Road. It is bordered by a shared-use path on 400 N and on Foothill Boulevard and a path is also being constructed on Pony Express Parkway. Connectivity is limited even with these facilities as they do not connect to major subdivisions to the north or south.
- Horizon School (682 W. Marie Way) is a special education school located adjacent to Thunder Ridge Elementary and houses pre-kindergarten to high-school.
- Saratoga Shores Elementary (1415 S. Parkside Drive) is located just off of Grandview Boulevard and west of Redwood Road. Grandview Boulevard has a shared-use pathway and there is a signalized crossing across Redwood Road, which also has a shared-use path in this location. The surrounding neighborhoods also have a robust sidewalk network. Connections to the north, however, are limited.
- Sage Hills Elementary (3033 Swainson Avenue) is located just south of Village Parkway and west of Redwood Road. Village Parkway has a shared-use path, as does Redwood Road running north. The surrounding neighborhood has a robust sidewalk network, but there is limited connectivity to the rest of the city.
- Legacy Farms Elementary is currently under construction at the northwest corner of School House Road and High Point Drive. It is anticipated that the school will open in the fall of 2016. According to the Legacy Farms Community Plan, there will be a 5’ sidewalk network around the school and also access to an 8’ multi-use trail on the south side of High Point Drive.

Junior High

- Vista Heights Middle School (484 Pony Express Parkway) is located southeast of Thunder Ridge Elementary. Similar to Thunder Ridge Elementary, connectivity is limited to the north and south due to gaps in the shared-use network.

High School

- Westlake High School (99 N. 200 W.) is located east of Vista Heights Middle School. Similar to Vista Heights Middle School, connectivity is limited to the north and south due to gaps in the shared-use network.

Charter Schools

- Lakeview Academy (527 W. 400 N.) is located west of Thunder Ridge Elementary. Similar to Thunder Ridge Elementary, connectivity is limited to the north and south due to gaps in the shared-use network.

Barriers and Safety

Barriers

Several barriers exist that limit bicycle and pedestrian travel in Saratoga Springs. These include:

- The major north-south facility, Redwood Road, is a high-traffic roadway with vehicles speeds around 50 mph. This is intimidating for cyclists and pedestrians, especially at intersections with other large roadways.
- Bicycle and pedestrian facilities have generally been built as part of commercial and residential development; undeveloped parcels create gaps in the network.
- Destinations such as schools and commercial areas are primarily located near Redwood Road between SR-73 and Pony Express Parkway. High-stress roadways and incomplete networks contribute to uncomfortable and indirect travel conditions.
- There are few support amenities provided for pedestrians and cyclists, such as way-finding signage and bike racks.

Safety

Pedestrian and bicycle related crash data between 2010 and 2015 was provided by UDOT and analyzed by Fehr & Peers. There were a total of 9 pedestrian related crashes and 9 bicycle related crashes. **Figure 3** highlights where these crashes occurred as well as their severity. While the crashes were fairly geographically dispersed, several occurred along the Redwood Road corridor, including one of the two fatal crashes. The second fatal crash occurred on Foothill Boulevard near SR-73.

Transit

Saratoga Springs is currently served by one bus line which serves Pony Express, Redwood Road and the Harvest Hills neighborhood during peak hours. The nearest FrontRunner stations are located in American Fork, approximately 5 miles to the east and in Lehi, 4-5 miles to the northeast, depending on the route with no direct connection. The American Fork station is accessed via the Pioneer Crossing corridor, while the Lehi station is accessed using the 2100 North corridor. Both corridors currently have bicycle and pedestrian facilities, however accessing these corridors from Saratoga Springs remains a challenge due to gaps in the bicycle network linking subdivisions to these corridors.

In the long term, Saratoga Springs is planning for transit facilities near the intersections of Pony Express and Redwood Road and Pioneer Crossing and Redwood Road. However, there are no projects scheduled in this area in the near term.

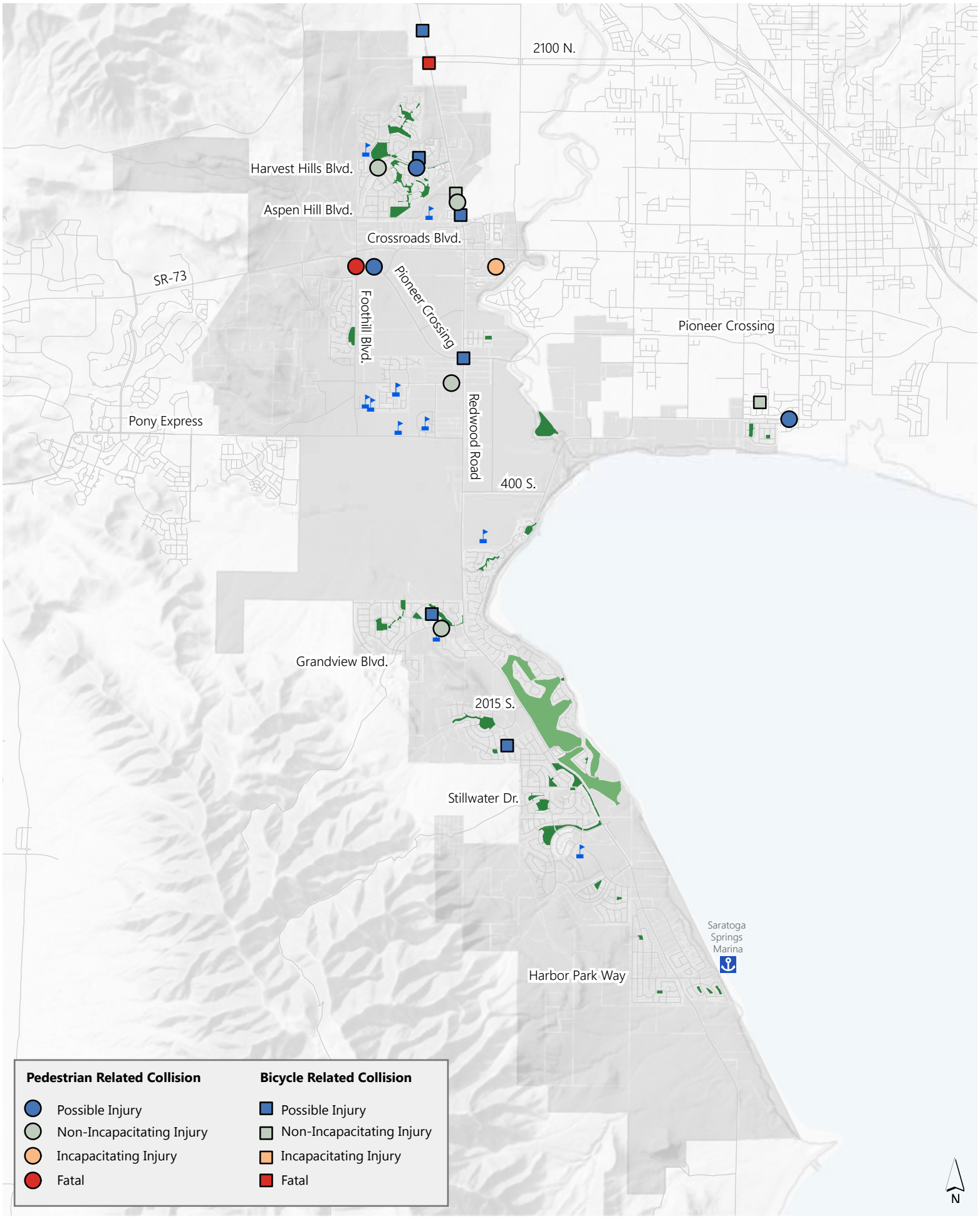

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Figure 3: Collisions

chapter four

public outreach and input

Public outreach is a key component of any master planning effort. The objective of this outreach was to reach a broad, diverse public in which to discuss ideas for an improved bicycling and pedestrian environment in Saratoga Springs. Public outreach was conducted in a variety of ways including a project website, Needs and Attitudes Survey, an in-person public event, and an "online open house."

Needs and Attitudes Survey

An online Needs and Attitudes Survey was conducted between July and August (2015) to understand public attitudes and preferences. The survey was used to identify priorities from those who live, work, play, and travel in and around Saratoga Springs. The survey had 11 multiple choice and several open-response questions as well as four optional demographic questions at the end. There were 168 unique responses to the survey. It is noted that responses represent the opinions of people who voluntarily took the survey, and may not represent the opinion of the majority of people in Saratoga Springs or those who may be affected by this plan.

Demographics

94% of respondents live in Saratoga Springs, 38% recreate here, 16% work here, and 3% go to school here. There was a nearly even male-female split among respondents, with slightly more females than males completing the survey. When asked their age range, respondents answered predominantly in the 26-44 year old age range, with few 25 and under or over 70.

Walking

- Walking Conditions – A plurality (**43%**) of respondents rated **overall walking conditions fair**; only 3% rated them excellent.
- Walking Frequency – More than **75%** of respondents **walk at least a few times a week**, with 31% of the total walking more than four times per week. Very few said that they never walk.

Bicycling

- Bicycling Conditions – Rated less favorably than walking conditions, with almost 75% rating conditions fair or poor.
- Bicycling Frequency – 18% said that they never ride a bike. The most common response, however, was riding a few times per month (33%) with about 50% riding at least a few times per week, if not more. It should be noted that people who are already comfortable bicycling are typically more likely to take a survey of this kind.

Types of Bicyclists Who Responded to the Survey

- 17% are strong and fearless (typically do not need dedicated facilities)
- 50% are enthused and confident bicyclists (prefer bike lanes)
- 30% are interested in bicycling but concerned about safety (prefer more separation)
- 5% were not interested at all

It is noted these results very likely reflect a respondent group that is more confident and engaged in cycling activities than the general population.

Types of Facilities – People rated the following facilities from **most** to least **likely to encourage them to ride more** (Theme: more separation is more desirable)

1. Off-street, paved shared use path
2. Protected bike lane
3. Paint-buffered bike lane
4. Painted bike lane
5. Shared roads

Walking and Bicycling

Most Common Reasons for Walking and Bicycling in Saratoga Springs

1. Improve my health
2. Be outdoors
3. Reduce stress
4. Be with family

Most Desired Destinations

1. Paved, off-street paths
2. Parks, pools, recreation areas
3. Friends' houses
4. School

What prevents people in Saratoga Springs from walking and bicycling more? (Respondents could select more than one)

1. Lack of complete sidewalks, bike lanes, or paths (80%)
2. Traffic or dangerous behavior by motorists (speeding, not yielding) (54%)
3. Lack of crossings (28%)

4. Destinations are too far away (27%)

Top three improvement priorities (could select more than one)

1. New or improved sidewalks, crossings, bike lanes, and shared use paths (88%)
2. Better connectivity to parks and recreation (66%)
3. Safer routes to schools (43%)

Public Outreach

In addition to the Needs and Attitudes Survey, there were two opportunities for the public to provide input on the Plan. The purpose of the initial in-person event was to inform the public about the project and solicit open-ended feedback about facilities, locations, and issues. The purpose of the second "online open house" was to present the recommendations of the plan via an interactive web application and obtain feedback for prioritizing the recommendations. These comment opportunities were advertised through the Saratoga Springs city newsletter, flyers, project website, Facebook, and by directly contacting interested parties, including Home Owner's Associations.

Splash Days Event

The first open house was held at the Saratoga Springs Splash Days event at Neptune Park. Over 25 people stopped at the booth and half of the visitors provided comments. Materials at the event included welcome and project boards, a comment map, objectives exercise and a survey flyer.

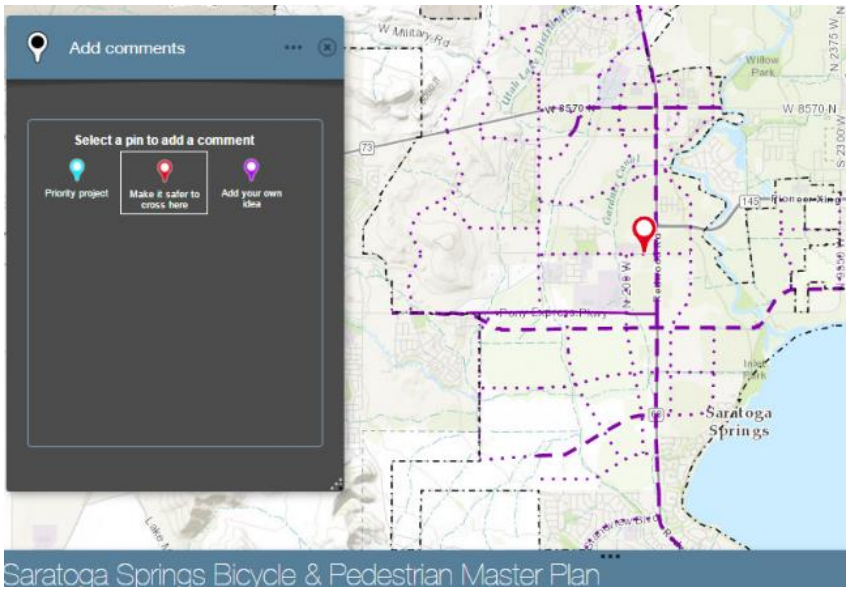
Comments

Several comments were received and are listed below.

- Harvest Hills is isolated and hard to get down to the city
- Connect Shea Park
- Provide additional connections/wayfinding to Jordan River Trail
- Signage improvements at the bridge under Pioneer Crossing (SR-145) bridge
- Gravel paths should be paved to improve conditions for cyclists
- There is not enough shoulder along Redwood Road south of the golf course
- Continue proposed trail along Utah Lake
- Heavy trucks going to the gravel pit are a safety hazard
- Median along Redwood Road presents access issues

Online Open House

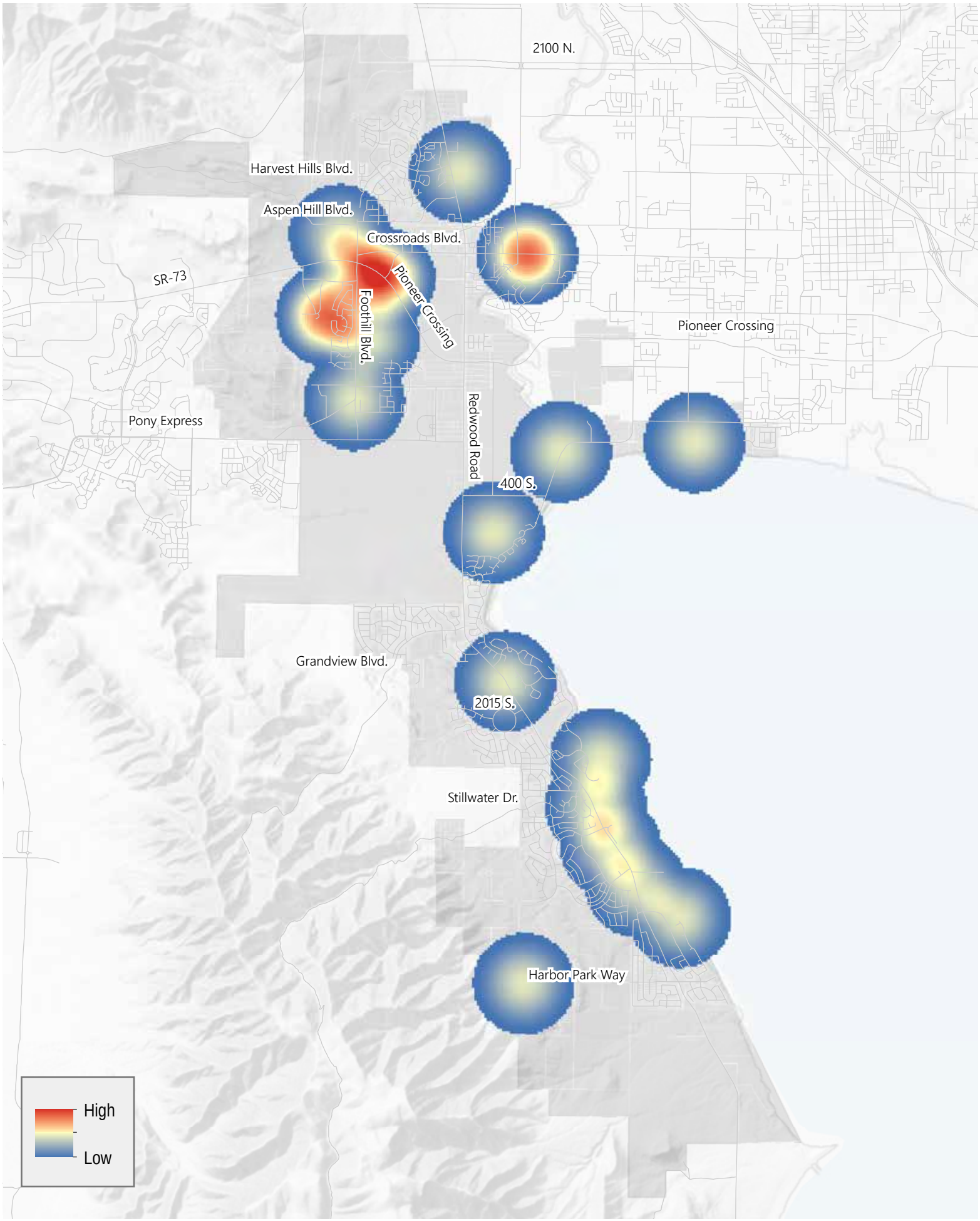
The online open house was administered through the project website. This forum presented the proposed bicycle/pedestrian networks and priorities, and provided an interactive web map to collect comments. Compared to a traditional open house, the online open house extends the comment period over a longer time to allow engagement from a variety of constituents.



A total of 55 comments were made via the interactive web map, which were used to made edits to the proposed bicycle and pedestrian networks. Because the web map collects comments that are referenced to a spatial location, comments were also analyzed to identify geographic clusters and high priority areas. **Figure 5** provides a map of comment densities. Red areas had high comment density while blue areas had lower comment densities.

Field Tour to Salt Lake City, Utah

Members of the Steering Committee participated in a field tour of bicycle and pedestrian facilities in Salt Lake City. The purpose of this trip was to educate decision makers on the different bicycle and pedestrian treatment types and supporting systems. This field trip provided the opportunity to observe wayfinding signage, bicycle signals, buffered bike lanes, GREENbike (bike share), protected bike lanes / cycletrack, green-painted shared lanes, left turn bike boxes, different bike parking styles, and lighted pedestrian signage.



0 1.25 2.5 5 Miles

Figure 4: Public Comment Geographic Clusters

chapter five

proposed system & project prioritization

The proposed active transportation network is designed to fulfill the vision for walking and bicycling in Saratoga Springs. The proposed system is the result of field reviews, discussions with the Steering Committee, input from the public, and engineering judgment. Once completed, the active transportation network will provide safe and direct travel paths throughout Saratoga Springs for those who walk or bike for recreation or as part of their commute.

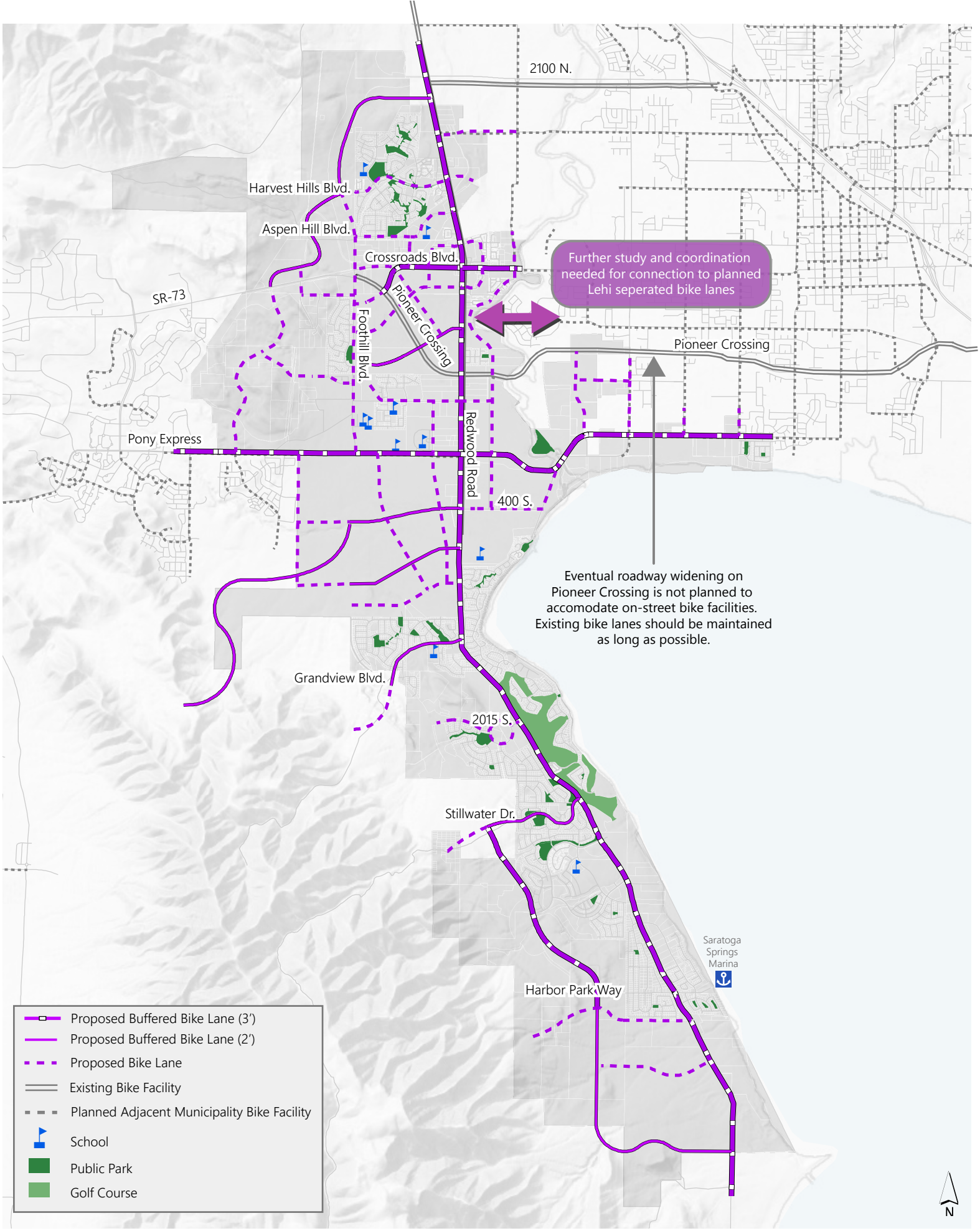
On-Street Bicycle Facilities

The proposed on-street network is designed for more confident and experienced bicyclists traveling in Saratoga Springs. Corridors selected for inclusion in the network are targeted for specific improvements in this Plan, such as the installation of bicycling lanes. However, unless explicitly prohibited, bicyclists are allowed on all streets and roads regardless of whether the streets and roads are a part of the bikeway network.

Figure 5 illustrates the existing and proposed on-street bicycle network. The proposed system includes about 70 miles of new on-street bikeway facilities such as bicycle lanes and buffered bicycle lanes. **Table 1** shows the number of proposed miles for each bikeway classification.

TABLE 1: SUMMARY OF PROPOSED ON-STREET BIKE NETWORK

Facility Type	Existing (miles)	Proposed (miles)	Total (miles)
Bike Lane	8.1	33.0	41.1
Buffered Bike Lane (2')	0	13.5	13.5
Buffered Bike Lane (3')	0	21.0	21.0
Total	8.1	67.4	75.6



0 1.25 2.5 5 Miles

Figure 5: Existing and Proposed On-Street Bike Facilities

On-Street Bicycle Network Design Methodology

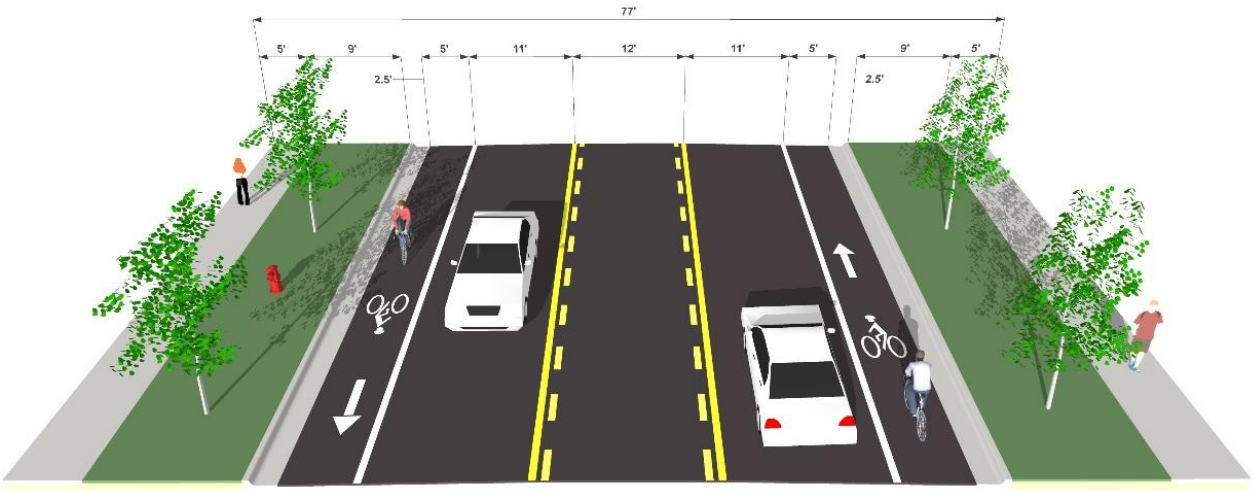
The following approach was used to create the Plan:

- The existing conditions map was overlaid with identified corridors from the input gathered from the Steering Committee and the public.
- These corridors were combined with access to destinations such as schools, parks, and commercial areas to create a preliminary bicycle network.
- The Transportation Master Plan and Parks, Recreation, Trails, and Open Space Master Plan were reviewed to identify future connections and facility types.
- The preliminary bicycle network was checked against existing and proposed networks in adjacent communities to ensure regional connectivity.
- The preliminary bicycle network was reviewed to ensure adequate spacing of facilities, closure of gaps within the network, and addressing of safety concerns.
- Initial bicycle facility types were created based on revised cross-section standard drawings, functional classification, field work, and discussions with the City.
- The complete bicycle network was reviewed with the Steering Committee and checked to ensure connectivity within Saratoga Springs and to adjacent communities.

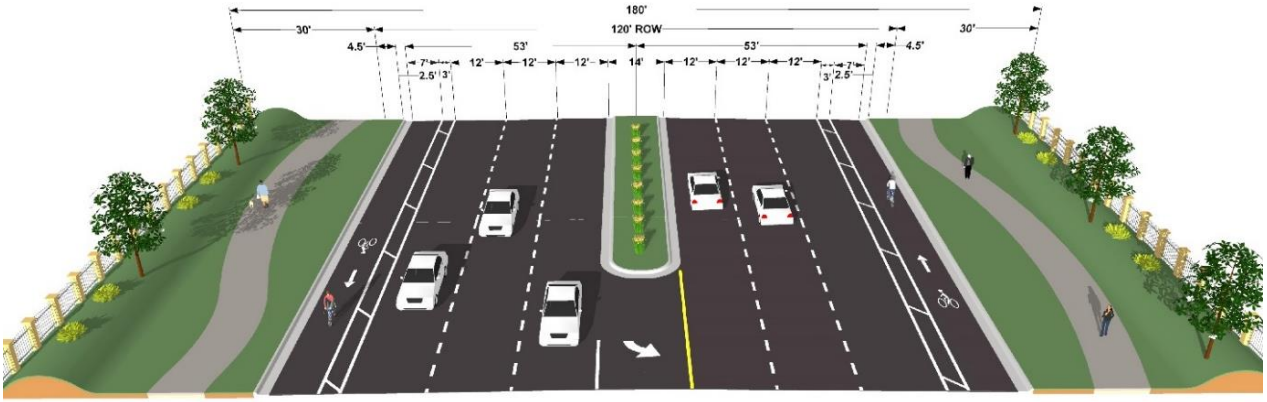
Proposed Facility Types & Cross-sections

The proposed on-street bicycle network is composed of bicycle lanes and buffered bicycle lanes. Roadway cross-sections, shown on the following page, were developed using the street typology from the Transportation Master Plan (see **Appendix A** for all street typologies).

Bike lanes provide a restricted right-of-way and are designated for the use of bicycles with a striped lane and signage on a street or highway. They can increase bicyclists' safety and comfort by providing a visual separation between modes. Bicycle lanes are generally five to six feet wide.



Buffered bike lanes are bike lanes that provide a greater level of separation from vehicular traffic and/or parked vehicles by creating a buffer adjacent to the bicycle lanes through striping. Buffered bike lanes typically include a two to three foot striped buffer adjacent to a five to six foot bike lane. Buffers can be painted or can include vertical elements like a concrete curb or plastic bollards, which provide additional protection for users.

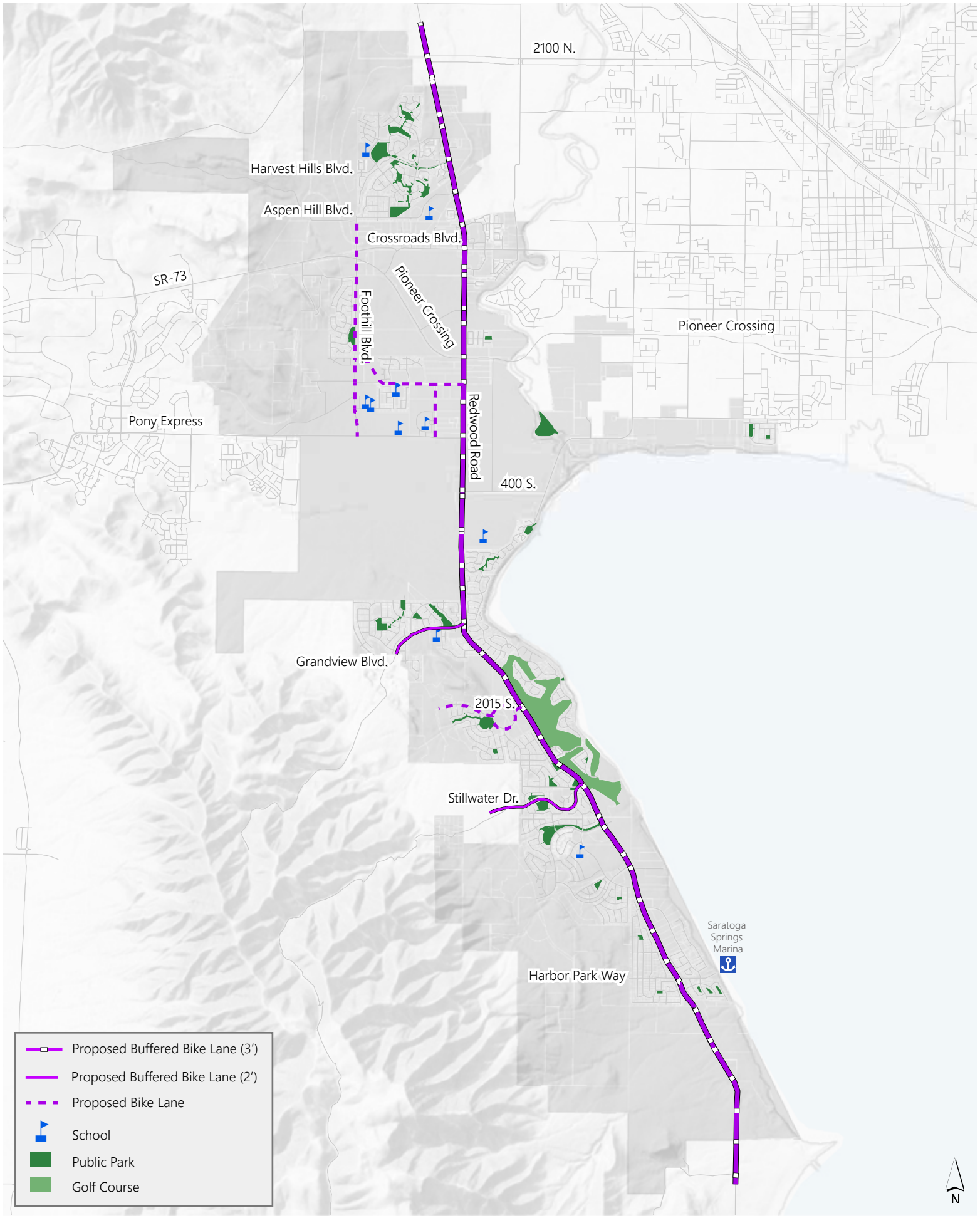


Bicycle Facility Decision Matrix

While the proposed cross-sections provided in Appendix A provide bicycle infrastructure recommended based on roadway types, the context of roadways change over time. To assist Saratoga Springs in determining appropriate bicycle facility types in the future, bicycle facility guidance has also been developed. **Appendix C** contains guidance on appropriate facility types based on conditions including the number of lanes, traffic volume, and speed. If these attributes increase, a higher degree of separation is recommended to improve comfort and safety for cyclists. While the facility types identified reflect best practices, the guidance is not meant to replace engineering judgement. Each situation is unique and facility types should be selected on a case-by-case basis.

Bicycle Project Prioritization

Much of the future on-street bicycle network is expected to be incorporated into new roadway construction. However, there are several existing roads on which bike lanes are proposed, and these were identified as priority project locations. From the City perspective, these are priority projects because they will not be funded through new development and will require the City and government partners to fund these projects. **Figure 6** illustrates these priority projects.



0 1.25 2.5 5 Miles

Figure 6: Proposed Priority On-Street Bike Facilities

Off-Street Pedestrian & Bicycle Facilities

The provision of off-street infrastructure is essential to creating a comfortable walking environment. It is also important to provide these facilities to serve cyclists who are uncomfortable using on-street bicycle facilities. Saratoga Springs is ahead of many other Wasatch Front communities in providing sidewalk infrastructure. City development requirements include provisions to ensure sidewalks are integrated in new residential and commercial development. Beyond neighborhood sidewalk networks there is a need for paved paths and soft surface trails that can provide connections between subdivision and serve as recreation facilities.

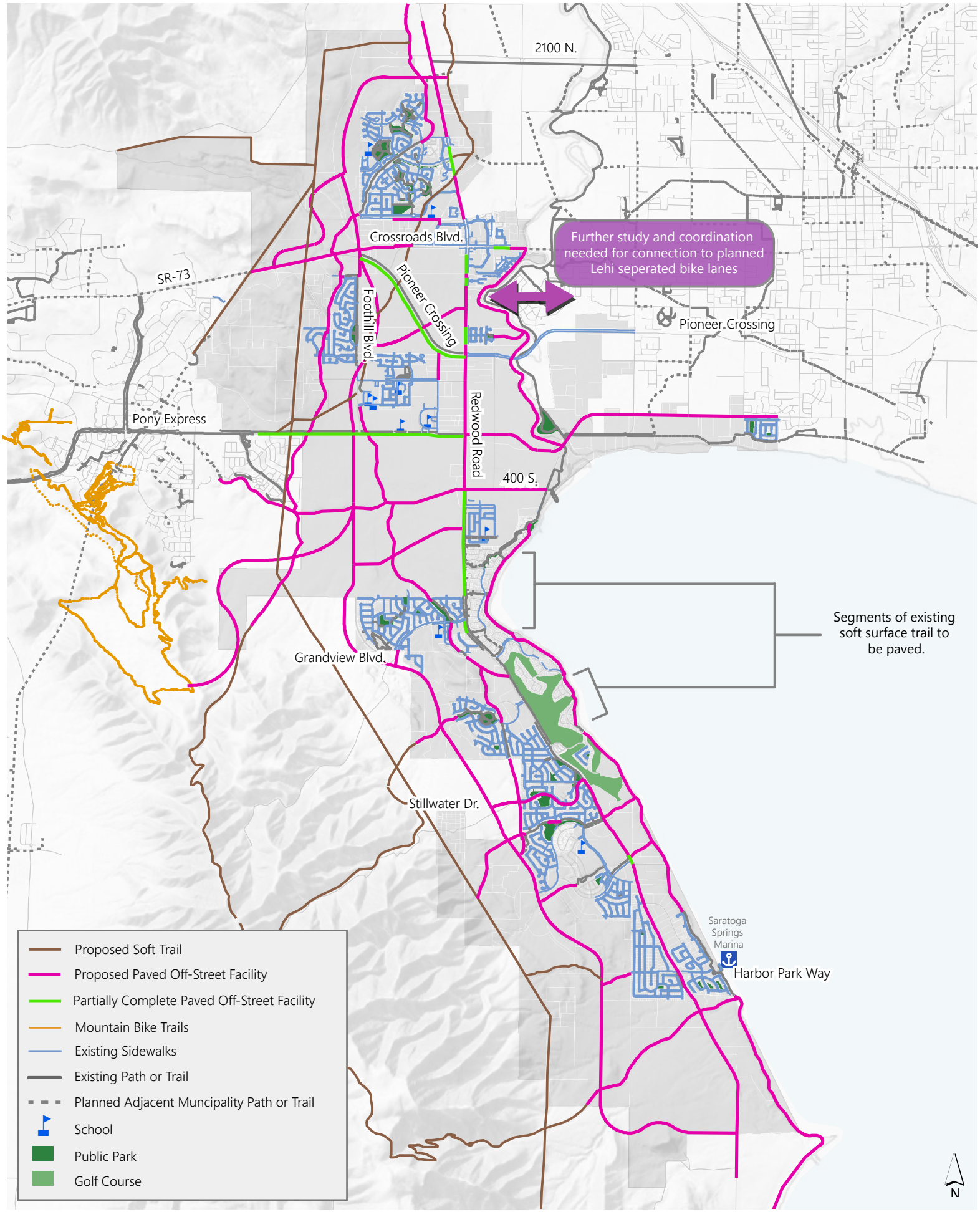
The proposed off-street network consists of trails and pathways that are designed to connect destinations and provide recreational opportunities. While sidewalks are usually oriented toward pedestrians, many user groups can utilize these facilities, especially those designated as multi-use trails, including road and mountain bicyclists, and equestrians.

Figure 7 illustrates the existing and proposed off-street network. The proposed system includes a total of approximately 100 miles of new facilities. **Table 2** shows the number of proposed miles for each classification. While this plan does not specify locations for crossing treatments, guidance on selecting appropriate treatments can be found in **Appendices D and E.**

TABLE 2: SUMMARY OF PROPOSED OFF-STREET BIKE/PED NETWORK

Facility Type	Existing (miles)	Proposed (miles)	Total (miles)
Off-Street Paved Pedestrian & Bicycle Facilities	26.2	93.4	119.7
Soft Trails	1.5	35.4	36.9
Sidewalk	140.4	N/A	N/A
Total*	168.1	269.2	297.0

*Future sidewalks are not defined in the Plan, and therefore only existing sidewalk is included in total calculations.



0 1.25 2.5 5 Miles

Figure 7: Existing and Proposed Off-Street Bike/Ped Facilities

Off-Street Network Design Methodology

The proposed system was developed according to the following methodology:

1. Gaps in the existing trail and pathway network were identified through reviewing existing geospatial data.
2. Corridors for prioritization were selected based on the input gathered from the Steering Committee and the public and corridors with access to destinations such as schools, parks, trails, and commercial areas.
3. The preliminary network was reviewed to ensure closure of gaps within the network, addressing of safety concerns.
4. The pedestrian network was reviewed with the Steering Committee and checked to ensure connectivity within Saratoga Springs.

Project Prioritization

Like the on-street bike network, much of the off-street network will be constructed through future development. However, some projects should be pursued by the City. These projects fill gaps in the network and complete regionally significant multi-use trails and pathways. **Figure 8** illustrates these priority projects.

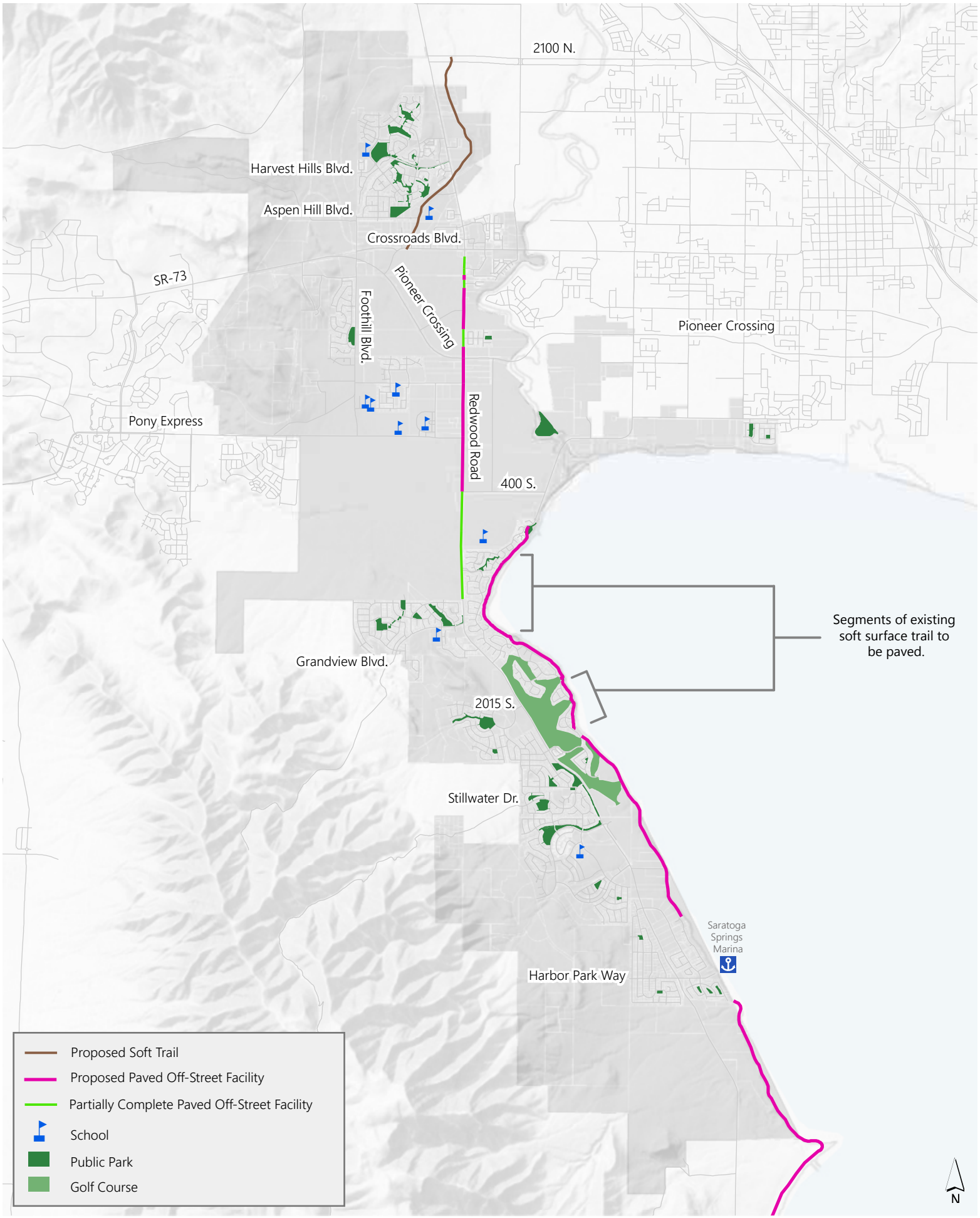


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Figure 8: Proposed Priority Off-Street Bike/Ped Facilities

Amenities & Recommendations

Active transportation networks can be supported through other amenities such as lighting, trash cans, water fountains, and benches. Saratoga Springs should endeavor to provide these, and other amenities, wherever possible. Several key amenities are recommended based upon field visits and discussion with the Steering Committee. These recommendations are described in **Table 3**. Additional amenities and bicycle and pedestrian facility treatments are listed in **Appendix D** ("toolbox").

TABLE 3: SUMMARY OF ACTIVE TRANSPORTATION AMENITIES

Tool	Description	Benefits	Considerations
Corridor Lighting Image source: www.pedbikeimages.org/	Roadway and pedestrian sidewalk lighting to improve driver visibility of pedestrians during low light conditions	Improves driver visibility of pedestrians and provides them more time to react to a potential conflict	Should be considered along all corridors
Way-finding Signs th Ave S Bike Blvd 1st St S Bike Blvd Downtown 1 Min" /> Image source: NACTO	Posting a series of pedestrian and bicycle way-finding signs that orient pedestrians to walking and biking destinations along a corridor	Encourages more walking and bike trips by providing people with a reference point to a destination	Applied in locations where there are pedestrian and bicycle destination or attractors Should be scaled to be legible for appropriate user
Bicycle Repair Stands	Do-it-yourself bicycle repair stands offer an air pump and basic tools to make minor bicycle repairs.	Encourages bicycle use by removing concerns related to common maintenance and repair issues.	Repair stands should be located near short-term and long-term bicycle parking.

Bicycle Parking

Bicycle parking is an important end-of-trip facility for those riding bicycles for any purpose, allowing secure storage of bicycles and comfortable access to destinations. Saratoga Springs should consider adopting a bicycle parking ordinance that would provide both short and long-term bicycle parking.

As part of this Plan, a bicycle parking best practice was developed based on guidance from the Association for Pedestrian and Bicycle Professionals' (APBP) Bicycle Parking Guidelines Manual (2nd Edition) and bicycle parking generation code language and design standards from Lindon, American Fork, and Eagle Mountain, Utah. **Appendix B** contains the best practice guidance.

Crosswalk and Intersection Guidance

Crosswalk Decision Matrix

To assist Saratoga Springs in creating safe crosswalks, this Plan includes a Crosswalk Decision Matrix (**Appendix E**), which provides guidance for determining where to install crosswalks at uncontrolled locations. The Crosswalk Decision Matrix is a toolbox of elements to improve pedestrian mobility, visibility, and safety at uncontrolled locations. It will assist the City in making decisions about where basic crosswalks (two stripes) can be marked; where crosswalks with special treatments, such as high visibility crosswalks, flashing beacons, and other special features, should be employed; and where crosswalks will not be marked due to safety concerns resulting from volume, speed, or sight distance issues. This matrix provides guidance about the type of treatments appropriate on various streets and under various conditions. While the strategies in the matrix reflect best practices, the guidance is not meant to replace engineering judgment. Each situation is unique and walking safety treatments must be selected on a case-by-case basis.

Separated Bikeways at Intersections

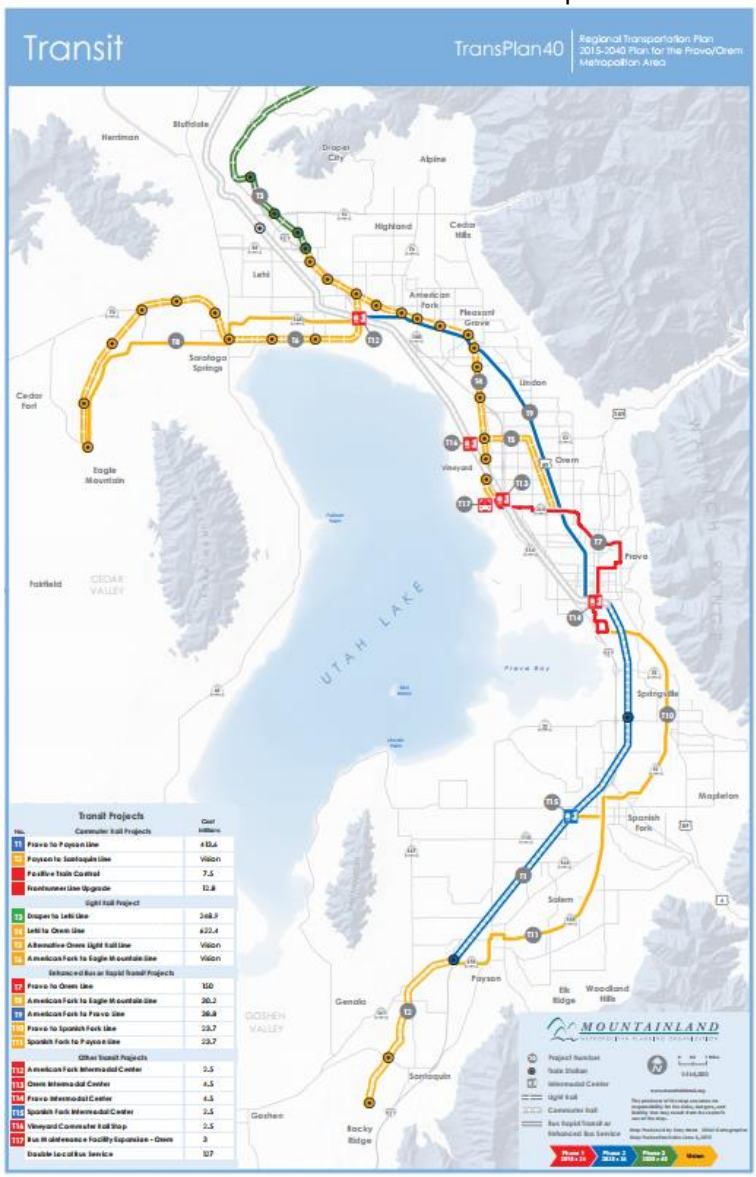
Creating safe intersections for bicyclists is often challenging. Even if linear bicycle facilities are acceptable, if the interaction between automobiles and bicycles at intersections is not appropriately addressed it can lead to safety issues and lower utilization. **Appendix F** provides guidance to transition bike lanes through right turn lanes and roundabouts, as well as guidance related to signal detection.

Future Transit Integration

The 2015-2040 MAG long-range transportation plan identifies two projects with connections to Saratoga Springs; a Bus Rapid Transit (BRT) route with service between American Fork and Eagle Mountain and a Light Rail project with service between Lehi and Eagle Mountain. Both projects are identified as "Vision/Unfunded" with no specific timeline for development. However, connections to these future projects and other interim transit investments are critical to the future bike and pedestrian networks. Transit can work hand-in-hand with these networks, allowing users to use both systems together to make longer trips, or providing alternatives during inclement weather. Providing seamless and convenient "first/last mile" connections to transit makes using both networks more feasible.

In the short term more frequent transit service is most likely to be added to major corridors like Redwood Road, Pony Express Parkway, and Crossroads Blvd. Saratoga Springs should pay special attention to making effective first/last mile connections to these corridors. For future fixed-guideway projects, multi-modal access to station areas should be a key focus. The Utah Transit Authority (UTA) has developed a First/Last Mile toolbox that is an excellent reference for providing connections to station areas.

MAG TransPlan40 Transit Map



chapter six

capital costs & maintenance

There are two costs associated with developing the proposed active transportation network – capital costs for constructing the facilities, and ongoing maintenance costs to ensure that the facilities in good condition. While new development will cover some of the upfront capital costs, Saratoga Springs will need to plan for appropriate resources for new construction, retrofits, and regular maintenance activities.

Capital Cost Assumptions

This section discusses capital costs of bicycle and pedestrian facilities recommended in this Plan. Table 4 provides a summary of capital costs by facility type as well as priority.

On-Street Bike Facilities

The planning-level cost is $13,000 per mile (bi-directional) for a standard bike lane. The planning-level cost is $21,000 per mile (bi-directional) for a buffered bike lane. These costs assume sufficient curb-to-curb width to install the bike facility and associated pavement markings, but that modifications to existing striping would be necessary to make room. It assumes that the road is in good condition and doesn't require maintenance or rehabilitation as part of the striping project.

Off-Street Bike/Ped. Facilities

The planning-level cost is $686,000 per mile (centerline) for paved paths, assuming asphalt paving of an 8'-10' pathway. Right-of-way acquisition and other soft costs including design and engineering are not included in this estimate.

The planning-level cost is $32,000 per mile for 8'-10' trail of a soft-surface material such as soil or chipped wood. Costs from the Saratoga Springs Park, Recreation, Trails, and Open Space Master Plan were adjusted using a CPI inflation calculator to develop the cost estimate in 2015 dollars.

In most cases, sidewalk construction costs will be covered through future development. However, sidewalks cost estimates are provided to better understand the costs incurred by developers. A standard 5-foot sidewalk with curb and gutter is roughly $75 per linear foot.

TABLE 4: CAPITAL COSTS SUMMARY

Priority Network			
	Miles	**Per Mile Unit Cost**	**Cost**
Off-Street Paved Pedestrian & Bicycle Facilities	12.0	$686,000	$8,250,800
Soft Trails	2.1	$32,000	$66,200
Bike Lane	4.9	$13,000	$63,900
Buffered Bike Lane (2')	1.8	$21,000	$38,200
Buffered Bike Lane (3')	11.6	$21,000	$243,700
TOTAL	32.4		$ 8,662,800
All Recommendations			
	Miles	**Per Mile Unit Cost**	**Cost**
Off-Street Paved Pedestrian & Bicycle Facilities	93.4	$686,000	$64,091,200
Soft Trails	35.4	$32,000	$1,133,000
Bike Lane	33.0	$13,000	$428,900
Buffered Bike Lane (2')	13.5	$21,000	$282,500
Buffered Bike Lane (3')	21.0	$21,000	$440,000
TOTAL	196.2		$66,375,600

Maintenance Recommendations

The City of Saratoga Springs has invested considerable resources in the construction of shared use paths and sidewalks, both of which provide valuable recreational and transportation benefits to local residents and visitors. The City currently allocates about $50,000 annually to the Parks Department for snow removal and plant management along trails. Trails outside of established parks are essentially treated as linear parks and maintained by the Parks Department. On-street bike lanes are currently maintained as part of regular roadway maintenance.

As Saratoga Springs continues to grow, capital costs and therefore maintenance costs will increase as more and different types of facilities are installed. Currently, an element of disconnect or disparity exists between growth and budgeted maintenance costs, as well as between expectations of facility quality and financial resources. Additional operations and budgetary planning will benefit the City as it handles current and future demand for high quality facilities and associated maintenance activities. The following maintenance recommendations seek to establish a structured yet flexible approach to maintenance activities for existing and proposed on and off-street bicycle and pedestrian facilities.

The physical condition of bicycling and walking facilities like bike lanes, paved shoulders, dedicated shared-use paths, and sidewalks, is an important consideration when residents consider choosing walking or bicycling for transportation or other uses.

Primary on-street bikeway maintenance activities include sweeping, maintaining a smooth roadway, and snow removal. Pavement management and overlay projects are good opportunities to add or improve bicycle facilities within the existing roadway width.

Typical off-street bicycle and pedestrian facility maintenance activities include sweeping, pavement management, snow removal, weed abatement, landscaping, and mowing.

Developing a city-wide maintenance management plan will be useful in ensuring that responsibility is assigned to different departments within the City and that regular maintenance is completed efficiently and uniformly. The following recommendations provide a menu of options that will improve Saratoga Springs' existing and future maintenance program. Recommendations should be incorporated into the City's construction standards, development code, master development agreements, standard cross sections, City Code (where applicable), and other zoning and maintenance definitions and standards.

On-Street Maintenance Activities

Implementing bikeway facilities is important and keeping them in good condition equally so. On-street bikeways are currently maintained as part of standard roadway maintenance programs, however wide shoulders and bike lanes often have debris, like rocks, sand, and snow, in them, making bicycle travel within those designated areas more difficult. Extra emphasis should be put on keeping bike lanes and roadway shoulders clear of debris and snow, as well as keeping vegetation overgrowth from blocking visibility or creeping into the roadway. Maintenance activities could be driven by a regular schedule or by maintenance requests from the public. Typical maintenance costs for on-street bikeways are shown in **Table 5** at the end of this section.

Street Sweeping

When a bicycle lane becomes filled with debris, bicyclists are forced into the motor vehicle lane. Poor bikeway maintenance can contribute to crashes and deter potential bicyclists unwilling to risk flat tires and skidding on roadways. The City of Saratoga Springs maintains all public roadways within city limits that are not state routes except for Cedar Fort Rd/SR-73, Redwood Rd/SR-68, Pioneer Crossing, and SR-145, which are UDOT-maintained, state highway facilities.

Periodic checks should be made of the on-street bikeway network. Street sweeping of on-street facilities should be coordinated with the management agency's roadway maintenance program to ensure that the roadway is cleared curb to curb and that debris is not swept into the bike lane.

Sweeping Guidance

- Establish a seasonal sweeping schedule that prioritizes roadways with bikeways.
- Sweep bikeways whenever there is an accumulation of debris.
- In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders.
- Pave gravel driveway approaches to minimize loose gravel on paved roadway shoulders.

- Sweeping of off-street paths may require special equipment such as bobcats equipped with sweeping attachments or specialized path sweepers.
- Perform additional sweeping in the spring to remove debris that has accumulated during winter.
- Perform additional sweeping in the fall in areas where leaves accumulate.

Pavement Surface

Bicyclists are more sensitive to pavement quality than motorists because of reduced speeds, narrower tire widths, and, typically, lack of suspension or dampening systems. Compaction after trenches and other construction holes are filled can negatively affect bicycle travel. Uneven settlement after trenching can affect the roadway surface nearest the curb where bicycles travel. Sometimes compaction is not achieved to a satisfactory level, and an uneven pavement surface can result due to settling over the course of days or weeks.

Roadway paving aggregate material choice is an important issue when roads are repaired or repaved. The City should investigate using a smaller chip size, such as ¼ inch or ½ inch, on at least the most popular on-street biking routes to improve pavement quality and bicyclist comfort. A seal coat, which is applied after the chip, will greatly improves smoothness of the roadway surface.

Pavement Surface Guidance

- Maintain a smooth pothole-free surface.
- Ensure that the finished surface on bikeways does not vary more than ¼ inch on new roadway construction and existing roadway repaving or resurfacing.
- Maintain pavement so that ridge buildup does not occur at the gutter-to-pavement transition or adjacent to railway crossings.
- Inspect the pavement 2 to 4 months after trenching construction activities are completed to ensure that excessive settlement has not occurred.
- During chip seal maintenance projects, if the pavement condition of the bike lane is satisfactory, it may be appropriate to chip seal the travel lanes only. However, use caution when doing this so as not to create an unacceptable ridge between the bike lane and travel lane.

Pavement overlays represent good opportunities to improve conditions for on-street bikeways if done carefully. A ridge should not be left in the area where bicyclists ride (this occurs where an overlay extends part-way into a shoulder bikeway or bike lane). Overlay projects also offer opportunities to widen a roadway or to re-stripe a roadway with bike lanes.

Pavement Overlay Guidance

- Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge.
- If the bike lane pavement is of good quality, it may be appropriate to end the overlay at the shoulder or bike lane stripe provided no abrupt ridge remains.
- Ensure that inlet grates, and manhole and valve covers are within ¼ inch of the finished pavement surface and are made or treated with slip-resistant materials.
- Pave gravel driveways to property lines to prevent gravel from being tracked onto shoulders or bike lanes.

Off-Street Maintenance Activities

Shared-use paths and trails require regular maintenance to provide a quality experience to users. Maintenance activities can generally be categorized into one of two types: routine maintenance, which is

done frequently to annually; and, major or capital maintenance, which involves more intensive activity at a less than annual frequency.

Not every shared-use path or trail will have the same needs and levels of expenditure. It is estimated that approximately $500 to $1,500 per mile be budgeted annually for routine maintenance of shared-use paths and trails.

Sidewalk Maintenance

Sidewalks enable residents to safely access friends' homes, commercial areas, community resources, transit stops, schools, and other destinations on foot. Sidewalks are also integral to Saratoga Springs' future economic centers as they will provide spaces to meet, eat, and engage with one's community. Maintaining sidewalks clear of debris and obstructions is essential to maintaining comfort and safety for and limiting liability in the city.

Sidewalk Guidance

- Work with property owners to enforce regular sidewalk maintenance.
- Repair and reconstruct sidewalks where necessary because of tree root heaving, settling, deterioration, landslides, or other natural occurrences.

Snow Removal

In the event of a snow storm, the City uses as many as five snow plow trucks to clear and salt 180 lane miles of non-state highway roads (mentioned previously), sometimes 24 hour per day if necessary. The Public Works Department prioritizes which streets will be plowed first in the following order, ranked by priority: (1) collectors and streets serving schools, municipal buildings, and selected streets on steep grades; (2) main secondary routes through subdivisions connecting collector streets; (3) remaining City streets and unpaved roadways. During major snow events, the top priority streets may be cleared before and continually before any other streets in order to keep them operational; snow removal on second and third priority streets may not occur for several days after a major event.

Individual property owners, occupants, and/or homeowners are not allowed to park or allow to be parked vehicles on the street in the case of a snow event, so as to allow effective snow removal by Public Works. Residents are also responsible for removing snow and ice on and in front of private driveways and mailboxes, though snow may not be plowed into or back into the public roadway. Residents are also required to remove snow and ice from sidewalks along their property, though City crews are responsible for sidewalks in and in front of public facilities.

Winter maintenance of bicycle and pedestrian facilities is an important consideration for a city like Saratoga Springs that receives significant amounts of snowfall. The City should expect bicyclists to use the road network year round, even in inclement conditions. Providing safe conditions for bicyclists year round should be a top priority. Some communities prioritize streets with bicycle and pedestrian facilities to be plowed by 7:00 am (starting at 4:00 am), Monday through Friday, to facilitate active transportation users' commutes to school and work. Conventional on-street bike lanes can and should be plowed at the same time as the rest of the street and should not require a considerable amount of extra effort. Protected bike lanes may require a small plow or brush to clear snow and/or debris, but should be maintained at the same time as the rest of the roadway. The planted strip separating the sidewalk from the roadway and/or the protected bike lane buffer can be used for snow storage.

Snow removal along proposed on-street paths and off-street trails will require additional or new efforts from Saratoga Springs maintenance crews in several departments. The City should attempt to provide

snow removal for paths and sidewalks (where they are not currently being cleared) throughout the rest of the city as the proposed system develops. Immediately clearing snow from all paths will likely not be feasible because of time and budget resources, but department staff and maintenance crews should establish a prioritization that focuses on 1) regionally-significant trails and paths, 2) trails and paths that connect to schools, 3) trails and paths that connect to retail/commercial centers and 4) trails and paths that connect to transit stops.

Snow Removal Guidance

- City should employ a proactive or anti-icing strategy and have a plan for the removal of unused de-icing surface material debris after storms that accumulates in and around bike facilities.
- A prioritization schedule for snow removal is necessary and should focus on primary routes and destinations that impact the highest volume of bicyclists and pedestrians immediately following snow events.
- Plow all the way to the curb to clear bike lanes and rideable shoulders.
- Snow removal on off-street trails and on-street paths may require special equipment such as skid steers equipped with plows or smaller pickup truck plows.

Annual Maintenance Cost Estimates

The following tables provide cost estimates and recommendations for ongoing maintenance of the existing and proposed active transportation network.

TABLE 5: MAINTENANCE COSTS

Existing Plus Proposed Network			
	Miles	**Per Mile Unit Cost**	**Cost**
Paved Paths	119.7	$500 - $1,500	$59,800 – $179,500
Soft Trails	36.9	$500 - $1,500	$18,500 - $55,400
Bike Lane	41.1	$1,800-$3,700	$74,000 - $152,100
Buffered Bike Lane (2')	13.5	$3,900 - $5,900	$52,500 - $79,400
Buffered Bike Lane (3')	21.0	$3,900 - $5,900	$81,700 - $123,600
TOTAL	232.1		$286,500 - $590,000

Capital Maintenance

Major or capital maintenance activities typically involve more intensive maintenance repairs such as pavement seal coating, pavement overlays, pavement reconstruction, or other structural rehabilitations. Needs can vary widely based upon environmental factors, such as soil conditions, drainage, and the quality of initial construction. Any paved path surface will deteriorate over time with asphalt surfaces dropping in quality rapidly after 10 years. Preservation efforts such as seal coating extend the life of asphalt efficiently and at a lower cost than waiting for the surface to fail requiring expensive reconstruction. Overlays may be needed after multiple seal coats or after approximately 30 years of

service. A full reconstruction could be required when needed, typically at 50 years if the seal coat and overlay have been provided at regularly, proposed intervals.

Concrete paths will require significantly less capital maintenance than asphalt paths. Although they may require isolated jacking or replacement, generally limited capital maintenance expenditures can be expected for upwards of 50 years.

Financial planning for major or capital maintenance can be challenging. Typically asphalt shared-use paths require greater capital maintenance activities with age and ultimately require full reconstruction at some point. Some jurisdictions stay focused on eventual reconstruction and treat this as a maintenance item to be budgeted for, whereas some treat this as a separate capital project to be considered at a later date in the future. Depending on the existing age and the level of effort, major or capital maintenance can require an average budget of between $2,000 and $7,000 per mile per year. Some years may require more expensive maintenance while others require none.

TABLE 6: ON-STREET BIKEWAY MAINTENANCE FREQUENCY AND COST OPINIONS

Maintenance Activity	Material	Frequency	Estimated Cost
Pavement sweeping	All	Weekly or monthly as needed	Part of regular street sweeping activities and costs
Snow removal	All	Simultaneous with regular roadway snow removal; otherwise, as needed	Depends on conditions, ~$150/mile
Tree and shrub trimming	All	5 months to 1 year	Part of regular street sweeping activities and costs
Sign repair and replacement	Signs and poles	Every 10 years	$300/sign
Bike lane re-striping	Paint	Every 1 to 2 years	$3,700/mile
Buffered bike lane re-striping	Paint	Every 1 to 2 years	$5,900/mile
Shared lane marking re-painting	Paint	Every 1 to 2 years	$500/mile

TABLE 7: OFF-STREET PATH MAINTENANCE FREQUENCY AND COST OPINIONS

Maintenance Activity	Function	Frequency	Est. Annual Cost (per mi.)
Path sweeping	Keep paved surfaces debris free	Twice annually (once in spring and once in fall)	$140 (x2)
Litter and trash removal	Keep path clean and maintain consistent quality of experience for users	Annually, or as needed	$70
Mowing path shoulders (native open space areas)	Increases the effective width of the path corridor and helps protect encroachment	Twice annually, in late spring and mid to late summer	$100 (x2)
Tree and brush trimming	Eliminate encroachments into path corridor and open up sight lines	Annually, or less frequently as needed	$100
Weed abatement	Manage existence and/or spread of noxious weeds, if present	Twice annually, in late spring and mid to late summer	$140 (x2)
Safety Inspections	Inspect path tread, slope stability, and bridges or other structures	Annually	$20
Snow removal	Generally limited to urban sections of the path where year-round bike access is desired	As needed (assume 5 events)	$120
Sign and other amenity inspection/replacement	Identify and replace damaged infrastructure	Annually (assume 2 sign replacements)	$100
Crack sealing and repair	Seal cracks in asphalt to reduce long term damage	Annually	$250
Total			$1,420

TABLE 8: CAPITAL OFF-STREET, SHARED USE PATH MAINTENANCE 50-YEAR SCENARIO

Maintenance Activity	Time	Long Term Capital Costs					
Seal Coat	Year 10	SF	$0.19	LF	$1.90	Mile	$10,000
Seal Coat	Year 20	SF	$0.19	LF	$1.90	Mile	$10,000
Overlay	Year 30	SF	$2.00	LF	$20.00	Mile	$105,000
Seal Coat	Year 40	SF	$0.19	LF	$1.90	Mile	$10,000
Reconstruction	Year 50	SF	$6.50	LF	$65.00	Mile	$343,000

TABLE 9: ANNUAL CAPITAL BUDGETING REQUIREMENTS

	Full Reconstruction	w/o Full Reconstruction	Before Overlay
Total Cost	$479,000	$136,000	$20,000
Cost / Year	$9,500	$2,700	$717

TABLE 10: CAPITAL UNPAVED TRAIL MAINTENANCE 10-YEAR SCENARIO

Maintenance Activity	Time	Long Term Capital Costs					
Re-grade	Year 2	SF	$0.025	LF	$0.24	Mile	$1,320
Re-grade	Year 4	SF	$0.025	LF	$0.24	Mile	$1,320
Re-grade	Year 6	SF	$0.025	LF	$0.24	Mile	$1,320
Re-grade	Year 8	SF	$0.025	LF	$0.24	Mile	$1,320
Gravel Overlay	Year 10	SF	$0.20	LF	$2.00	Mile	$10,500
Total Cost / 10 Years							$15,800
Avg Cost / Year							$1,580

chapter seven

funding and implementation

Implementation of the proposed bicycle and pedestrian system will require funding from local, regional, state, and federal sources and coordination with multiple agencies. To facilitate funding efforts, this section presents conceptual cost estimates for the proposed system along with a brief description of past expenditures for bicycle and pedestrian facilities. The conclusion of this section provides a brief overview of overall funding and implementation strategies.

As infrastructure projects come under construction, the City should use opportunities such as roadway repaving or utility work to implement network segments that require limited changes or consist of “sign and paint only.” These features can be implemented relatively rapidly at low cost and greatly expand the network, which would both facilitate and encourage increased cycling in the City. This approach allows the City to implement more of the plan at a quicker pace, with the intent of effectively providing alternative mobility choices.

Funding Sources

Many funding sources are potentially available at the federal, state, regional, county, and local levels for Saratoga Springs to implement the projects in the Bicycle and Pedestrian Master Plan. The majority of public funds for bicycle and pedestrian projects are derived through a core group of federal and state programs. Federal funds from the Surface Transportation Program (STP), Transportation Alternatives (TA), and Congestion Mitigation Air Quality (CMAQ) programs are allocated to UDOT and Mountainland Association of Governments and distributed by those agencies at their discretion. Other programs such as the TIGER (Transportation Investments Generating Economic Recovery) grants can be used for “shovel ready” projects that meet federal transportation goals. County or City funds may also be used to construct bicycle and pedestrian facilities.

Table 11 provides a list of funding sources that may be applicable to projects identified in this plan. Most of these sources are highly competitive and require the preparation of applications. For multi-agency projects, applications may be more successful if prepared jointly with other local and regional agencies.

The City should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources, such as volunteer labor during construction, right-of-way donations, or monetary donations towards specific improvements.

TABLE 11: FUNDING OPPORTUNITIES

Funding Opportunity	Eligible Project Types	Qualifications	Lead Agency	Submittal Specifics
Municipal Funds				
Bond Financing	Varies	Varies	Varies	Bonds can be approved by voters to fund a range of projects. A local successful precedent is the 2012 Parks and Trails Bond in Salt Lake County, which authorized $47 million in bond funds to complete the Jordan River Parkway, the Parley's Trail, and acquire land for and construct new parks throughout the County.
Sales Tax	Varies	Varies	Varies	It is possible to pass a specified sales tax that could be used to fund active transportation improvements. Precedents include the San Diego region, which approves a half-cent sales tax in 2008 to generate funds for highway, transit, and local road (including bicycle and pedestrian) projects; and the Great Rivers Greenway in the St Louis area, where voters passed a proposition in 2000 to create a 0.1% sales tax for parks, open space and trails.
Special Assessment or Taxing Districts	Varies	Varies	Local Government	Local municipalities can establish special assessment districts for infrastructure improvements. For example, Urbandale, Iowa established a special assessment program in 1996 for building sidewalks in existing developments where they were missing. Exception clauses allowed residents to apply for hardship status, or to petition for sidewalks on only one side of the street rather than both.
Parking Fees	Varies	Varies	Local Government	Some cities have instituted parking fees to pay for infrastructure improvements. Pasadena, CA installed paid parking meters to gather revenue to maintain streets, alleys, and sidewalks in Old Pasadena, and also to provide new signs, lighting, pedestrian-friendly alleys, and other aesthetic improvements.

TABLE 11: FUNDING OPPORTUNITIES

Funding Opportunity	Eligible Project Types	Qualifications	Lead Agency	Submittal Specifics
Development Impact Fees	Varies	Varies	Local Government	Development impact fees are one-time charges collected from developers for financing new infrastructure construction and operations and can help fund bicycle and pedestrian improvements. Impact fees are assessed through a city's impact fee program.
New Construction	Varies	Varies	Local Government	Future road widening and construction projects are methods of providing bike lanes. To ensure that roadway construction projects provide bike lanes and walkways where needed, it is important that the review process includes a designated bicycle and pedestrian coordinator. Planned roadway improvements in Saratoga Springs should provide bikeways in the City.
State Funds				
ADA Ramps	ADA-related improvement	For missing ADA ramps on State routes only	UDOT	Applications are submitted to the Region Coordinator. Missing ramps can be found in the UDOT database from a recent survey of ramps. (http://udot.utah.gov/main/uconowner.gf?n=13652716548952568)
Safe Sidewalks Program	Sidewalks	Sidewalks on State routes only	UDOT	Applications are submitted to the Region Safe Sidewalk Program coordinator and require scope and cost estimate. Local jurisdiction must agree to maintenance and the sidewalk must be built within one year of money allocation. (http://www.udot.utah.gov/main/uconowner.gf?n=104675223364328443)
Community Development Block Grants-State Administered Program	Street improvement	Best if benefits low- or moderate-income populations. Part of a Consolidated Plan.	HUD, State, and Local Government	The Grantee for these grants cannot be a principal city of a metropolitan statistical area, a city with more than 50,000, or a county with a population with more than 200,000. Applications are submitted to the State. (https://www.hudexchange.info/cdbg-state/)

TABLE 11: FUNDING OPPORTUNITIES

Funding Opportunity	Eligible Project Types	Qualifications	Lead Agency	Submittal Specifics
State Legislation	Legislation dependent	Legislation dependent	State of Utah	State legislatures can create laws that have dedicated bicycle funding components. Two examples of this are the Oregon "bike bill" which requires including bicycle and pedestrian facilities when any road, street or highway is built or rebuilt and the California Bicycle Transportation Account, which provides state funds to cities and counties wishing to improve safety and convenience for bicycle commuters. (http://oregon.gov/ODOT/HWY/BIKEPED/Pages/bike_bill.aspx and http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm)
State Funds				
Transportation Alternatives Program	Bicycle and pedestrian improvement	Funds can be used for construction, planning and design of on- and off-road facilities.	MAG and UDOT	MAG funds are distributed to projects during the Transportation Improvement Plan project selection process. Most TAP projects will have an 80/20 federal/local match split. Projects can include sidewalks, trails, bicycle facilities, signals, traffic calming, lighting and safety infrastructure, and ADA improvements. Rails-to-trails conversions are also allowed. The Recreational Trails Program is included in Transportation Alternatives, as is the Safe Routes to School program. (http://www.fhwa.dot.gov/environment/transportation_alternatives/)
Community Development Block Grants-Entitlement Communities Program	Street improvement	Best if benefits low- or moderate-income populations.	HUD and Local Government	Grantee is a principal city of a metropolitan statistical area, a city with a population over 50,000, or a county with a population over 200,000. Part of a Consolidated Plan. (http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs/entitlement)
Surface Transportation Program	Bicycle and pedestrian improvement	Generally not used on local minor collectors with exceptions for bicycle/ pedestrian walkways.	UDOT	Concept reports due to MPO for consideration of programming funds. (http://www.fhwa.dot.gov/map21/factsheets/stp.cfm)

TABLE 11: FUNDING OPPORTUNITIES

Funding Opportunity	Eligible Project Types	Qualifications	Lead Agency	Submittal Specifics
Congestion Mitigation and Air Quality	Bicycle and pedestrian improvement	Reduce congestion or improve air quality in nonattainment or maintenance areas by shifting travel demand to non-automobile modes.	MAG	Projects must be included in the TIP. MAG calls for projects from local communities each year. (http://www.fhwa.dot.gov/map21/factsheets/cmaq.cfm)
Land and Water Conservation Fund	Bicycle and pedestrian trails, or acquisition of land for trails	Projects that create outdoor recreation facilities, or land acquisition for public outdoor recreation.	DNR	The Land and Water Conservation Fund (LWCF) provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities. The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities and to stimulate non-federal investments in the protection and maintenance of recreation resources. 50/50 match is required, and the grant recipient must be able to fund the project completely while seeking reimbursements for eligible expenses. (http://stateparks.utah.gov/resources/grants/land-and-water-conservation-fund)
Federal Lands Access Program	Planning, engineering, construction, and other activities	Projects must be on, adjacent to, or provide access to federal lands.	UDOT	Fund is administered through UDOT in coordination with the Central Federal Lands Highway Division, which develops a Programming Decisions Committee. The Committee prioritizes projects, establishes selection criteria, and calls for projects. Next call for projects is anticipated for 2015. (http://www.cflhd.gov/programs/flap/ut/)
Rivers, Trails, and Conservation Assistance Program	Planning assistance for bicycle and pedestrian projects.	Staff support for facilitation and planning.	National Park Service	Projects need to be related to conservation and recreation, with broad community support, and supporting the National Park Service's mission. Applicants must submit National Park Service applications by August 1 annually, including basic information as well as letters of support. The local contact is Marcy DeMillion, at 801-741-1012 or marcy_demillion@nps.gov.

TABLE 11: FUNDING OPPORTUNITIES

Funding Opportunity	Eligible Project Types	Qualifications	Lead Agency	Submittal Specifics
Passenger Enhancement	Sidewalk projects and bicycle infrastructure	Sidewalk must be within half mile and bike infrastructure must be within three miles of a transit stop	UTA	Funding can be completed in two ways – the lead agency will share in the cost of the construction, if the submitting agency has already done design and is planning to construct. If the project is on a priority sidewalk list for UTA, UTA will design and construct.
Private or Corporate Funds				
Cambia Health Foundation Children's Health Program	Programs and possibly infrastructure	Projects must improve access to healthy foods, recreation facilities, and encourage healthy behavior for families.	Cambia Health Foundation	Grants are typically in $50,000 - $100,000 range. Focus is on programs. Contact foundation staff at cambiahealthfoundation@cambiahealth.org for additional information. (http://www.cambiahealthfoundation.org/programs/childrens-health)
Bikes Belong Foundation	Bicycle infrastructure	Projects must improve the cycling environment	Bikes Belong	Bike Belong has awarded 272 grants to non-profit organizations and local governments in 49 states and the District of Columbia, since 1999.
Community Fundraising	All	Small dollar amounts	Local agency or non-profit	Lead agency manages the details, marketing, and range of a community fundraising campaign. Successful examples include Softwalks' Kickstarter campaign for sidewalk amenities in New York City, and use of volunteer labor for trail construction in Springdale, Utah. Follow link below for more ideas. (http://www.bicyclinginfo.org/funding/sources-community.cfm)

Implementation

Plan Implementation

Saratoga Springs should regularly revisit their bicycle and pedestrian master plan to review progress in implementing projects. Key review components are described below.

Implementing Projects

City staff should review project implementation within two or three years after plan completion, to document the status of priority projects, and whether new projects from the plan should be added to current implementation efforts. At five years following plan completion, staff members should again evaluate how many priority projects have been implemented.

Maintenance Budget Considerations

As discussed in Chapter Six, developing a city-wide maintenance management plan will be key to ensuring that responsibility is assigned to different departments within the City and that regular maintenance is completed. Furthermore, as the active transportation network grows maintenance costs will also rise. The current budgetary process for managing these growing costs is insufficient. Additional operations and budgetary planning will benefit the City as it handles current and future demand for high quality facilities and associated maintenance activities. It is recommended the Saratoga Springs create a budgetary line item and set aside funds on an ongoing basis for active transportation network maintenance. This will add clarity to the budget and allow the city to prioritize this maintenance in the context of other city needs. It is also recommended that this budget be increased based on network buildout rather than a set percentage increase annually to ensure that funding is adequate for what needs to be maintained.

Building Partnerships

Relationships with regional and local transportation agencies such as UDOT, UTA, Mountainland Association of Governments, and other organizations can be helpful for Saratoga Springs while attempting to build bicycle and pedestrian networks. Staff members should establish strategic working relationships with their counterparts and leadership at these agencies, and at adjacent municipalities. Building partnerships takes time and effort, however, and the results may take some years to come to fruition. Municipalities should take stock of their partnering efforts at the three- to five-year mark following completion of a bicycle and pedestrian master plan. Staff members should re-evaluate their strategies if partnering efforts do not result in some increase of political and agency support of bicycle and pedestrian issues – other strategies or methods of building support may be necessary.

Online Monitoring Feedback

While most local and state transportation divisions have internal methods for monitoring transportation facility conditions, many have additional mechanisms for citizens to report problems. Several online options are available as well. For instance, Salt Lake City has a “Bicycle Route Maintenance Form” online, through which the public can identify cycling routes in need of maintenance work such as sweeping, pothole repair, pavement maintenance, or other problems. The form can be found online through the Salt Lake City Transportation Division website. Other cities, such as Portland Oregon, also seek online feedback on transportation conditions such as desired curb ramps, traffic safety concerns (i.e. speeding, crosswalk needs, visibility, or school zones), and street light problems. Portland’s online forms

can be found through the Portland Bureau of Transportation website. Cities may also state timelines for responding to requests – within a day, several days, or a week – which demonstrates a commitment to the public's traveling needs. Currently, several cities incorporate crowd-sourced or volunteered geographic information (VGI) into maintenance requests. Users can submit requests for repair by sending a GPS-marked photo through a smartphone application, categorizing the photo based on repairs needed (striping, sweeping, pothole repair, etc). Reno, Nevada is one example of a municipality engaging its citizens this way in monitoring for maintenance needs.

Monitoring

This section presents a framework for monitoring the success of implementation of the Plan through benchmarking progress, engaging local advocacy groups, and continuing to generate interest in bicycle and pedestrian issues once a master plan is complete. Evaluation and monitoring allow Saratoga Springs to track progress made as it implements the bicycle and pedestrian master plan. Three major components to monitoring bicycle and pedestrian planning efforts should follow plan adoption:

- Tracking progress on implementing planned projects and meeting the master plan's stated goals;
- Monitoring needs for small-scale spot improvements on bicycle and pedestrian facilities; and
- Monitoring public sentiment and engagement in bicycling and walking issues.

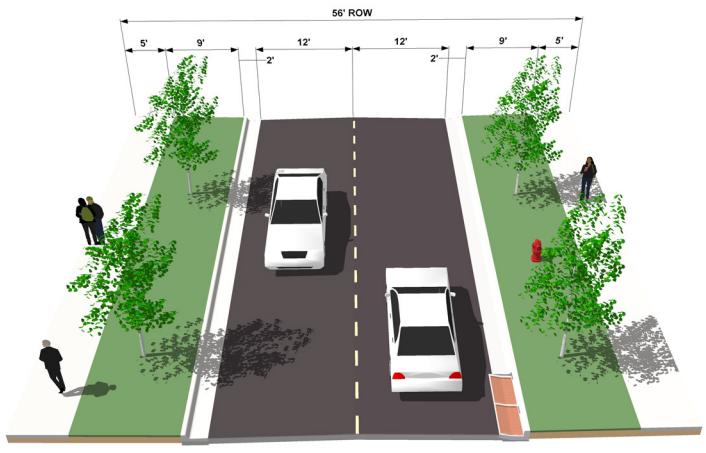
TABLE 12: MONITORING ACTIVITIES

Monitoring Activity	Effort Required
Track plan implementation	Staff time to document projects and policies implemented
Volunteer reporting of maintenance needs	Staff time to receive input and respond to reports
Reactive maintenance	Staff time to respond to maintenance requests
Ongoing Advisory Committee	Staff time to establish policy framework creating an ongoing committee; identify avenue for receiving committee's feedback; and serve as staff liaison at meetings. Committee will set agendas and attend regular meetings.
Ensure project funding through inclusion in Capital Facilities Plan	Staff time to coordinate between planning and budget departments
Proactive maintenance of bicycle and pedestrian facilities	City and/or contractor staff to monitor needs, make needed repairs, plan for funding in municipal public works or operations budgets
Online reporting mechanism for maintenance and repairs	Development of web-based forum to receive public input, staff time to respond to reports
Ongoing local communication around bicycle and pedestrian issues	Maintaining project website, generating new content for website and other communication outlets, developing events to increase participation and enthusiasm, and creating a bicycling ambassadors program
Pursue outside funding for bicycle and pedestrian projects	Staff time to evaluate grant programs, prepare applications, and coordinate with funding agency representatives
Measuring progress by benchmarks	Before-and-after data collection and surveys, review of multiple datasets. Benchmarks could include: • Number of people bicycling and walking on off-street facilities • Mileage of on-street bicycle facilities • Percentage of households within ¼ miles of a bicycle facility • Number of pedestrians • Percentage of K-8 students biking and walking to school
Identify additional financing opportunities for projects, such as public-private partnerships or impact fees	Staff time to build partnerships, and potential need for outside consultant to identify defensible impact fees and ensure compliance with state and local laws.
Regular bicycle and pedestrian counts	Partner with local advocacy groups, boy scouts, schools, and MAG to conduct annual bicycle and pedestrian counts and an annual monitoring program that reviews and compares these counts. Additionally, Saratoga Springs can require that all traffic study counts include bicycles and pedestrians to estimate bicycling levels and changes in bicycling levels over time.
Bicycling and Walking Audits	Conduct bicycle and walking audits as part of outreach strategies for new development projects. A bike/walk audit leads stakeholders on a set course to discuss bicyclist/pedestrian safety concerns and strategies to improve safety.

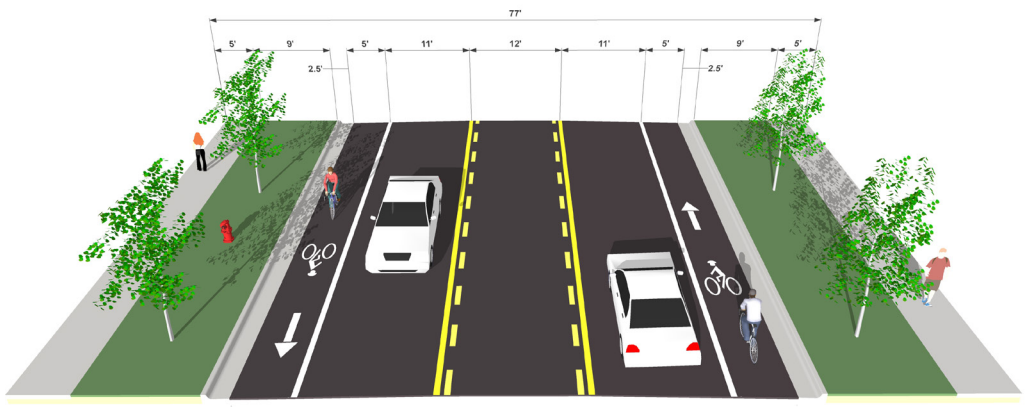
Appendix A:

Recommended Cross-Sections

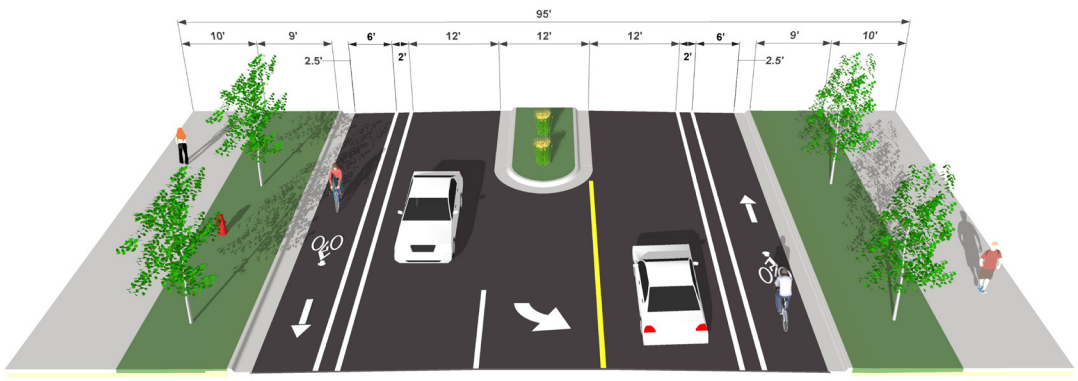
Local Street



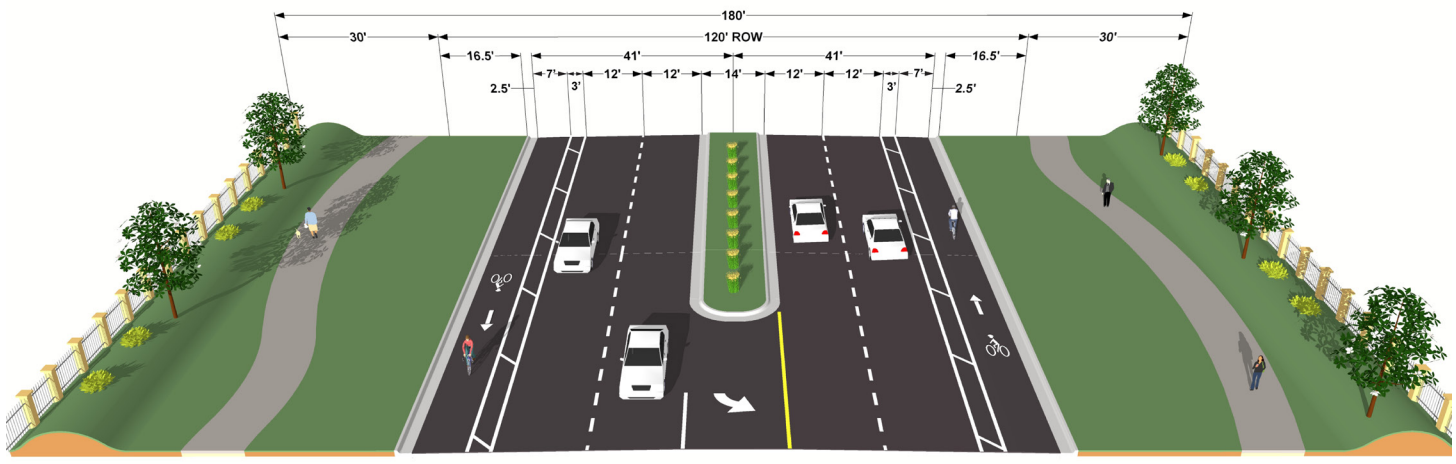
Collector



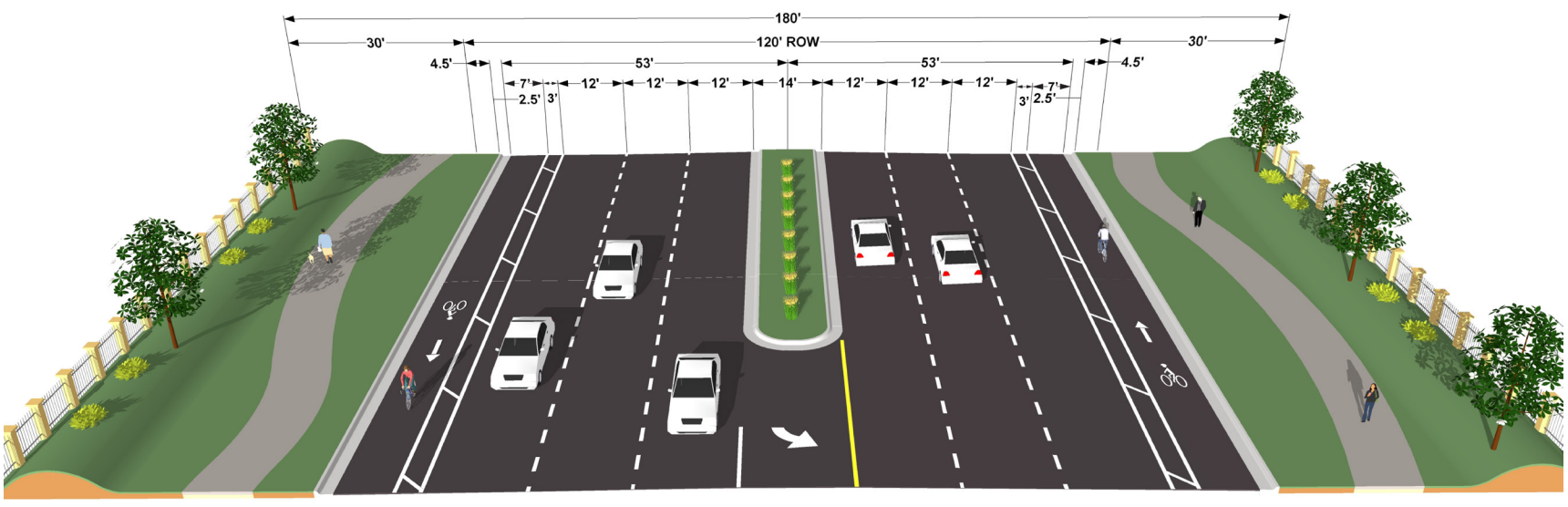
Minor Arterial



Major Arterial



Principal Arterial



Appendix B:

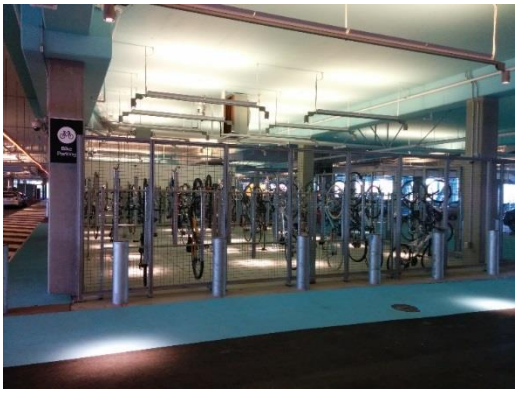
Bicycle Parking Best Practices

Bicycle Parking Best Practices

Bicycle parking is an important end-of-trip facility for those riding bicycles for any purpose, allowing secure storage of bicycles and comfortable access to destinations. The purpose of this documents is to provide Saratoga Springs with best practices in developing a bicycle parking ordinance.

There are many alternatives in how to approach bicycle parking. To develop best practices the Association for Pedestrian and Bicycle Professionals' (APBP) Bicycle Parking Guidelines Manual (2nd Edition) was reviewed as well as code language and design standards from nearby communities like Lindon, Lehi, Orem, South Salt Lake. Portland Oregon, often cited as one of the most bicycle friendly communities in the nation, was also consulted.

Provide Short and Long-term Bicycle Parking



Providing parking for both short-term users and long-term users is important component in providing adequate bicycle parking for different types of users. Short-term parking in the form of bicycle racks provide a convenient and semi-secure location for visitors who will only be parking for a few hours or less. This encourages bicycle use for utilitarian trips. Long-term parking, in the form of bicycle lockers or indoor bike rooms, provide additional security and protection from weather. This is provided to serve employees and residents who will be parking their bicycles for longer than just a few hours. Providing long-term parking can encourage bicycle use for commute trips.

Short-term parking is typically provided at most land uses, while long-term parking is often required only for multi-family developments and larger employers. For example, in Portland, no long-term bicycle parking is required on a site where there is less than 2,500 square feet of gross building area. As another example, Lehi only requires offices with more than 250 automobile parking stalls to provide long-term bicycle parking storage. Other office users are encouraged to provide long-term bicycle parking, but it is not a requirement. As an incentive, Lehi also offers parking vehicles parking reduction of one vehicle stall for every two indoor bicycle parking stalls up to a 10% reduction in required vehicle stalls.

Provide an Adequate Amount of Parking for Appropriate Land Uses

Adequate bicycle parking should be provided at most land uses. However, determining the appropriate amount of bicycle parking is a key concern in developing a code. Providing too little will reduce the likelihood of encouraging bicycle use and frustrate users. Providing too much would add additional costs to development with little benefit.

Some cities have elected to use vehicular parking to determine bicycle parking requirements. In this case the total amount is based on a percentage of the total number of required vehicular stalls. As an example, Lehi sets the number of required bicycle stalls at five percent of the total required number of vehicular parking stalls, with a minimum 2 stalls. This applies to all land use types.

The APBP Bicycle Parking Guidelines Manual sets its recommendations based on a bicycle mode share goal of five percent, bicycle ownership rates, and U.S. Green Building Council's Leadership in Energy Development and Environmental Design (LEED) credit levels for alternative transportation. Different rates are applied based on land use. However, rather than listing out every possible land use, uses are grouped together (see Table 1).

Table 1:Example APBP Bicycle Parking Requirement Recommendations

Type of Activity	Long-term Bicycle Parking Requirement	Short-term Bicycle Parking Requirement
Single Family Homes	No spaces required	No spaces required
Multifamily dwelling		
a. With a private garage	No spaces required	0.10 spaces for each bedroom Minimum of 2 spaces
b. Without a private garage for each unit	0.5 spaces for each bedroom. Minimum of 2 spaces	0.10 spaces for each bedroom. Minimum of 2 spaces
c. Senior Housing	0.5 spaces for each bedroom. Minimum of 2 spaces.	0.10 spaces for each bedroom. Minimum of 2 spaces
Non-assembly cultural (Library, Government Building, etc.)	1.5 spaces for every 10 employees. Minimum of 2 spaces.	1 space for each 8,000 sqft of floor area. Minimum of 2 spaces
Assembly (church, theaters, etc.)	1.5 spaces for every 20 employees. Minimum of 2 spaces.	Spaces for 5% of maximum daily attendance
Health care/hospitals	1.5 spaces for every 20 employees. Minimum of 2 spaces.	1 space for each 20,000 sqft of floor area. Minimum of 2 spaces
Education		
Day-care for 15 or more children	1.5 spaces for each 20 employees or one for each 50,000 sqft of floor area, whichever is greater. Minimum of 2 spaces.	1 space for each 20 students of planned capacity. Minimum of 2 spaces
Nursery schools, kindergartens, and elementary schools (1-3)	1.5 spaces for each 10 employees. Minimum of 2 spaces.	1.5 space for each 20 students of planned capacity. Minimum of 2 spaces
Elementary (4-6), junior high, and high schools	1.5 spaces for each 10 employees plus 1.5 spaces for each 20 students of planned capacity. Minimum of 2 spaces.	1.5 space for each 20 students of planned capacity. Minimum of 2 spaces
Colleges and universities	1.5 spaces for each 10 employees plus 1 space for each	1.5 spaces for each 10 employees plus 1.5 spaces for

Type of Activity	Long-term Bicycle Parking Requirement	Short-term Bicycle Parking Requirement
	10 students of planned capacity; or 1 space for each 20,000 sqft of floor area, whichever is greater.	each 20 students of planned capacity. Minimum of 2 spaces.
Rail/bus terminals and stations/airports	Spaces for 7% of projected a.m. peak period daily ridership	Spaces for 2% of a.m. peak period daily ridership.
Retail (general food sales or groceries)	1 space for each 10,000 sqft. of floor area. Minimum of 2 spaces.	1 space for each 2,000 sqft. of floor area. Minimum of 2 spaces.
General retail	1 space for each 10,000 sqft. of floor area. Minimum of 2 spaces.	1 space for each 5,000 sqft. of floor area. Minimum of 2 spaces.
Office	1.5 spaces for each 10,000 sqft. of floor area. Minimum of 2 spaces.	1 space for each 20,000 sqft. of floor area. Minimum of 2 spaces.
Auto Related	1 space for each 10,000 sqft. of floor area. Minimum of 2 spaces.	1 space for each 20,000 sqft. of floor area. Minimum of 2 spaces.
Off-street parking lots and garages available to the general public	1 space for each 20 automobile spaces. Minimum of 2 spaces.	Minimum of 6 spaces of 1 per 10 auto spaces.
Manufacturing and production	1 space for each 12,000 sqft of floor area. Minimum of 2 spaces	Number of spaces to be prescribed by the Planning Director. Consider minimum of 2 spaces at each public building entrance.

Parking Location

Short-term bicycle parking should be easy to locate and close to destination entrances. Making bicycle parking highly visible not only helps to encourage bicycle use, but also makes it more secure by ensuring more “eyes on the street”. Distances in the codes reviewed vary between fifty to a hundred feet from building entrances. When possible, short-term parking should also be located in areas that are protected from weather under existing structures.

Long-term bicycle parking should be easy to locate through the use of signage, but should have controlled access. As an example, to provide security, long-term bicycle Portland requires that long-term bicycle parking must be in at least one of the following locations:

(1) In a locked room;

(2) In an area that is enclosed by a fence with a locked gate. The fence must be either 8 feet high, or be floor-to-ceiling;

(3) Within view of an attendant or security guard;

(4) Within 100 feet of an attendant or security guard;

(5) In an area that is monitored by a security camera; or

(6) In an area that is visible from employee work areas.

Secured to Hard Surface

Short-term bicycle parking should be secured to a hard surface to enhance security and reduce the risk of theft. Hard surfaces also make it easier and more convenient for users to access bicycle parking. This can include concrete or asphalt surfaces.

Design

The design of bicycle spacing should focus on making parking as easy and convenient as possible for all users. To accommodate a conventional bicycle the following layout design is recommended.

- A bicycle parking space is the space that one bicycle typically occupies (e.g. a U-shaped bicycle rack has two bicycle parking spaces, one on either side of the rack).
- Each required bicycle parking space should be at least 2.5 feet in width (5 feet between parallel racks) by 6 feet in length to allow sufficient space between parked bicycles.
- The rack supports the bicycle frame at two contact points on the frame and allows the bicycle frame and one wheel to be locked to a bicycle rack with a high security, U-shaped shackle lock if both wheels are left on the bicycle.
- A bicycle six feet long can be securely held with its frame supported so that the bicycle cannot be pushed or fall in a manner that will damage the wheels or components.
- The rack should be securely anchored.
- Each bicycle parking space should be accessible without moving another bicycle.
- There should be an aisle **at least** 4 feet wide behind all required bicycle parking to allow room for bicycle maneuvering.
- The area devoted to bicycle parking should be a hard surface.
- Racks should be located with **at least** 30 inches clearance in all directions from any obstruction, including but not limited to other racks, walls, and landscaping. Large retail uses such as supermarkets and grocery stores should be encouraged to locate racks with a 36 inch clearance

in all directions from any vertical obstruction, including but not limited to other racks, walls, and landscaping.

In developing appropriate dimensions, the city should also consider alternative bicycle types that often have different design considerations. Accommodating tandem, recumbent, folding bicycles, adult tricycles, and cargo bicycles should be considered in determining appropriate bicycle parking design. However, this should also be weighed against the additional space and costs of accommodating non-conventional bicycles. The codes that were reviewed did not include designs specifically focused on accommodating different types of bicycles. However, certain land uses like senior living centers and grocery stores may benefit from having different design requirements.

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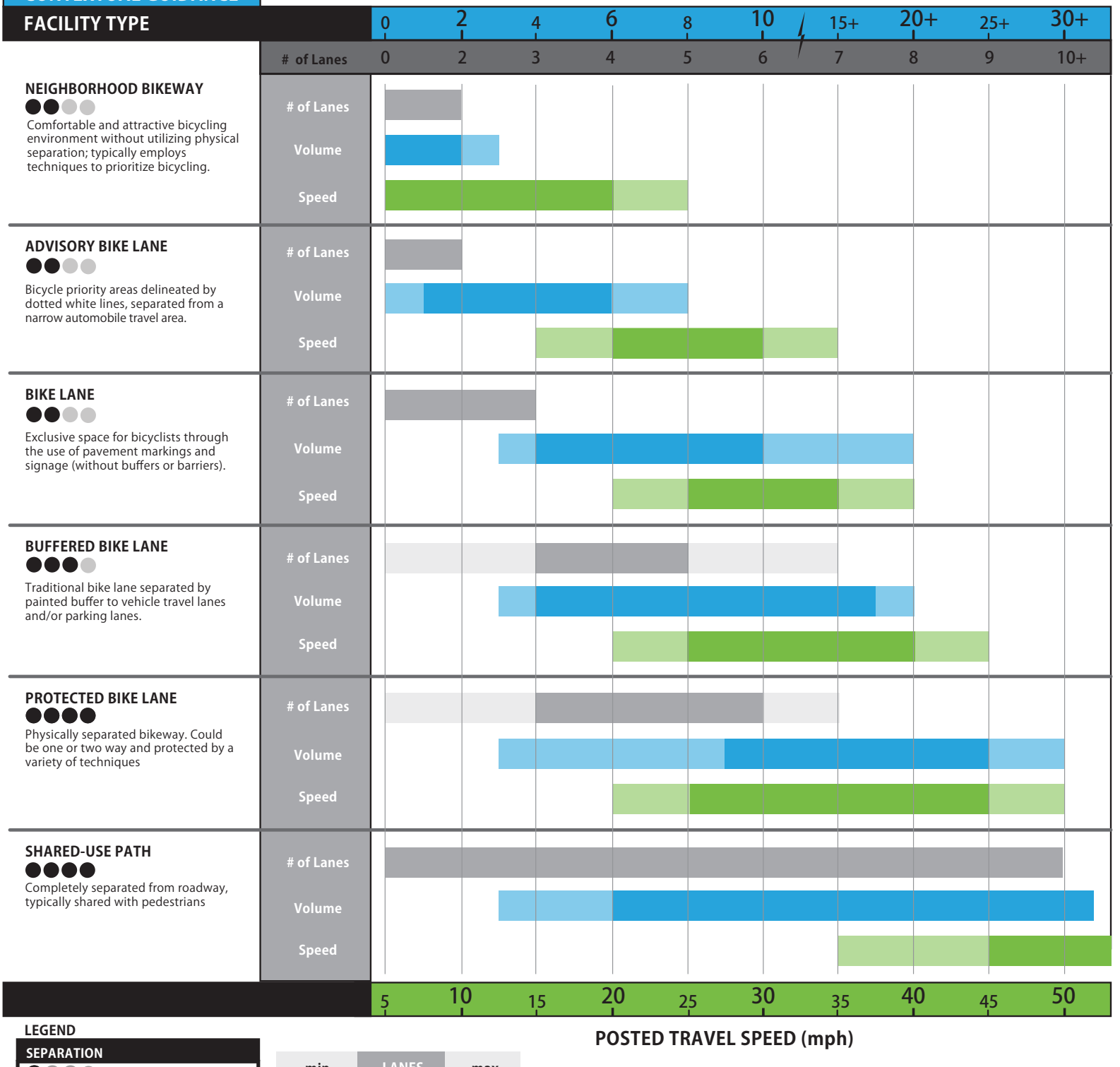
Appendix C:

Bike Facility Decision Matrix

BICYCLE FACILITY CONTEXTUAL GUIDANCE



LEGEND

SEPARATION	
●○○○	Minimal Separation
●●○○	Moderate Separation
●●●○	Good Separation
●●●●	High Separation

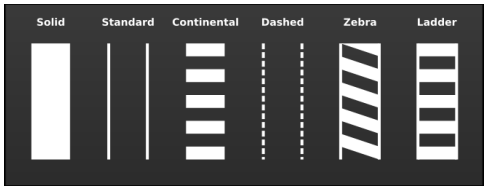
min	LANES	max
min	VOLUME	max
min	SPEED	max
Acceptable	Desired	Acceptable

Appendix D:

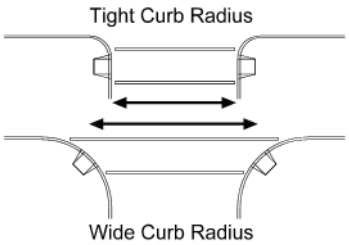
Bicycle and Pedestrian Facility Toolbox

Bicycle and Pedestrian Facility Toolbox

Pedestrian Crossing Treatments

Tool	Description	Benefits	Consideration
Marked Crosswalk  *Image source: www.walkinginfo.org/pedsafe/*	Provide designated pedestrian crossings at: • Pedestrian generators • Crossings with significant pedestrian volumes (at least 15 per hour) • Crossings with high vehicle-pedestrian collisions	Signal a clear "channel" for pedestrian pathways to both pedestrians and vehicles	Marked crosswalks alone should not be installed on multi-lane roads with more than about 10,000 vehicles/ day.
High-Visibility Signs and Markings 	Includes a family of crosswalk striping styles such as the "ladder" and the "continental" High-visibility colored signs are posted at crossings to increase driver awareness of the pedestrian crossing	Increase driver awareness of unexpected condition or location where drivers need to exercise a higher level of caution based on potential conflicts with more vulnerable road users	Beneficial in areas where drivers might not expect a pedestrian crossing or where a higher level of driver attention is required due to potential pedestrian and bicycle conflicts
Advanced Yield Lines *Image source: www.saferoutesinfo.org*	Standard white yield limit lines are placed in advance of marked, uncontrolled crosswalks.	Increases the pedestrian's visibility to motorists Reduces the number of vehicles encroaching on the crosswalk Indicates to drivers where to stop	Useful in areas where pedestrian visibility is low and in areas with aggressive drivers Addresses the multiple-threat collision on multi-lane roads.

Pedestrian Crossing Treatments

Tool	Description	Benefits	Consideration
In-Street Pedestrian Crossing Signs *Image source: http://mutcd.fhwa.dot.gov*	Regulatory pedestrian signage posted on lane edge lines and road centerlines May be used to remind road users of laws regarding right of way at an unsignalized pedestrian crossing	Highly visible to motorists and has a positive impact on pedestrian safety at crosswalks Good driver compliance with yielding to pedestrians though compliance decreases on multi-lane roadways	Mid-block crosswalks Unsignalized intersections Low-speed areas Two-lane roadways May need to be removed in winter in snowy climates
Curb Extension/ Bulb Outs 	Traffic-calming measure meant to slow traffic and increase driver awareness Consists of an extension of the curb into the street, making the pedestrian space (sidewalk) wider	Narrows the distance that a pedestrian has to cross and decreases pedestrian exposure time Increases the sidewalk space on the corners. Improves pedestrian visibility Lowers vehicle turning speeds Provides opportunity to store and treat storm water runoff	Suitable along most roadways and intersections so long as a parking lane shadows the curb extension Need to consider impact on transit service and could provide extended curb extension that extends length of bus stop so long as there is another travel lane to bypass the stopped bus Need to consider larger vehicle turning paths
Reduced Curb Radii  *Image Source: www.ci.austin.tx.us*	The radius of a curb is reduced requiring motorists to make a tighter turn	Narrow the distance pedestrians have to cross Reduce traffic speeds and increase driver awareness (like curb extensions)	Beneficial on streets with high pedestrian activity, on-street parking, and no curb-edge transit service More suitable for wider roadways and roadways with low volumes of heavy truck traffic

Pedestrian Crossing Treatments

Tool	Description	Benefits	Consideration
Raised Crosswalks	Marked crosswalks that are raised to act simultaneously as a traffic calming device	Provide superior safety advantage to pedestrians with demonstrated increased yielding by drivers	Appropriate on streets with moderate traffic Particularly effective where heavily used trails cross a road
Median Pedestrian Island *Image source: http://thegoodcity.wordpress.com/category/transportation/*	Raised islands are placed in the center of a roadway, separating opposing lanes of traffic with cutouts for accessibility along the pedestrian path, providing a refuge for people crossing	This measure allows pedestrians to focus on each direction of traffic separately, and the refuge provides pedestrians with a better view of oncoming traffic as well as allowing drivers to see pedestrians more easily. It can also split up a multi-lane road and act as a supplement to additional pedestrian tools.	Recommended for multi-lane roads wide enough to accommodate an ADA-accessible median
Staggered Median Pedestrian Island *Image source: www.pedbikeimages.org/*	Crosswalks in the roadway are staggered such that a pedestrian crosses half the street and then must walk *towards* traffic to reach the second half of the crosswalk Must be designed for accessibility by including rails and truncated domes to direct sight-impaired pedestrians along the path of travel.	Increase in the concentration of pedestrians at a crossing and the provision of better traffic views for pedestrians Motorists are better able to see pedestrians as they walk through the staggered refuge.	Best used on multi-lane roads with obstructed pedestrian visibility or with off-set intersections Must be designed for accessibility by including rails and truncated domes to direct sight-impaired pedestrians along the path of travel

Pedestrian Crossing Treatments

Tool	Description	Benefits	Consideration
In-Roadway Warning Lights *Image Source: www.tfhrc.gov/*	Both sides of a crosswalk are lined with pavement markers, often containing an amber LED strobe light Lights may be push-button activated or activated through passive pedestrian detection	Provides a dynamic visual cue Increase effectiveness in low light conditions	Best in locations with low bicycle ridership, as the raised markers present a hazard to bicyclists May not be appropriate in areas with accumulating snow due to decreased visibility of lights Not as effective in locations with bright sunlight
Overhead Flashing Beacons *Image source: tti.tamu.edu*	Flashing amber lights installed on overhead signs in advance of the crosswalk or at the crosswalk	Blinking lights during pedestrian crossing times increase the number of drivers yielding for pedestrians and reduce pedestrian-vehicle conflicts May also improve conditions on multi-lane roadways.	Best used in places where motorists cannot see a traditional sign due to topography or other barriers
Rapid Flash Beacons *Image source: mutcd.fhwa.dot.gov*	Replace the traditional slow flashing incandescent lamps with rapid flashing LED lamps The beacons may be push-button activated or activated with pedestrian detection	Very effective as measured by increased driver yielding compliance (65-80% compliance) Solar panels reduce energy costs associated with the device Wireless capabilities reduces installation cost	Appropriate for single and multi-lane roadways Effectiveness decreases as the number of travel lanes increases

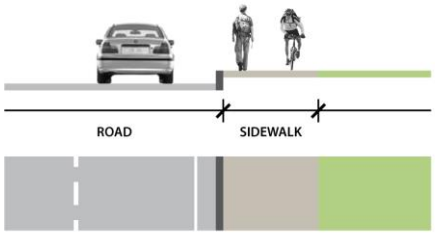
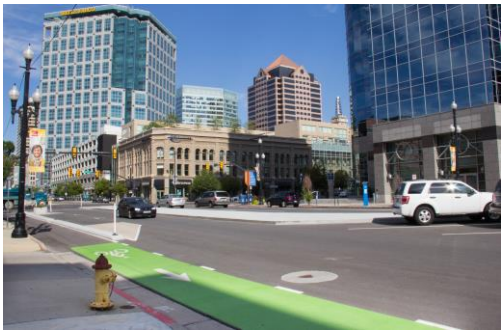
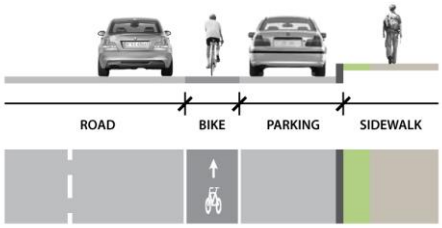
Pedestrian Crossing Treatments

Tool	Description	Benefits	Consideration
Pedestrian Hybrid Beacon 	Pedestrian-actuated beacon that is a combination of a beacon flasher and a traffic control signal When actuated, the beacon displays a yellow (warning) indication followed by a solid red light During pedestrian clearance, the driver sees a flashing red "wig-wag" pattern until the clearance interval has ended and the signal goes dark	Reduces pedestrian-vehicle conflicts and increases driver compliance with yielding to pedestrians (80-90% compliance) Reduces vehicle delay when compared to standard pedestrian traffic signal	Useful in areas where it is difficult for pedestrians to find gaps in automobile traffic to cross safely, but where normal signal warrants are not satisfied Based on higher cost, most appropriate for higher speed multi-lane roadways.
Pedestrian Countdown Signals *Image source: www.livablestreets.com*	Pedestrian signal head that displays the amount of time remaining during the pedestrian clearance interval	Reduces pedestrian-vehicle conflicts and slows traffic speeds Studies have shown it reduces pedestrian versus vehicular crashes by 25%	Required by the MUTCD for all signalized intersections With pedestrian signal heads

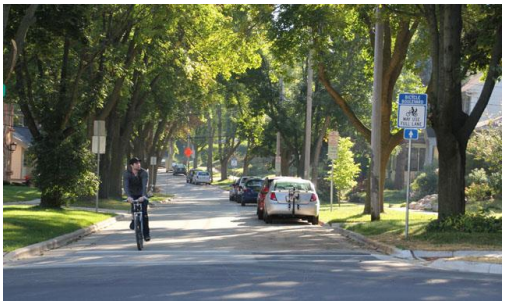
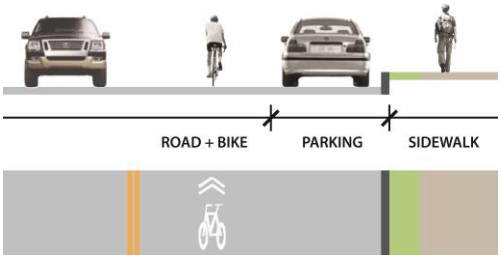
Pedestrian Corridor Treatments

Tool	Description	Benefits	Consideration
Sidewalks	All-weather walking surface outside the travel way	Provides pedestrians a safer and more enjoyable location to walk along a roadway	Should be consider along all corridors
Corridor Lighting *Image source: www.pedbikeimages.org/*	Roadway and pedestrian sidewalk lighting to improve driver visibility of pedestrians during low light conditions	Improves driver visibility of pedestrians and provides them more time to react to a potential conflict	Should be considered along all corridors
Landscape Buffer	Providing a 5-12' landscaping strip between the edge of roadway and the pedestrian path	Improves pedestrian walking environment by providing buffer between moving traffic and sidewalk Provides area to install street furniture and utilities to help maintain a clear pedestrian walkway Provides an area to store and treat storm water run-off	Should be considered on most corridors where right-of-way width permits

Bicycle Facility Treatments

Tool	Description	Benefits	Consideration
Sidewalk Bikes Permitted 	Designed for bicycle usage to avoid conflicts between single direction motor vehicle traffic	Sidewalks will include additional signage, ground markings, and special curb cuts to facilitate bicycle travel Physical separation between wheeled and non-wheeled users is recommended to minimize potential conflicts between users	Interim solutions that connect two green facilities together Should be used only when there is no immediate solution to resolve a connection between two green facilities
Buffered or Protected Bike Lane 	Created by painting a flush buffer zone between a bike lane and the adjacent travel lane Buffers may also be provided between bike lanes and parking lanes to demarcate the door zone and discourage bicyclists from riding closely next to parked vehicles Buffer zones may be more permanent through the use of concrete barriers, parking, planters, or differences in elevation	Provides a warning for motorists and bicyclists that the street is multi-purpose Buffered bike lanes increase the riding comfort for bicyclists as they increase separation from vehicular traffic and/or parked vehicles	Should be considered at locations where there is excess pavement width or where increased separation is desired
Bicycle Lane 	Portion of the roadway designated for preferential use by bicyclists One-way facilities that typically carry bicycle traffic in the same direction as adjacent motor vehicle traffic on the right side of the roadway	Provide dedicated space from vehicular traffic Reduce stress caused by acceleration and operating speed differentials between bicyclists and motorists	Desirable on collectors and some arterials where traffic volumes and speeds are higher Typically installed by reallocating existing street space by narrowing existing lanes, removing travel lanes or parking lanes, and/or reconfiguring parking lanes

Bicycle Facility Treatments

Tool	Description	Benefits	Consideration
Bicycle Boulevard  *Image source: www.pedbikeimages.org/*	Low traffic volume and low speed streets that are designated to give cyclists the priority. Use signs, pavement markings, and traffic calming measures to discourage through trips by motor vehicles and provide cyclists with enhanced crossing of arterial streets.	Provide cyclists of all abilities with low stress route Enhanced safety due to reduced exposure to moving traffic Provide enhanced wayfinding	Installed on streets with less than 3000 ADT and travel speeds below 25 mph Install traffic calming to reduce travel speeds or traffic volumes Coordinate with emergency responders on impacts to their response time
Marked Shared Lane (Sharrow) 	Marking alerts road users to the lateral position bicyclists are likely to occupy within the traveled way to be most visible to drivers and to help avoid conflicts with parked cars	Provide guidance to bicyclists and motorists in situations where separate bicycle facilities are not provided Encourage safer passing practices (including changing lanes, if necessary)	Installed where there is insufficient space to allocate to a dedicated bicycle facility in the right most through travel lane Generally used on collector streets where a more comfortable bicycle facility cannot be provided due to right-of-way constraints
Advisory Bike Lane *Image source: Minneapolis Dept. of Public Works*	Uses dashed lane line to distinguish bike lane and allow for drivers to encroach into the bike lane when cyclists are not present to avoid an oncoming vehicle in the opposite direction	Brings greater awareness to the roadway as shared space Encourages slower vehicular travel speeds and reduces cut through traffic	Generally used on streets too narrow for traditional bike lanes and lower volume streets Do not impact usable roadway width

Bicycle Facility Treatments

Tool	Description	Benefits	Consideration
Grade Separated Crossing *Image source: omahamidcenturymodern.blogsome.com*	Pedestrian-only overpass or underpass over a roadway or topographical barrier Provides complete separation of pedestrians from motor vehicle traffic, normally where no other pedestrian facility is available	Allow for the uninterrupted flow of pedestrian movement separate from vehicular traffic Reduces energy expenditure for cyclists by spanning existing topography	Most feasible and appropriate in extreme cases where pedestrians must cross roadways such as freeways and high-speed, high-volume arterials This measure should be considered only with further study due to the cost implications
Back-in Angle Parking *Image source: www.pedbikeimages.org/*	Reorients traditional head-in parking to allow drivers to back into a diagonal parking space	Improves driver visibility of approaching traffic and cyclists Improves vehicle passenger safety, especially for children, as open doors of the vehicle block pedestrian access to the travel lane and guide pedestrians to the sidewalk Eases loading of cargo into trunk of vehicle	Highly recommended in locations where diagonal parking is adjacent to bike lane Avoid installing near locations where vehicle overhang could cause damage or danger pedestrians on the sidewalk Sometimes can require outreach to drivers to educate them on the change in parking orientation

Bicycle Parking & Maintenance

Tool	Description	Benefits	Consideration
Bike Rack	Bicycle racks are devices to which bicycles may be securely attached. The rack itself should be securely attached to the ground or a stationary object such as a building. Weather protection may also be provided in the form of a cover or shield. Bike racks are appropriate for short-term use.	Provides bicyclists with short-term parking Encourages bicycle use	Possible risk of bicycle theft or vandalism If racks are not covered, bicycles may be exposed to the elements
Bicycle Locker	A locker or box in which a single bicycle can be placed and locked. Lockers may either be available on a first-come-first-served basis and/or for a fee. Users can reserve lockers for several months at a time for an established fee, or can rent as needed on a short-term basis.	Good for long-term use Encourages bicycle use Prevents theft and vandalism Typically provides protection from the elements	More expensive than bike racks Potential to be misused such as for storage of things besides bicycles
Bicycle Repair Stands	Do-it-yourself bicycle repair stands offer an air pump and basic tools to make minor bicycle repairs.	Encourages bicycle use by removing concerns related to common maintenance and repair issues.	Repair stands should be located near short-term and long-term bicycle parking.

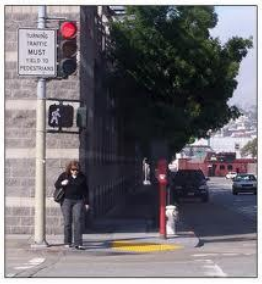
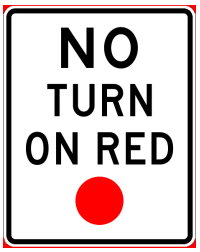
Bicycle Facility Intersection Treatments

Tool	Description	Benefits	Consideration
Enhanced Intersection Markings *Image source: NACTO*	Consists of using colored pavement markings or additional bike symbols within the intersection to increase the visibility of cyclists to drivers, identify areas of potential conflict, and provide guidance to cyclists on their intended alignment through the intersection.	Increases visibility of cyclists Raises driver and cyclists awareness of conflict areas Increases driver yielding behavior Increases cyclists comfort level	Should be used reluctantly in area where there is potential for conflict between cyclists and drivers Typical application locations include across wide intersections and driveways and along enhanced bikeway facilities
Bicycle Box 	A bicycle box is a marked on-street waiting area designed to improve cyclist visibility when stopped. There are two types of bicycle boxes: two-point left turn and advanced stop line.	Cyclists are more visible to automobiles and not forced to wait within traffic Cyclists may be allowed to travel in directions that automobiles are not	Drivers and other cyclists may not be aware of how bike boxes function The two-point left may take more time to cross the intersection Traffic level of service may be affected by advanced stop line bike boxes
Bicycle Detection Loop 	Embedded loop detector in roadway surface detects a bicycle	Decreases delay for cyclists at signalized intersection Encourages cyclists to wait for signal indication	Should be considered in locations where there is a high number of cyclists or low number of vehicles that would activate the signal

Bicycle Facility Intersection Treatments

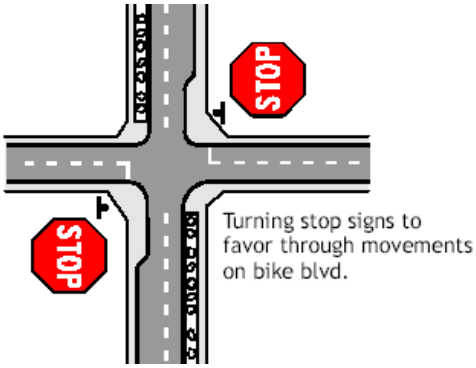
Tool	Description	Benefits	Consideration
Bicycle Signal	Signals dictate traffic behaviors and patterns. Bicycle signals give priority phasing for bicycle crossing. They can also inform cyclists and drivers about the interaction between bicycles and traffic.	Improves safety by allowing cyclists to cross intersection without interacting with automobiles Traffic signals are understood by cyclists and drivers Opportunity to combine phasing with crosswalks	Added cost Possible negative impacts to intersection level of service

Signalized Intersection Treatments

Tool	Description	Benefits	Consideration
Leading Pedestrian/Bicycle Intervals 	Traffic signal timing that provides pedestrians/bicyclists with a few second head start prior to motor vehicles on the parallel roadway being given the green light	Increases pedestrian visibility for turning vehicles and driver yielding compliance for pedestrians Helps reduce conflicts between turning vehicles and pedestrians	Can be applied at most signalized intersections especially where there is a high number of turning vehicles and pedestrians conflicts
Protected Left Turn Phasing	Traffic signal phasing that only allows left turning vehicles to enter the intersection	Eliminates conflicts between left turning vehicles and pedestrians which is one of the most common type of crash involving a pedestrian and vehicle	Used primarily on higher volume roadways where the left turning vehicle must cross multiple approach lanes and there is no left turn storage issues
No Turn on Red (signs) 	Posting regulatory signs that restrict vehicles from turning on red signal indications	Eliminates potential conflicts between turning vehicles and pedestrians or bicyclists that might be crossing during the conflicting traffic signal phase.	Should be considered in most urban locations where there are a high number of pedestrians Turn restriction can be limited to certain hours when pedestrians are most likely to be present at the intersection
Retiming Clearance Intervals	Modifying the pedestrian clearance intervals at	Increases the comfort level for all pedestrians	Should be considered around schools and senior centers where

	signalized intersections to provide adequate time for a pedestrian to cross the intersection at a slower walking speed that 3.5 ft/s	and reduces the need to rush to cross the street	pedestrians with slower walking speeds are anticipated

Bicycle Corridor Signing Treatments

Tool	Description	Benefits	Consideration
Way-finding signs *Image source: NACTO*	Posting a series of pedestrian and bicycle way-finding signs that orient pedestrians to walking and biking destinations along a corridor	Encourages more walking and bike trips by providing people with a reference point to a destination	Applied in locations where there are pedestrian and bicycle destination or attractors Should be located in areas where will not obstruct the pedestrian walkway or create sign clutter Should be scaled to be legible for appropriate user Should not be used to promote private businesses
Stop Sign Reorientation  	Reorientating two-way stop controlled approaches to provide bike boulevard approaches with the right-of-way at the intersection	Reduces delay and energy expenditure for cyclists and thereby encourages more cyclists to use the street	Should perform stop warrants analysis prior to removing Repeal existing city ordinances prior to implementation May need to provide additional traffic calming on bike boulevard to discourage additional cut-through traffic and higher travel speeds Should evaluate traffic operation impacts on stop controlled approaches

Traffic Calming Treatments

Tool	Description	Benefits	Consideration
Median Barriers *Image source: http://streetswiki.wikispaces.com/Traffic+Diverters*	Islands located along the centerline of a street and continuing through an intersection so as to block through movement at a cross street.	Can improve safety by prohibiting dangerous turning movements Can reduce traffic volumes on a cut-through route that crosses a major street	Good for local street connections to main streets where through traffic along the continuing local street is a problem and main streets where left-turns to and/or from the side street are unsafe. Require available street width on the major street
Speed Humps (Sinusodal) 	Rounded, raised areas placed across the roadway. They are generally as wide as the lane or roadway and are 10 to 14 feet long (in the direction of travel).	Relatively inexpensive Relatively easy for bicycles to cross Effective in slowing speeds	Good for locations where very low speeds are desired and reasonable, and where noise and fumes are not a major concern. Commonly applied in residential areas with low traffic volumes. Smoother than traditional speed humps
Speed Lumps/Speed Cushions *Image source www.mesaaz.gov/speed/speedFAQ.aspx*	Several small speed humps installed in a series across a roadway with spaces in between them.	Allow larger vehicles, especially fire trucks, to straddle them without slowing down Bicyclists may pass between speed cushions	Cushions should be clearly marked for visibility.

Traffic Calming Treatments

Tool	Description	Benefits	Consideration
Speed Tables	Flat-topped speed humps often constructed with brick or other textured materials on the flat section. Their long flat designs allow higher speeds than Speed Humps. Textured materials improve the appearance of speed tables, and draw attention to them.	Smoother for large vehicles	Good for locations where low speeds are desired but a somewhat smooth ride is needed for larger vehicles.
Raised Crosswalks	Speed Tables outfitted with crosswalk markings and signage to facilitate pedestrian crossings, providing pedestrians with a level street crossing. Also, by raising the level of the crossing, pedestrians are more visible to approaching motorists.	Provide safer crossing for pedestrians Channelize pedestrians to an attractive crossing	Good for locations where vehicle speeds are excessive and pedestrian volumes are high. Impacts on drainage need to be considered.
Raised Intersections *Image source: www//transitutopia.blogspot.com*	Flat raised areas covering an entire intersection, with ramps on all approaches and often textured materials. The raised intersection makes crosswalks more visible by motorists and perceived as "pedestrian territory".	Increases awareness of pedestrians May be used as a neighborhood gateway feature Calm two streets at once	Good for intersections with substantial pedestrian activity.

Traffic Calming Treatments

Tool	Description	Benefits	Consideration
Traffic Circles	Traffic circles are small roundabouts, with raised islands. Traffic circulates around the central island.	Can reduce crash frequency and severity Can have positive aesthetic value Placed at an intersection, they can calm two streets at once	Good for calming residential or local intersections, where large vehicles are not a major concern but speeds, volumes, and safety are problems. May require elimination of some on-street parking Island landscaping must be maintained
Mini Roundabouts	Operate in the same manner as larger roundabouts, with yield control on all entries and counterclockwise circulation around a mountable (traversable) central island.	Can often be developed to fit within existing right-of-way constraints. May provide less delay for a critical movement or for an overall intersection in comparison to other intersection alternatives. Do not allow opportunities for landscaping in the central island. As with comparably sized traditional intersections, landscaping opportunities are limited to the periphery of the intersection.	Most effective in lower speed environments in which all approaching roadways have posted speed of 30 mph or less Generally not recommended for intersections with more than four legs.
Center Island Narrowings *Image source: www.encinoparkhoa.org*	An island located along the centerline of a street that narrows the travel lanes. They are often landscaped to increase visibility and provide a visual amenity. If Fitted with a gap to allow pedestrians to walk through at a crosswalk, they then called "pedestrian refuges."	Increase pedestrian safety Can have positive aesthetic value	Ideal for entrances to residential areas, and wide streets where pedestrians need to cross.

Traffic Calming Treatments

Tool	Description	Benefits	Consideration
Choker/Neckdowns *Image source: www.pedbikeimages.org/*	Curb extensions at midblock locations that narrow a street. Can be designed to restrict traffic to a single lane or accommodate two traffic lanes	Easily negotiable by large vehicles Can have positive aesthetic value Shortens pedestrian crossing distance	Good for areas with substantial speed problems and no on-street parking shortage.
Center Island Narrowings *http://www.encinoparkhoa.org*	An island located along the centerline of a street that narrows the travel lanes. They are often landscaped to increase visibility and provide a visual amenity. If Fitted with a gap to allow pedestrians to walk through at a crosswalk, they then called "pedestrian refuges."	Increase pedestrian safety Can have positive aesthetic value	Ideal for entrances to residential areas, and wide streets where pedestrians need to cross.
Detached Curb Extensions 	Bulb outs that are separated from the curb.	Allow original curb and gutter to drain excess stormwater, but provide benefits of bulb outs. Can be hardscaped or landscaped, including LID.	Not accessible without a cover to bridge the gutter.

Appendix E:

Crosswalk Decision Matrix

PEDESTRIAN CROSSING CONTEXTUAL GUIDANCE
At unsignalized locations

FACILITY TYPE	Local Streets ≤30 mph	Collector Streets 25-45 mph		Arterial Streets / Parkway 45+ mph				
	2 lane	2 lane	2 lane with median refuge	4 lane	4 lane with median refuge	5 lane	6 lane	6 lane with median refuge
Crosswalk Only (high visibility)	✓	EJ	EJ	X	X	X	X	X
Crosswalk with warning signage and yield lines	EJ	✓	✓	X	X	X	X	X
Active Warning Beacon (RRFB)	X	✓	✓	X	✓	X	X	X
Hybrid Beacon	X	EJ	EJ	✓	✓	✓	✓	✓
Full Traffic Signal	X	EJ	EJ	✓	✓	✓	✓	✓
Grade separation	X	EJ	EJ	EJ	EJ	EJ	✓	✓

LEGEND	
Most Desirable	✓
Engineering Judgement	EJ
Not Recommended	X

Appendix F:

Separated Bikeways at Intersections Guidance

Separated Bikeways at Intersections

Intersections are junctions at which different modes of transportation meet and facilities overlap. An intersection facilitates the interchange between bicyclists, motorists, pedestrians and other modes in order to advance traffic flow in a safe and efficient manner. Designs for intersections with bicycle facilities should reduce conflict between bicyclists (and other vulnerable road users) and vehicles by heightening the level of visibility, denoting clear right-of-way and facilitating eye contact and awareness with other modes. Intersection treatments can improve both queuing and merging maneuvers for bicyclists, and are often coordinated with timed or specialized signals.

The configuration of a safe intersection for bicyclists may include elements such as color, signage, medians, signal detection and pavement markings. Intersection design should take into consideration existing and anticipated bicyclist, pedestrian and motorist movements. In all cases, the degree of mixing or separation between bicyclists and other modes is intended to reduce the risk of crashes and increase bicyclist comfort. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, whether bicycle facilities are intersecting, and the adjacent street function and land use.

Bike Lanes at Right Turn Only Lanes

Shared Bicycle/Right Turn Lane

Bicyclists and Pedestrians at Roundabouts

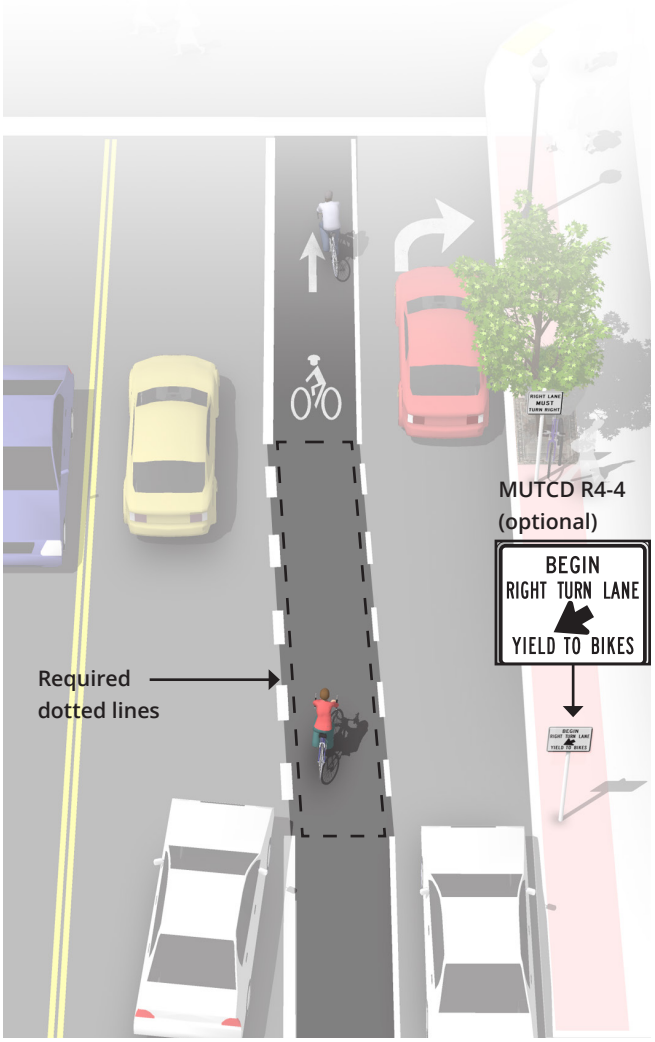
Signal Actuation

Bike Lanes at Right Turn Only Lanes

Description

The appropriate treatment at right-turn lanes is to place the bike lane between the right-turn lane and the right-most through lane or, where right-of-way is insufficient, to use a shared bike lane/turn lane.

The design (right) illustrates a through bike lane, with signage indicating that motorists should yield to bicyclists through the conflict area.



Guidance

At auxiliary right turn only lanes (add lane):

- Continue existing bike lane width; 5' min.
- Use signage to indicate that motorists should yield to bicyclists through the merge area.
- Keep merge area as straight as possible to not add confusion about right of way to motorists. If a buffered bike lane is approaching an intersection the bike lane may need to be shifted to the left side of the buffer to create a straight merge area.

Where a through lane becomes a right turn only lane:

- Do not define a dotted line merging path for bicyclists.
- Drop the bicycle lane in advance of the merge area.
- Use shared lane markings to indicate shared-use of the lane in the merging zone.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*, 2012.
FHWA. *Manual on Uniform Traffic Control Devices*, 2009.
NACTO. *Urban Bikeway Design Guide*, 2012.

Combined Bike Lane / Turn Lane

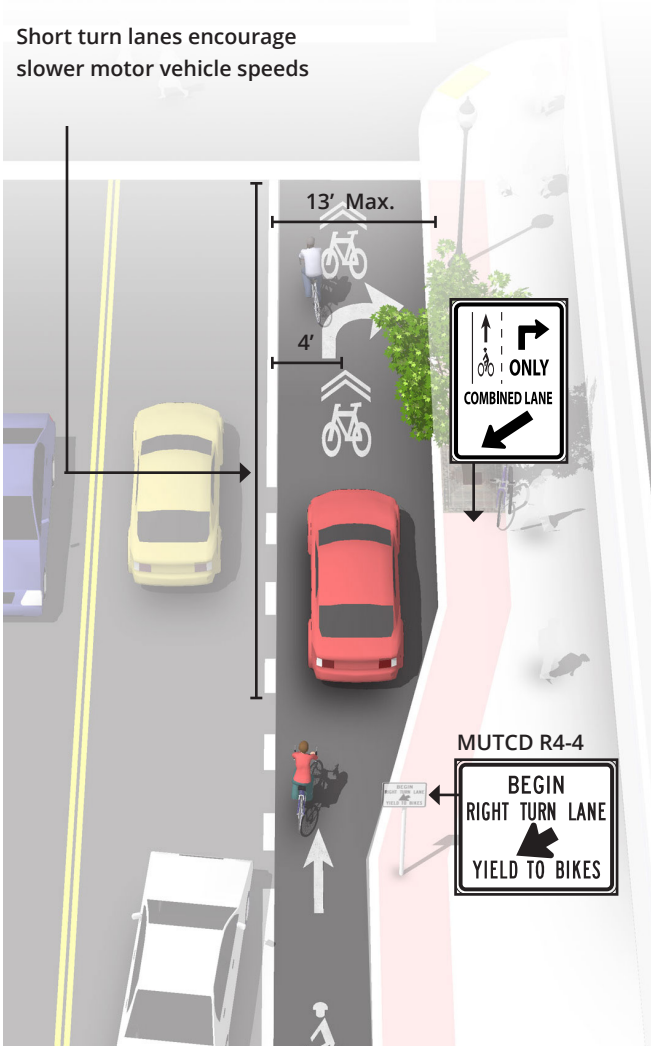
Description

The combined bike lane/turn lane places a standard-width bike lane on the left side of a dedicated right turn lane. Shared lane markings indicates proper bicyclist position within the lane. This treatment includes signage advising motorists and bicyclists of proper positioning within the lane.

This treatment is recommended at intersections lacking sufficient space to accommodate both a standard through bike lane and right turn lane.

Guidance

- Maximum shared turn lane width is 13 feet; narrower is preferable. If turn lane is greater 14', provide a dedicated through bicycle lane, see page 11.
- Center shared lane markings 4' from the left edge of the combined turn lane
- Bike lane pocket should have a minimum width of 4 feet with 5 feet preferred.
- A "Right Turn Only" sign with an "Except Bicycles" plaque should be included to make it legal for through bicyclists to use a right turn lane.
- Entrance taper of 1:7 should accommodate 20 mph entry
- Storage length should be less than 100'



Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*, 2012.
FHWA. *Manual on Uniform Traffic Control Devices*, 2009.
NACTO. *Urban Bikeway Design Guide*, 2012.

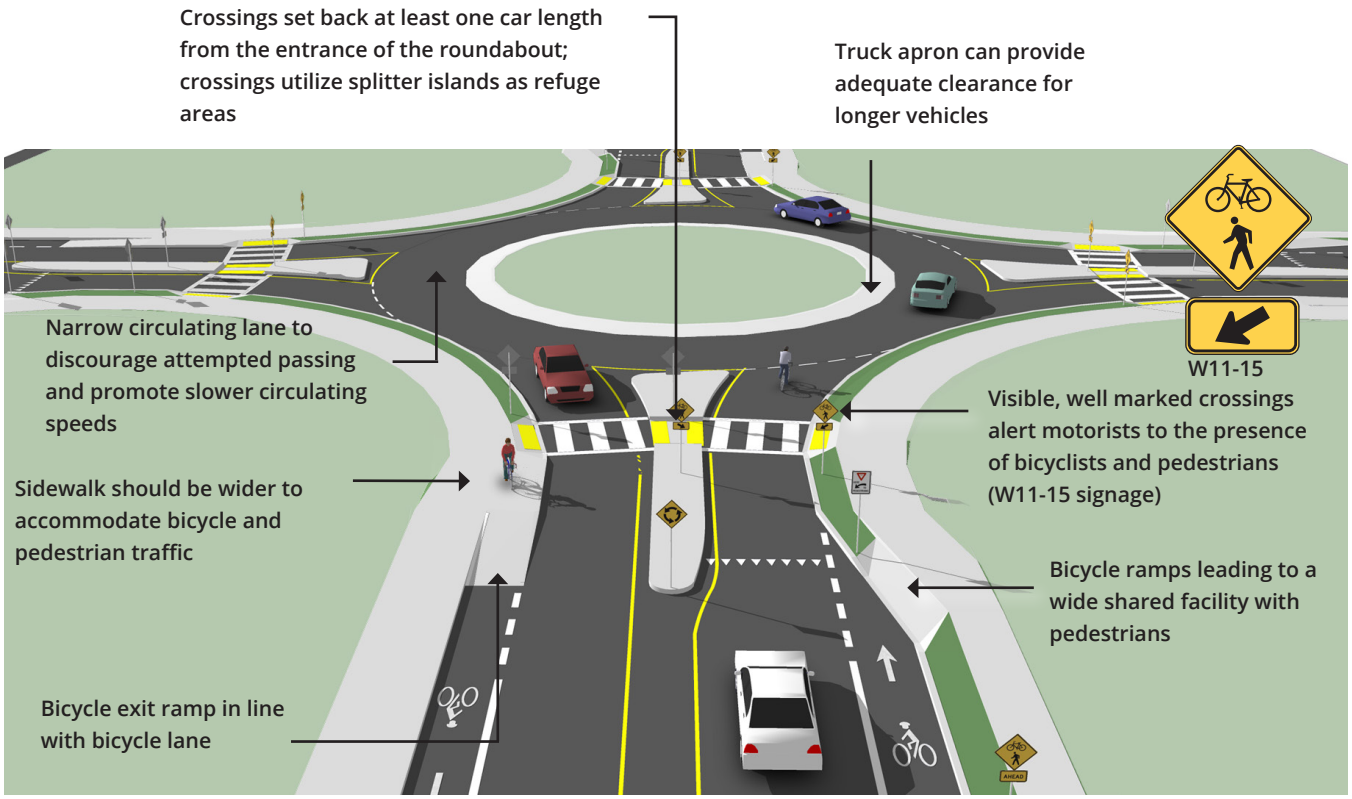
Single Lane Roundabouts

Description

In single lane roundabouts it is important to indicate to motorists, bicyclists and pedestrians the right-of-way rules and correct way for them to circulate, using appropriately designed signage, pavement markings, and geometric design elements.

Guidance

- 25 mph maximum circulating design speed.
- Design approaches/exits to the lowest speeds possible.
- Encourage bicyclists navigating the roundabout like motor vehicles to "take the lane."
- Maximize yielding rate of motorists to pedestrians and bicyclists at crosswalks.
- Provide separated facilities for bicyclists who prefer not to navigate the roundabout on the roadway.



Discussion

Research indicates that while single-lane roundabouts may benefit bicyclists and pedestrians by slowing traffic, multi-lane roundabouts may present greater challenges and significantly increase safety problems for these users.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*, 2012.
FHWA. *Manual on Uniform Traffic Control Devices*, 2009.
TRB. *Roundabouts: An Informational Guide, Second Edition*. NCHRP 672, 2010.

Materials and Maintenance

Signage and striping require routine maintenance.

Bicycle Detection and Actuation

Description

Bicycle detection at signals promotes safe and legal bicycling behavior by reducing the probability that people riding bicycles will not be detected.

Guidance

Provide one of the following types of bicycle detection systems at all proposed signals. Include MUTCD Figure 9C-7 to orient bicyclists to proper positioning to facilitate detection.

Loop Detectors

Bicycle-activated loop detectors are installed within the roadway to allow the presence of a bicycle to trigger a change in the traffic signal.

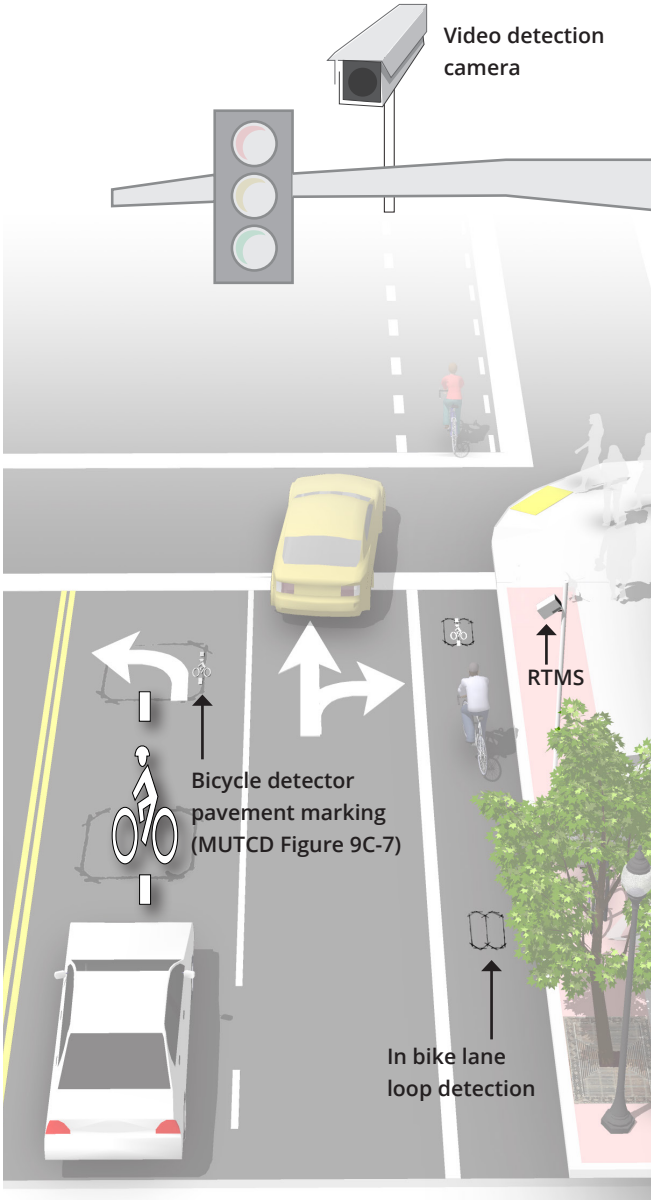
Loops that are sensitive enough to detect bicycles should be supplemented with pavement markings to instruct bicyclists how to trip them.

Video Detection Cameras

Video detection systems use digital image processing to detect a change in the image at a location.

Remote Traffic Microwave Sensor Detection (RTMS)

RTMS is a system which uses frequency modulated continuous wave radio signals to detect objects in the roadway. This method marks the detected object with a time code to determine its distance from the sensor. The RTMS system is unaffected by temperature and lighting, which can affect standard video detection.



Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*, 2012.
FHWA. *Manual on Uniform Traffic Control Devices*, 2009.
NACTO. *Urban Bikeway Design Guide*, 2012.

Materials and Maintenance

Signal detection and actuation for bicyclists should be maintained with other traffic signal detection and roadway pavement markings.

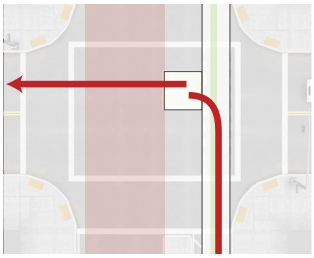
Two-Stage Turn Queue Boxes

Description

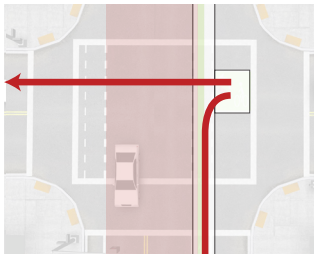
Two-stage turn queue boxes offer bicyclists a safe way to make left turns at multi-lane signalized intersections from a physically separated or conventional bike lane.

Additionally, bicyclists in protected (or separated) bike lanes are often unable to merge into traffic to turn left due to physical separation, making the provision of two-stage left turn boxes critical.

Protected bike lane turn box protected by physical buffer:

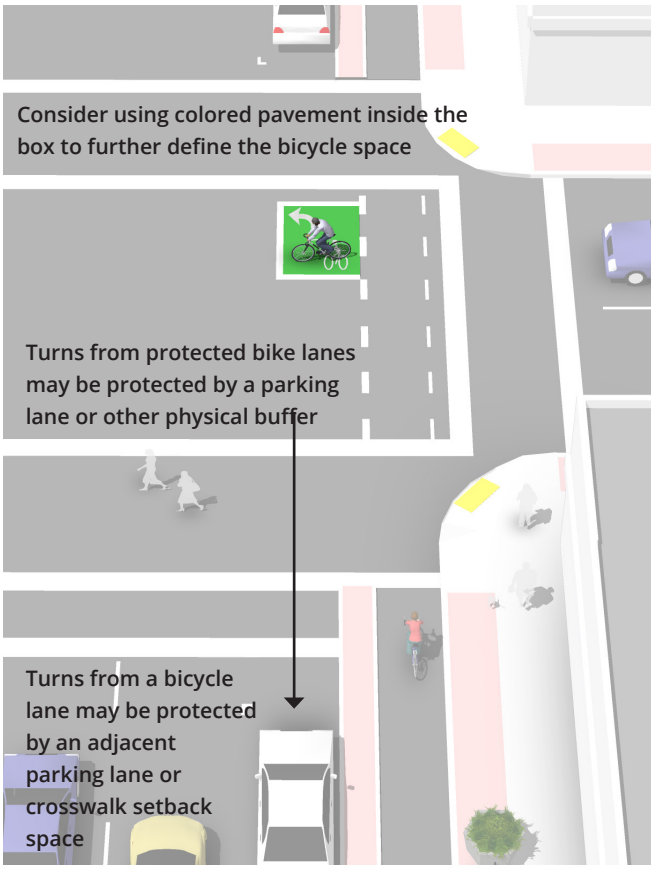


Bike lane turn box protected by parking lane:



Guidance

- The queue box shall be placed in a protected area. Typically this is within an on-street parking lane or protected bike lane buffer area.
- 8 foot x 6 foot preferred dimensions of bicycle storage area (6 foot x 3 foot minimum).
- Bicycle stencil and turn arrow pavement markings are used to indicate proper bicycle direction and positioning.
- This design formalizes a maneuver called a "box turn" or "pedestrian style turn".
- Two-stage turn queue boxes reduce conflicts in multiple ways; from keeping bicyclists from queuing in a bike lane or crosswalk and by separating turning bicyclists from through bicyclists.
- Bicyclist capacity of a two-stage turn queue box is influenced by physical dimension (how many bicyclists it can contain) and signal phasing (how frequently the box clears).
- Consider providing a "No Turn on Red" (MUTCD R10-11) on the cross street to prevent motor vehicles from entering the turn box.



Discussion

Two-stage turn queue boxes are considered experimental by FHWA. While two stage turns may increase bicyclist comfort in many locations, this configuration will typically result in higher average signal delay for bicyclists due to the need to receive two separate green signal indications (one for the through street, followed by one for the cross street) before proceeding.

Additional References and Guidelines

NACTO. *Urban Bikeway Design Guide*, 2012.

Materials and Maintenance

Paint or other marking materials can wear more quickly in high traffic areas or in winter climates. Costs will vary due to the type of paint used and the size of the two-stage turn box. Typical costs are $11.50 per square foot.

ORDINANCE NO. 17-01 (1-3-17)

AN ORDINANCE OF THE CITY OF SARATOGA SPRINGS, UTAH, ADOPTING AMENDMENTS TO THE CITY OF SARATOGA SPRINGS' GENERAL PLAN TO INCORPORATE A BICYCLE AND PEDESTRIAN MASTER PLAN; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, Utah Code Chapter 10-9a allows municipalities to amend the General Plan; and

WHEREAS, before the City Council approves any such amendments, the amendments must first be reviewed by the planning commission for its recommendation; and

WHEREAS, on December 8, 2016, the Planning Commission held a public hearing after proper notice and publication to consider proposed amendments to the City's General Plan and forwarded a positive recommendation with conditions; and

WHEREAS, on January 3, 2017, the City Council held a public hearing after proper notice and publication to consider the proposed amendments; and

WHEREAS, the City Council voted on the application at the January 3, 2017 meeting; and

WHEREAS, after due consideration, and after proper publication and notice, and after conducting the requisite public hearing, the City Council has determined that it is in the best interests of the residents of the City of Saratoga Springs that amendments to the General Plan be made.

NOW THEREFORE, the City Council hereby ordains as follows:

SECTION I – ENACTMENT

The Master Plan described in Exhibit A is hereby adopted as an element of the General Plan. City Staff is hereby instructed to amend the General Plan accordingly.

SECTION II – AMENDMENT OF CONFLICTING ORDINANCES

If any ordinances, resolutions, policies, or maps of the City of Saratoga Springs heretofore adopted are inconsistent herewith they are hereby amended to comply with the provisions hereof. If they cannot be amended to comply with the provisions hereof, they are hereby repealed.

SECTION III – EFFECTIVE DATE

This ordinance shall take effect upon its passage by a majority vote of the Saratoga Springs City Council and following notice and publication as required by the Utah Code.

SECTION IV – SEVERABILITY

If any section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance.

SECTION V – PUBLIC NOTICE

The Saratoga Springs Recorder is hereby ordered, in accordance with the requirements of Utah Code § 10-3-710—711, to do as follows:

a. deposit a copy of this ordinance in the office of the City Recorder; and
b. publish notice as follows:
    i. publish a short summary of this ordinance for at least one publication in a newspaper of general circulation in the City; or
    ii. post a complete copy of this ordinance in three public places within the City.

ADOPTED AND PASSED by the City Council of the City of Saratoga Springs, Utah, this 3rd day of January, 2017.

Signed: _____
Jim Miller, Mayor

Attest: _____
Cindy LoPiccolo, City Recorder

	VOTE
Shellie Baertsch	_____
Chris Porter	_____
Michael McOmber	_____
Bud Poduska	_____
Stephen Willden	_____

Exhibit A – Bicycle and Pedestrian Master Plan

Kimber Gabryszak, AICP
Planning Director

City Council
Staff Report

Code Amendments
19.18. Signs
Tuesday, January 3, 2017
Continued Decision

Report Date:	Tuesday, December 27, 2016
Applicant:	City Initiated
Previous Meetings:	Planning Commission Work Sessions 6/9/2016 and 6/23/2016 Planning Commission Public Hearing 7/14/2016 City Council Public Hearing 8/16/2016 City Council Work Session October 18, 2016 Subcommittee Discussions December 2016
Land Use Authority:	City Council
Future Routing:	None
Type of Decision:	Legislative
Author:	Kimber Gabryszak, Planning Director

A. Executive Summary:

The proposed Code changes include provisions for Parks and Trails signage, as well as special event signage.

Recommendation:

Staff recommends that the City Council discuss the proposed amendments and changes, and vote to approve all or some of the amendments with or without modifications, as outlined in Section H of this report. Alternatives include continuance to a future meeting or denial of all or some of the amendments.

B. Background:

The originally recommended sign code changes included draft provisions for electronic signage, park & trail signage, and special event signage.

The Planning Commission held work sessions on June 9, 2016 and June 14, 2016, and discussed the code language. The Commission gave direction on several changes, then held a public hearing on July 16, 2016 and voted to forward a positive recommendation on the amendments outlined above. Minutes from that meeting are attached. The Commission also reviewed additional code amendments in their June 28, 2016 work session, for potential future consideration.

The City Council held a public hearing on August 16, 2016, took public input, and continued their decision to their September 6, 2016 meeting with direction on several changes needed prior to taking action.

On September 6, 2016, the Council separated the sign chapter from the remainder of proposed Code amendments for further review. The Council held a work session to revisit the sign changes on October 18th, and removed electronic signage from consideration. A code subcommittee reviewed the draft and recommended additional changes in December 2016.

The resulting final unified draft is attached.

C. **Specific Request:** The proposed amendments are summarized below, with details in Exhibit 1.

- 19.18. Signs:
  - Create provision for directional signage for approved special events, both City sponsored and non-City sponsored.
  - Create signage standards for parks and trails.

D. **Process:** Section 19.17.03 of the Code outlines the process and criteria for an amendment:

1. The Planning Commission shall review the petition and make its recommendation to the City Council within thirty days of the receipt of the petition.
   Complies*. There is no application as this is City initiated, and received a recommendation from the Commission in July 2017.*

2. The Planning Commission shall recommend adoption of proposed amendments only where it finds the proposed amendment furthers the purpose of the Saratoga Springs Land Use Element of the General Plan and that changed conditions make the proposed amendment necessary to fulfill the purposes of this Title.
   Complies. *Please see Sections F and G of this report.*

3. The Planning Commission and City Council shall provide the notice and hold a public hearing as required by the Utah Code. For an application which concerns a specific parcel of property, the City shall provide the notice required by Chapter 19.13 for a public hearing.
   Complies*. Please see Section E of this report.*

4. For an application which does not concern a specific parcel of property, the City shall provide the notice required for a public hearing except that notice is not required to be sent to property owners directly affected by the application or to property owners within 300 feet of the property included in the application.
   Complies*. Please see Section E of this report.*

E. **Community Review:** Per Section 19.17.03 of the City Code, this item was noticed as a public hearing in August 2016 in the *Daily Herald*; as these amendments affect the entire City, no mailed notice was required. The City Council closed the hearing and continued the decision with direction on changes needed to render a decision.

F. **General Plan:**

Land Use Element – General Goals
The General Plan has stated goals of responsible growth management, the provision of orderly and efficient development that is compatible with both the natural and built environment, establish a

strong community identity in the City of Saratoga Springs, and implement ordinances and guidelines to assure quality of development.

Staff conclusion: consistent. *The proposed changes will still ensure quality of development and maintain community identity, while allowing more flexibility in advertising and provision of information.*

G. Code Criteria:

Code amendments are a legislative decision; therefore the City Council has significant discretion when considering changes to the Code.

The criteria for an ordinance (Code) change are outlined below, and act as guidance to the Council, and to the Commission in making a recommendation. Note that the criteria are not binding.

19.17.04 Consideration of General Plan, Ordinance, or Zoning Map Amendment

The Planning Commission and City Council shall consider, but not be bound by, the following criteria when deciding whether to recommend or grant a general plan, ordinance, or zoning map amendment:

1. The proposed change will conform to the Land Use Element and other provisions of the General Plan;
   Consistent*. See Section F of this report.*

2. the proposed change will not decrease nor otherwise adversely affect the health, safety, convenience, morals, or general welfare of the public;
   Consistent. *The amendments enable additional informational signage, which is beneficial to residents, while minimizing the aesthetic impacts to the community.*

3. the proposed change will more fully carry out the general purposes and intent of this Title and any other ordinance of the City; and
   Consistent. *The stated purposes of the Code are found in section 19.01.04:*
   1. The purpose of this Title, and for which reason it is deemed necessary, and for which it is designed and enacted, is to preserve and promote the health, safety, morals, convenience, order, fiscal welfare, and the general welfare of the City, its present and future inhabitants, and the public generally, and in particular to:
      a. encourage and facilitate the orderly growth and expansion of the City;
      b. secure economy in governmental expenditures;
      c. provide adequate light, air, and privacy to meet the ordinary or common requirements of happy, convenient, and comfortable living of the municipality's inhabitants, and to foster a wholesome social environment;
      d. enhance the economic well-being of the municipality and its inhabitants;
      e. facilitate adequate provisions for transportation, water, sewer, schools, parks, recreation, storm drains, and other public requirements;
      f. prevent the overcrowding of land, the undue concentration of population, and promote environmentally friendly open space;

g. stabilize and conserve property values;
h. encourage the development of an attractive and beautiful community; and
i. promote the development of the City of Saratoga Springs in accordance with the Land Use Element of the General Plan.

The sign changes help with improved informational services for parks and trails, which supports City recreation, and fosters a good social environment by enabling special events to appropriately advertise.

4. in balancing the interest of the petitioner with the interest of the public, community interests will be better served by making the proposed change.
   Consistent. *The amendments will provide additional flexibility in signage for hosts of special events, and better protection and information for users of parks and trails.*

H. Recommendation / Options:

Staff Recommended Motion – Approval
The City Council may choose to **approve** all or some of the amendments to the Code Sections listed in the motion, as proposed or with modifications:

Motion: "Based upon the evidence and explanations received today, I move to **approve** the proposed amendments to Section 19.18, through adoption of an ordinance and with the Findings and Conditions below:

Findings:
1. The amendments are consistent with Section 19.17.04.1, General Plan, as outlined in Sections F and G of this report and incorporated herein by reference.
2. The amendments are consistent with Section 19.17.04.2 as outlined in Section G of this report and incorporated herein by reference.
3. The amendments are consistent with Section 19.17.04.3 as outlined in Section G of this report and incorporated herein by reference.
4. The amendments are consistent with Section 19.17.04.4 as outlined in Section G of this report, and incorporated herein by reference.

Conditions:
1. The amendments shall be edited as directed by the Council: _____
   a. _____
   b. _____
   c. _____

Alternative A – Continuance
Vote to **continue** all or some of the Code amendments to the next meeting, with specific feedback and direction to Staff on changes needed to render a decision.

Motion: "I move to continue the amendments to Section 18 of the Code to the [January 17, 2017] meeting, with the following direction on additional information needed and/or changes to the draft:
_____
_____

_____

_____

Alternative B – Denial
Vote to **deny** all or some of the proposed Code amendments.

Motion: "Based upon the evidence and explanations received today, I move to **deny** the proposed amendments to Section 18 of the Code with the Findings below:

Findings

1. The amendments do not comply with Section 19.17.04(1), General Plan, as articulated by the Council: _____, and/or
2. The amendments do not comply with Section 19.17.04, sub paragraphs 2, 3, and/or 4 as articulated by the Council: _____, and/or
3. _____
4. _____
5. _____

I. Exhibits:

1. Draft Amendments (pages 6-10)

Exhibit 1

ORDINANCE NO. 17- (insert date)

AN ORDINANCE OF THE CITY OF SARATOGA SPRINGS, UTAH, ADOPTING AMENDMENTS TO THE SARATOGA SPRINGS LAND DEVELOPMENT CODE AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, Title 19 of the City of Saratoga Springs Code, entitled "Land Development Code" was enacted on November 9, 1999 and has been amended from time to time; and

WHEREAS, the City Council and Planning Commission have reviewed the Land Development Code and find that further amendments to the Code are necessary to better meet the intent and direction of the General Plan; and

WHEREAS, the Saratoga Springs Planning Commission has held a public hearing to receive comment on the proposed modifications and amendments as required by Chapter 9a, Title 10, Utah Code Annotated 1953, as amended; and

WHEREAS, the Planning Commission, after the full and careful consideration of all public comment, has forwarded a recommendation to the Saratoga Springs City Council regarding the modifications and amendments; and

WHEREAS, the City Council has conducted a public hearing to receive comment on the Planning Commission recommendation pursuant to Chapter 9a, Title 10, Utah Code Annotated 1953, as amended; and

WHEREAS, following the public hearing, and after receipt of all comment and input, and after careful consideration, the Saratoga Springs City Council has determined that it is in the best interest of the public health, safety, and welfare of Saratoga Springs citizens that the following modifications and amendments to Title 19 be adopted.

NOW THEREFORE, the City Council of the City of Saratoga Springs, Utah hereby ordains as follows:

SECTION I – ENACTMENT

The amendments attached hereto as Exhibit A, incorporated herein by this reference, are hereby enacted. Such amendments are shown as underlines and strikethroughs. The remainder of Title 19 shall remain the same.

SECTION II – AMENDMENT OF CONFLICTING ORDINANCES

If any ordinances, resolutions, policies, or zoning maps of the City of Saratoga Springs heretofore adopted are inconsistent herewith they are hereby amended to comply with the provisions hereof. If they cannot be amended to comply with the provisions hereof, they are hereby repealed.

SECTION III – EFFECTIVE DATE

This ordinance shall take effect upon its passage by a majority vote of the Saratoga Springs City Council and following notice and publication as required by the Utah Code.

SECTION IV – SEVERABILITY

If any section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance.

SECTION V – PUBLIC NOTICE

The Saratoga Springs Recorder is hereby ordered, in accordance with the requirements of Utah Code §§ 10-3-710—711, to do as follows:

a. deposit a copy of this ordinance in the office of the City Recorder; and
b. publish notice as follows:
   i. publish a short summary of this ordinance for at least one publication in a newspaper of general circulation in the City; or
   ii. post a complete copy of this ordinance in three public places within the City.

ADOPTED AND PASSED by the City Council of the City of Saratoga Springs, Utah, this ___ day of _____, 2017.

Signed: _____
Jim Miller, Mayor

Attest: _____ _____
Cindy LoPiccolo, City Recorder Date

	VOTE
Shellie Baertsch	_____
Michael McOmber	_____
Stephen Willden	_____
Bud Poduska	_____
Chris Porter	_____

Chapter 19.18. Sign Regulations.

Sections:

19.18.01. Intent.
19.18.02. Content.
19.18.03. Definitions.
19.18.04. Prohibited Signs.
19.18.05. Signs Not Requiring A Permit.
19.18.06. ~~Measurement~~ General Standards.
19.18.07. Residential Sign Standards.
19.18.08. Agricultural, Vacant, and Active Development.
19.18.09. Institutional Sign Standards.
19.18.10. Commercial Zone Sign Standards.
19.18.11. Industrial Zone Sign Standards.
19.18.12. Mixed Use and Mixed Waterfront Zone Sign Standards.
19.18.13. Parks and Trails Signage Standards.
19.18.14. Special Event Signage Standards.
19.18.~~13~~15. Permit Process.
19.18.~~14~~16. Nonconforming Signs.

* * * * *

19.18.03. Definitions.

As used in this Chapter, the following words and phrases have the following meanings, unless the context clearly indicates that a contrary meaning is intended:

xx. **"Park and Trail Information Sign"** means a regulatory or informational sign for a park, trail, or other open space, including hours of operation, directional markers, mile markers, park rules, etc.

* * * * *

19.18.04. Prohibited Signs.

1. The following signs and any sign not otherwise authorized under the terms of this code are prohibited in the City, except as expressly permitted elsewhere in this chapter:
    a. Abandoned Signs.
    b. Animated Signs.
    c. Bench Signs other than artwork included in the bench structure.
    d. Balloon Signs.
    e. Billboards.
    f. Cabinet Signs, Simple.
    g. Electronic Message Signs.
    h. Flashing signs.
    i. Neon signs in residential zones.
    j. Pennants.
    k. Pole Signs, unless otherwise expressly permitted in this chapter.
    l. Pylon Signs.

m. Roof Signs.
n. Snipe Signs.
o. Wind Signs.
p. Vehicle Signs parked outside of designated parking stalls, or occupying required parking for more than 50% of the operating hours.
q. Trailer Signs not affixed to a vehicle, parked outside of designated parking stalls, or occupying required parking for more than 50% of the operating hours.
r. Illuminated signs directly facing and visible to an immediately adjacent residential zone or residential development.
s. Signs not otherwise expressly permitted in this chapter.

* * * * *

19.18.05. Signs Not Requiring a Permit.

The following signs may be placed without a permit

* * * * *

9. Traffic control signs that are approved by the City Engineer or highway authority and comply with the Manual on Uniform Traffic Control Devices and applicable laws, are permitted. Such traffic control signs shall not be required to comply with the general sign standards listed in 19.18.06.

10. Vehicle signs in non-residential zones on vehicles parked within a designated parking space, and outside of any site visibility triangle for public safety reasons.

11. Park and Trail Information Signs that are approved by a public agency. Such signs shall not be required to comply with the general sign standards listed in 19.18.06.

* * * * *

19.18.13. Parks and Trails Signage Standards.

1. Public parks and HOA maintained parks are permitted the following signs:
    a. Monument and Pedestal signs.
        i. Number. One monument or pedestal sign shall be allowed for each frontage in excess of thirty-five feet, or where frontage is less than thirty-five feet but parking access is provided.
            1. One additional sign is permitted for a frontage that exceeds 200 feet, or where an additional vehicular access is provided.
        ii. Size. A monument or pedestal sign shall not exceed forty-five square feet in size.
        iii. Height. A monument or pedestal sign shall not exceed 7.5 feet in height.
        iv. Separation. Monument and pedestal signs shall be separated by a minimum distance of 200 feet as measured diagonally across the property, and shall be a minimum of 100 feet from any other permanent ground sign on the same frontage.

19.18.14. Special Event Signage Standards.

1. City approved special events shall be permitted the temporary signage subject to the following standards:

a. A signage plan shall be submitted identifying the location of all on-premise and off-premise signs.
b. For non-City sponsored events, special event sponsors are limited to one special event signage permit in a ninety-day period.
c. Off-premise signs:
    i. Signs shall be placed entirely on private property with the written permission of the property owner.
    ii. Signs shall be temporary in nature, with the sign made of corrugated cardboard, plastic, or similar material and fastened to wires or wooden stakes. A-frame or similar removable signs may be used, which shall be weighted to prevent relocation via wind. Signs shall be free-standing, and shall not be attached to light poles, fences, vehicles, or other structures.
    iii. Signs shall be limited to three square feet in size and four feet in height.
    iv. Signs shall be placed no earlier than 24 hours prior to the event, and shall be removed no later than 24 hours after the conclusion of the event.
d. On premise signs, non-City sponsored events:
    i. Regardless of other zone limitations, two banner signs are permitted for the duration of the event, up to a maximum of ten days per event.
    ii. Additional temporary signage is limited to the signage allowed in the zone.
e. On premise signs, City sponsored events:
    i. Regardless of other zone limitations, one additional banner sign is permitted per acre for the duration of the event, up to a maximum of seven days per event, and may be clustered in one location.
    ii. Additional temporary signage is limited to the signage allowed in the zone.

ORDINANCE NO. 17-02 (1-3-17)

AN ORDINANCE OF THE CITY OF SARATOGA SPRINGS, UTAH, ADOPTING AMENDMENTS TO THE SARATOGA SPRINGS LAND DEVELOPMENT CODE AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, Title 19 of the City of Saratoga Springs Code, entitled "Land Development Code" was enacted on November 9, 1999 and has been amended from time to time; and

WHEREAS, the City Council and Planning Commission have reviewed the Land Development Code and find that further amendments to the Code are necessary to better meet the intent and direction of the General Plan; and

WHEREAS, the Saratoga Springs Planning Commission has held a public hearing to receive comment on the proposed modifications and amendments as required by Chapter 9a, Title 10, Utah Code Annotated 1953, as amended; and

WHEREAS, the Planning Commission, after the full and careful consideration of all public comment, has forwarded a recommendation to the Saratoga Springs City Council regarding the modifications and amendments; and

WHEREAS, the City Council has conducted a public hearing to receive comment on the Planning Commission recommendation pursuant to Chapter 9a, Title 10, Utah Code Annotated 1953, as amended; and

WHEREAS, following the public hearing, and after receipt of all comment and input, and after careful consideration, the Saratoga Springs City Council has determined that it is in the best interest of the public health, safety, and welfare of Saratoga Springs citizens that the following modifications and amendments to Title 19 be adopted.

NOW THEREFORE, the City Council of the City of Saratoga Springs, Utah hereby ordains as follows:

SECTION I – ENACTMENT

The amendments attached hereto as Exhibit A, incorporated herein by this reference, are hereby enacted. Such amendments are shown as underlines and strikethroughs. The remainder of Title 19 shall remain the same.

SECTION II – AMENDMENT OF CONFLICTING ORDINANCES

If any ordinances, resolutions, policies, or zoning maps of the City of Saratoga Springs heretofore adopted are inconsistent herewith they are hereby amended to comply with the provisions hereof. If they cannot be amended to comply with the provisions hereof, they are hereby repealed.

SECTION III – EFFECTIVE DATE

This ordinance shall take effect upon its passage by a majority vote of the Saratoga Springs City Council and following notice and publication as required by the Utah Code.

SECTION IV – SEVERABILITY

If any section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance.

SECTION V – PUBLIC NOTICE

The Saratoga Springs Recorder is hereby ordered, in accordance with the requirements of Utah Code §§ 10-3-710—711, to do as follows:

a. deposit a copy of this ordinance in the office of the City Recorder; and
b. publish notice as follows:
   i. publish a short summary of this ordinance for at least one publication in a newspaper of general circulation in the City; or
   ii. post a complete copy of this ordinance in three public places within the City.

ADOPTED AND PASSED by the City Council of the City of Saratoga Springs, Utah, this 3rd day of January, 2017.

Signed: _____
Jim Miller, Mayor

Attest: _____
Cindy LoPiccolo, City Recorder

	VOTE
Shellie Baertsch	_____
Michael McOmber	_____
Stephen Willden	_____
Bud Poduska	_____
Chris Porter	_____

City Council Staff Report

Author: Gordon Miner, City Engineer
Subject: Contracts for Professional Services for the 2017 Updates to the Drinking Water and Secondary Water Master Plans, Capital Facilities Plans, Impact Fee Facilities Plans, and Impact Fee Analyses
Date: January 3, 2017
Type of Item: Contracts for Professional Services

A. Executive Summary: It has been three years since the subject plans were updated. A lot has happened since then, which necessitates updates to reflect the current status of these systems and the directions in which they are presently headed.

Recommendation: Staff recommends that the City Council award these contracts to Hansen, Allen & Luce to begin updating these plans.

B. Background: The following explanations apply to both the Drinking Water System and the Secondary Water System.

Professional services is required for four documents: Master Plan (MP), Capital Facilities Plan (CFP), Impact Fee Facilities Plan (IFFP), and Impact Fee Analysis (IFA). Beginning with the MP, each one is derived from the former. The MP addresses the build-out scenario; the CFP addresses the capital facilities projects that are anticipated to be built within the next 10 years; the IFFP addresses those capital projects that will qualify to be funded with impact fees; the IFA provides the calculation of the impact fee amount.

These documents were updated last in 2014. Since then, changes have occurred relative to land use and capital projects, necessitating updates to reflect the current status of these systems and the directions in which they are presently headed.

C. Funding Source: Impact Fees.

D. Review: These draft contracts were prepared by Hansen, Allen & Luce (HAL) consulting engineers. They have been reviewed and found acceptable by staff for scope, budget, and legal form.

E. Recommendation and Alternatives: Staff recommends that the City Council award these contracts to HAL. The following alternative motions are offered to the Council for consideration:

Alternative 1 - Award

"I move to **award** the subject contracts to Hansen, Allen & Luce, Inc. to update the Master Plans, Capital Facilities Plans, Impact Fee Facilities Plans, and Impact Fee Analyses for the City's Drinking Water System and its Secondary Water System".

Alternative 2 – Award with Modifications

"I move to **award** the subject contracts to Hansen, Allen & Luce, Inc. to update the Master Plans, Capital Facilities Plans, Impact Fee Facilities Plans, and Impact Fee Analyses for the City's Drinking Water System and its Secondary Water System with direction to the Staff to modify the subject contract(s) as follows:"

1. _____
2. _____
3. _____

Alternative 3 – Denial

"I move to **deny** the award of subject contract(s) with the following direction to the Staff for changes needed to render a future consideration:

1. _____
2. _____
3. _____

J. Attachments:

1. Contract for Professional Services to Update the Drinking Water Master Plan, Capital Facilities Plan, Impact Fee Facilities Plan, and Impact Fee Analysis.
2. Contract for Professional Services to Update the Secondary Water Master Plan, Capital Facilities Plan, Impact Fee Facilities Plan, and Impact Fee Analysis.

SARATOGA SPRINGS 2017 SECONDARY WATER MP, CFP, IFFP, AND IFA UPDATES ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered into as of this _____day of December, 2016, by and between the **City of SARATOGA SPRINGS**, a municipal corporation of the State of Utah, 1307 North Commerce Drive, Suite 200, Saratoga Springs, UT 84045 ("City"), and Hansen, Allen & Luce, Inc. ("Engineer"), 6771 South 900 East, Midvale, Utah 84047.

PURPOSE: The City desires to obtain consulting and engineering services from an experienced professional for the purpose of preparing an updated Secondary Water Master Plan (MP), Capital Facility Plan (CFP), Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA). The Engineer has submitted Proposals, including Fee Proposals, dated December 21, 2016, which are attached to this Agreement as **Exhibit "A"** and incorporated as part of this Agreement. Engineer has considerable experience and the ability to perform the services required herein. The City has selected the Engineer to provide such consulting and engineering services in an experienced, professional and competent manner as an independent contractor of the City, the Engineer's Proposal, including the Engineer's Fee Proposal, and the following terms. Engineer represents it has the necessary expertise and experience to perform the services requested by the City, and that it is properly qualified and licensed in the State of Utah for this work.

NOW, THEREFORE, in consideration of the promises and covenants contained herein, the parties hereby agree as follows:

AGREEMENT TERMS

1. **GENERAL DESCRIPTION OF THE WORK AND SERVICES.**

1.1. Nature and Location of the Project. The Project shall be defined as 2017 Secondary Water Master Plan, Capital Facility Plan, Impact Fee Facility Plan, and Impact Fee Analysis Project ("Project"). The Scope of Project Work is set forth in the Engineer's Proposal dated December 21, 2016, as attached hereto as **Exhibit "A".** To the extent that this Engineering Services Agreement document conflicts in any way with **Exhibit "A",** the Engineering Services Agreement shall control.

1.2. Services of Engineer. City hereby agrees to retain Engineer, and Engineer hereby agrees to perform the following services:

1.2.1. Engineer accepts professional engineering responsibility to prepare the Master, Capital Facility, Impact Fee Facility, and Impact Fee plans for the Project and to then act as a consultant to the City during the approval of the plans in accordance with the terms of this Agreement. Engineer agrees that upon becoming aware of any fault, defect or deficiency in Engineer's work, Engineer shall immediately notify the City Representative of each deficiency in writing and shall correct any such deficiency.

1.2.2. Engineer shall provide periodic progress reports throughout the Project.

1.2.3. Engineer shall assign or designate Steven Jones, P.E. as Engineer's Project Manager. He or his successor as Engineer's Project Manager shall coordinate the progress of the Project and cooperate with the City Representative.

1.2.4. Engineer's services hereunder shall, to the best of its knowledge, information and belief, conform in all details and designs with all applicable Federal, State, and City laws, regulations, and ordinances.

1.2.5. Engineer shall provide a complete electronic set of the data, maps, master plan reports, and hydraulic models prepared for the project as detailed in section 1.1, and the attachments referenced therein.

1.3. Defects. Engineer will use its best efforts to prevent defects or deficiency in the Project work. Engineer will promptly correct and notify the City Representative of any defects or deficiency in the Project engineering work.

1.4. Reviews. City requires that the Engineer meet with the City Representative or other representatives as needed and at such other times as the City Representative shall reasonably request. Said reviews will be used to discuss the status of the Project and for review and comment on the plans and hydraulic models.

1.5. Basic Services versus Additional or Special Services. As used herein,

1.5.1 *"Basic Services"* shall mean all services of Engineer including those specified in Section 1.1 through 1.4, and Section 2, which shall be paid for as specified in Section 5.2.1;

1.5.2 *"Additional or Special Services"* shall mean any services not provided for under Basic Services, and shall be paid for only pursuant to prior written authorization by the City as provided in Section 5.2.2 hereof. Any work done or expense incurred by Engineer without such prior written authorization shall be performed at Engineer's sole risk.

1.6 Standards of Performance: The Engineer shall perform its services in a manner consistent with any and all applicable professional and technical standards for engineering work of this nature. The Engineer shall also conduct itself in accordance with the most recent edition of Professional Conduct Guidelines of the American Consulting Engineers Council.

2. BASIC SERVICES. The following describes the Engineer's Basic Services for the project:

2.1. Prepare Plans. Engineer shall prepare all necessary analysis to access the city's water use, source, storage, and distribution system for the secondary water system. An extended period hydraulic model representing the existing and future conditions of the system will be used to analyze the system. An implementation plan will be created for the system to address all deficiencies and plan for new growth.

Reports for the system that summarize the methodologies, data, results and implementation plan will be prepared. The Impact Fee Facility Plan will meet standards outlined in Utah Code 11-36a.

2.2 Respond to Communications, Meetings. Engineer shall promptly and fully respond to communications from the City Representative about the project work, and shall meet with the City Representative about the project as often as the City Representative shall request.

3. CITY'S RESPONSIBILITY.

3.1. Information. During the Project, the City shall provide the following information to the Engineer, which Engineer shall have a right to rely on and does not have a duty to verify unless otherwise agreed to herein:

- Readily available secondary water use data including billing data, source meter data, and information from the SCADA system.
- GIS data maintained by the City which provides location information on zoning, land use, parcels, utilities, roads, growth assumptions, and any other GIS data readily available that could aid in the preparation of the plans.
- Any other information maintained by the City which the Engineer requests of the City in writing which the City has readily available and can supply without significant effort.

3.2. Notice to Proceed. The City will notify the Engineer in writing of the date from which time for completion of the Project will be counted, such notification being hereinafter referred to as "Notice to Proceed."

3.3. Examination of Documents and Rendering Decisions. The City shall promptly examine documents submitted by the Engineer and indicate needed corrections or changes, and otherwise render decisions pertaining thereto promptly, so as to avoid unreasonable delay in the progress of the Engineer's services.

3.4. Extension of Time. Should the Engineer advise the City in writing of the existence of causes over which Engineer has no control that may delay the work or were not reasonably foreseeable, the City, for good cause, may, subject to the City’s discretion, extend the time specified for completion of the work. Any extension shall not be valid unless received in writing.

3.5 Notification of Fault, Defect or Deficiency. If the City becomes aware of any fault, defect or deficiency in the Project, it shall give prompt written notice thereof to the Engineer.

4. DESIGN STANDARDS.

4.1. Compliance with and Identification of Applicable Design Standards. The Engineer shall provide plans that meet the City's current level of service, design standards and specifications. The master plans shall endeavor to conform to the most recent edition of AASHTO, MUTCD, APWA, and AWWA specifications and other standard specifications as they may apply. The impact fee facility plans will meet standards outlined

in Utah Code 11-36a. If City becomes aware of any failure of Engineer's plans to conform to such standards, it shall promptly so inform the Engineer. Engineer shall then have 7 calendar days to cure such defect.

Engineer shall submit copies of reports, figures, and models in the detail specified by the City as follows:

The models shall be computer generated in EPANET format. The reports and figures will be provided to the City in both hard copy and on computer disks compatible to the City's computer system.

4.2 Records. Upon termination of the Agreement, Engineer shall deliver to the City, in an orderly and expedient manner and within 30 days, all records, documentation, models and materials prepared for or belonging to the City.

5. COMPENSATION.

5.1. Total Fees. Except for authorized Additional or Special Services, the total compensation payable to the Engineer by the City for the services described in this Agreement shall not exceed the Lump Sum Fee of $30,000 as per exhibit "A." Payment for "Additional or Special Services" shall be made pursuant to the provisions of 5.2.2, or as otherwise agreed to in writing by the parties.

5.2. Method of Payment. The City shall pay the Engineer as follows:

5.2.1. Not-to-Exceed Fee for Basic Services. Payment for services shall be made upon submission by Engineer of a detailed invoice for services performed and costs incurred and meeting the requirements of this Agreement. Each invoice shall set out in reasonable detail the work performed. The City shall make payment to Engineer within thirty days of receiving a statement, but not more frequently than monthly, and only upon written certification from the City Representative.

5.2.2. Additional or Special Services. Payment for "Additional or Special Services of the Engineer" must be authorized in advance and in writing by the City Manager. A summary showing estimated service and cost data for each Additional Service requested shall be submitted to the City for written approval prior to commencement of work on that Additional Service. The City shall not be obligated to reimburse the Engineer for costs incurred in excess of the estimated cost set forth in that summary, and the Engineer shall not be obligated to continue work or to incur costs in excess of the estimated cost until the City notifies the Engineer in writing that the estimated cost therefore has been increased. Additional sets of contract documents and reduced scale drawings shall be charged at actual cost of printing and mailing. Engineer shall submit an invoice for services performed and costs incurred for which it seeks payment. Each invoice shall set out in reasonable detail the work each individual performed in hours and tenths, the date the work was performed, the name of the individual, his hourly rate, and the name of the project and of reasonable costs incurred necessary to the project according to the schedule set out on **Exhibit "A,"** attached hereto. The City shall make payment to Engineer within thirty days of receiving a statement, but not more frequently than

monthly, and only upon written certification from the City Representative.

5.3 Inspection/Audit.

5.3.1. Obligation to Maintain Accounts and Records. Engineer shall maintain for three (3) years all books, documents, papers, accounts, time sheets and other records pertaining to Engineer's costs incurred. Such records shall be prepared and maintained under generally-recognized accounting principles.

5.3.2. City's Right to Inspect Work and Records. Engineer shall make such records available at its offices at all reasonable times during the contract period and for three (3) years from the date of final payment under this contract, for the inspection of the City and its duly-authorized agents and employees. Such inspection, review or audit may be made by the City at any time during normal working hours and without notice. Engineer agrees to furnish copies of any such documents to the City—at no cost to City—if requested to do so.

5.4 Final Payment. Upon City's issuance of a check noted as "Final Payment," and upon Engineer's depositing, cashing, or endorsing such check, Engineer shall release and indemnify the City and make no further claims against the City for any unpaid work performed by Engineer.

6. ASSURANCES BY ENGINEER. Engineer represents to the City that it has the experience and ability to perform the services required by this Agreement; that it will perform said services in a professional, competent and timely manner; that it has the power to enter into and perform this Agreement; and that its performance of this Agreement shall not infringe upon or violate the rights of any third party or violate any federal, state or municipal laws.

7. PERIOD OF PERFORMANCE.

7.1. Commencement. The Engineer agrees that contract time shall be counted from the first working day following the date the City's written authorization to proceed is received by Engineer, unless noted otherwise. Engineer shall commence work on the first phase and diligently pursue said phase to completion. Engineer shall not commence work on any subsequent phase until written authorization to proceed is forwarded by the City. Engineer shall work diligently to the completion of the Project and any Additional Services requested by the City from the time services commence.

7.2. Work Schedule. Except as may be changed in writing by the City, the Engineer shall provide the work and services described herein in accordance with the following schedule:

- Within two months from the "Notice to Proceed". See "Project Schedule" in EXHIBIT A

7.3. The time identified above shall be exclusive of City review time. TIME IS OF THE ESSENCE OF THIS AGREEMENT.

7.4. Progress Schedule. Within ten (10) calendar days of the "Notice to Proceed", the Engineer shall submit to the City for review, evaluation, and approval, a progress schedule. This schedule shall be in the form of a "CPM network" or "bar chart" and shall be in sufficient detail to show the chronological relationship of all activities required to complete the design of the Project. Dates for any necessary submittals to the City and dates for reviews as specified by the Agreement shall be included. The schedule shall reflect completion of all work by the Agreement within the specified time and in accordance with the Agreement.

7.5. Termination, Suspension or Abandonment.

7.5.1 Termination. The City may terminate this Agreement at any time upon seven (7) calendar days written notice in the event the services of the Engineer, in the judgment of the City, are unsatisfactory, because of the Engineer's failure to prosecute the work with diligence or within the time limit specified, or in the event the Engineer, in the sole judgment of the City, has materially breached this Agreement; provided, however, that after receiving the City's written notice, Engineer shall have five working days in which to cure any such deficiency.

7.5.2 Suspension or Abandonment. The right is reserved by the City to suspend or abandon this Agreement at any time upon seven (7) calendar days written notice at the sole discretion of the City.

7.5.3 Payment. In the event of termination, suspension, or abandonment, the City shall pay the Engineer for services performed according to this Agreement up to the time of such termination, suspension, or abandonment, so long as such services meet the requirements of this Agreement. All work accomplished by the Engineer prior to the date of such termination shall be recorded, and tangible work documents shall be transferred to and become the sole property of the City. If the Project is resumed after being suspended for more than three (3) months, the Engineer's compensation shall be subject to renegotiation.

8. CITY REPRESENTATIVE. The City Representative shall assist in the administrative management of this Agreement, ensure that the work to be performed by Engineer is timely and adequately performed, and provide City approvals—except as otherwise provided herein—as may be required by this Agreement or the nature of the work. The City Representative shall assist in coordinating, monitoring, and evaluating this Agreement to completion.

Except as specifically provided herein (e.g., Additional or Special Services, *see* § 5.2.2.), the City's Representative shall be Gordon Miner at the address listed below. No other City employee or contractor shall be recognized as the City Representative unless Gordon Miner specifies in advance and in writing another employee or contractor as the City Representative. Such advance written notice shall specify the matter for which that person will act as the City Representative and the duration of that representation.

9. PARTIES' REPRESENTATIVES. For purposes of notice required or desired by the parties, or communication involving the services under this Agreement, such notice or communication shall be deemed to have been given when personally delivered, mailed (certified or otherwise, postage pre-paid), or sent by

facsimile transmission to the parties at the following addresses:

Steven C. Jones, P.E. Project Manager
Hansen, Allen & Luce, Inc.
6771 S. 900 E
Midvale, Utah 84047

Gordon Miner, City Engineer
City of Saratoga Springs
1307 N. Commerce Drive, Suite 200
Saratoga Springs, Utah

10. DIRECTION OF WORK.

10.1. Written Communication. Engineer shall not make any alterations or variations in or additions to or omissions from the Project or terms of this contract without the prior written consent of the City. All City submittals, acceptances, rejections, or recommendations must be in writing and Engineer shall not rely on any verbal communication.

10.2. Review. The City shall have the right to review all calculations, reports, models, submittals, and other work product of Engineer and hereby retains the right to request Engineer to make reasonable modifications, which modifications shall be made without any additional cost to the City.

10.3. Changes or Amendments. Any changes or amendments resulting in additional time required to be spent by Engineer in carrying out the change shall be by written change order signed by the City Representative. All such changes shall have complete approval by the City prior to the initiation of any such change. Any change made without such prior agreement, if accepted in writing by City, shall be deemed covered by the compensation and time provided for Basic Services in this Agreement and paid for only as provided in Section 5.

10.4. Disputes.

10.4.1. Except as otherwise provided in this Agreement, any dispute concerning a question of fact arising under this contract which is not disposed of by Agreement shall be decided by the City. The decision of the City shall be final and conclusive unless, within 10 calendar days from the date of receipt or 3 days after mailing of such decision, the Engineer shall mail or otherwise furnish the City a written appeal addressed to the City Manager. In connection with any appeal proceeding under this clause, the Engineer will be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Engineer will proceed diligently with the performance of the contract and in accordance with the City's decision. The decision of the City Manager shall be final and conclusive.

10.4.2. If the decision of the City Manager does not resolve the dispute, the dispute shall be subject to mediation. The Engineer may demand mediation by serving a written notice stating the essential nature of the dispute and the amount of time or money claimed, and requiring that the mediation take place within (60) days of service of notice. The mediation shall be administered by the American Arbitration Association or by such other person or organization as the parties may agree upon in writing. After notice, both parties shall participate in good faith in the mediation of all disputes and no action or suit may commence unless the mediation does not occur within (90) days after service of notice, or the mediation has occurred but did not resolve the dispute, or a statute of limitation would elapse if suit was not filed prior to (60) days after service of notice. Both parties shall equally share the costs of mediation.

11. OWNERSHIP AND USE OF DOCUMENTS.

11.1 ENGINEER's hydraulic models, drawings, analyses, reports, maps, field data, laboratory test data, calculations, estimates, and other similar documents prepared by ENGINEER for City under this Agreement shall become the property of the City upon full payment of ENGINEER's invoices. Any rights granted to Engineer under this Agreement shall not affect City's exclusive ownership of the work product. Engineer retains the right to maintain a copy of all documents prepared under this Agreement and recognizes they are not to be used for any other purposes than intended under this Agreement. In no event shall the ENGINEER be liable for any loss of profit, penalties, or any consequential or incidental damages as a result of the use or reuse of the documents by the City should they be used for any other purpose than authorized by this Agreement.

11.1.1. All models, tracings, plans, design, specifications, estimates and miscellaneous items purported to contribute to the completeness of the Project shall be delivered to and become the sole and exclusive property of the City. Final payment will not be made until the City has received the above-described documents.

11.1.2. All such items which become the property of the City may at any time be used by the City for any purpose it desires. The City shall assume responsibility for any other use of this material.

11.2 Documents: All completed original reproducible tracings, survey notes, plans, specifications, reports, and other original documents prepared by the Engineer in the performance of the Engineer's services shall be the property of the City, and the Engineer shall, upon the request of the City, deliver such documents to the City. The Engineer may retain and use copies of the documents. The City agrees to hold harmless, indemnify and defend the Engineer against all third party damages, claims, expenses and losses arising out of any reuse on other projects by the City of the plans, specifications and documents if the City does not obtain the written authorization of the Engineer for their reuse.

12. ASSIGNMENT, SUBCONTRACT. None of the services covered by this Agreement shall be subcontracted or assigned without the prior written approval of City.

13. GOVERNMENT RECORDS ACCESS AND MANAGEMENT ACT. The City is subject to the requirements of the Government Records Access and Management Act, Chapter 2, Title 63G, Utah Code Annotated or its successor ("GRAMA"). All materials submitted by Engineer pursuant to this Agreement are subject to disclosure unless such materials are exempt from disclosure pursuant to GRAMA. The burden of claiming an exemption from disclosure shall rest solely with the Engineer. Any materials for which Engineer claims a privilege from disclosure shall be marked as "Confidential" and accompanied by a statement from Engineer explaining Engineer's claim of exemption from disclosure. The City will make reasonable efforts to notify Engineer of any requests made for disclosure of documents submitted under a claim of confidentiality. Engineer may, at Engineer's sole expense, take any appropriate actions to prevent disclosure of such material. Engineer specifically waives any claims against the City related to disclosure of any materials required by GRAMA.

14. CONFIDENTIALITY. Engineer agrees that, except as directed by City, it will not at any time during or after the term of this Agreement disclose any information or document provided by the City which the City has designated as confidential to any person whatsoever and that upon the termination of this Agreement it will turn over to City all documents, papers, and other matter in its possession or control designated confidential that relate to City. Engineer further agrees to bind its employees and subcontractors to the terms and conditions of this Agreement.

15. INSURANCE AND INDEMNIFICATION.

15.1. Insurance. Engineer, at its own cost and expense, shall secure and maintain the following policies of insurance:

15.1.1. Engineer agrees to maintain worker's compensation and employer's liability insurance for Engineer's personnel, as may be required by state law. Engineer also agrees to maintain liability and auto liability insurance as required by state law. Engineer also agrees to maintain professional liability insurance. A Certificate of Insurance evidencing the coverage currently held may be supplied upon request.

15.2. Indemnity.

15.2.1. The Engineer shall indemnify and hold harmless the City, its officers, agents, employees and volunteers, from and against all damages, costs or expenses, in law or equity, including attorney's fees that may at any time arise or be set up because damages to property, bodily injury, personal injury or claims for environmental impairment or pollution remediation received by reason of or in the course of performing Work which may be occasioned by any willful, negligent or wrongful acts or omissions of the Engineer, any of the Engineer's employees or any subcontractor or the Engineers violation of statutory law, administrative regulation, breach of this Agreement or failure of performance hereunder. The City will not be held liable for any accident, loss or damage to the Works prior to its completion and acceptance.

15.2.2. City agrees to indemnify and save harmless Engineer, its officers and employees, from and against all losses, claims, demands, actions, damages, costs, charges and causes of action of every kind or character, including attorney's fees, based upon or arising out of City's negligent performance or failure of performance hereunder.

15.2.3. In the event that the City's tender of its defense, based upon the foregoing, is rejected by Engineer, and Engineer is later found by a court of competent jurisdiction to have been negligent as aforesaid, Engineer agrees to pay City's reasonable costs, expenses and attorney's fees incurred in proving such negligence, defending itself, and enforcing this indemnity provision.

15.2.4. In the event that the Engineer's tender of its defense, based upon the foregoing, is rejected by City, and City is later found by a court of competent jurisdiction to have been negligent as aforesaid, City agrees to pay Engineer's reasonable costs, expenses and attorney's fees incurred in proving such negligence, defending itself, and enforcing this indemnity provision.

15.3. Limitation of Liability. Both parties (Engineer and City) agree to limit liability due to professional negligence and to any liability arising out of or relating to this Agreement to One Million Dollars ($1,000,000) or the amount specified in the professional, automotive, or general liability coverage in place at the time of this agreement whichever is greater.

16. GOVERNMENTAL IMMUNITY. Except for the City's obligations of indemnification as set forth in paragraph 15.2.2 above, nothing in this Agreement shall adversely affect any immunity from suit, or any right, privilege, claim or defense, which the City or its employees, officers and directors may assert under state or federal law, including but not limited to The Governmental Immunity Act of Utah, Utah Code Ann. §§ 63-30d-101 et sect, (the "Act"). All claims against the City or its employees, officers and directors are subject to the provisions of the Act, which Act controls all procedures and limitations in connection with any claim of liability.

17. INTERPRETATION, COURT. The interpretation and construction of this Agreement, and all matters relating hereto, shall be governed by the laws of the State of Utah applicable to agreements executed and to be performed solely within Utah. The parties hereby submit to the jurisdiction of, and waive any venue objections against, the Fourth District Court of the State of Utah in any litigation arising out of this Agreement.

18. FORCE MAJEURE. Neither party shall hold the other responsible for damages or delays in performance caused by acts of God, strikes, lockouts, accidents, acts of any governmental entity having jurisdiction over the parties and/or the subject matter of this Agreement (other than those governmental entities named as parties or beneficiaries to this Agreement), or other events beyond the reasonable control of the other or the other's employees and agents. In the event either party claims that performance of its obligation is prevented or delayed by such cause, that party shall promptly notify the other party of that fact and the circumstances preventing or delaying performance.

19. SEVERABILITY; WAIVER. In the event any provision of this Agreement shall be held to be invalid and unenforceable, the remaining provisions shall remain valid and binding upon the parties. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of any subsequent breach of the same by the other party.

20. ENTIRE AGREEMENT; AMENDMENTS. This Agreement represents the entire and integrated agreement between the City and the Engineer, and supersedes all prior negotiations, representations or agreements, whether written or oral, regarding the subject matter contained in this document. The Agreement may be amended only by written instrument duly executed by all parties.

21. INDEPENDENT CONTRACTOR. Engineer acknowledges that the services rendered under this Agreement shall be solely as an independent contractor. Engineer shall not enter into any contract or commitment on behalf of City. Engineer further acknowledges that it is not considered an affiliate or subsidiary of City, and is not entitled to any City employment rights or benefits. It is expressly understood that this undertaking is not a joint venture.

22. TITLES AND CAPTIONS. The titles of captions of this Agreement are for convenience only and shall be deemed part of this Agreement and in no way define, limit, augment, extend or describe the scope, content or intent of any part or parts of this Agreement.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement as of the day and year first above written.

SARATOGA SPRINGS

By _____
MAYOR JIM MILLER

ATTEST:

_____
CITY RECORDER

ENGINEER

By _____

Title _____

ATTEST:

_____

CORPORATE ACKNOWLEDGMENT

STATE OF UTAH)
. ss.
County of Salt Lake)

On the day of _____ , 2016, personally appeared before me _____and _____and did say that they are the

_____and _____ of

_____a _____ corporation, and that the foregoing instrument was signed in behalf of said corporation by authority of a resolution of its board of directors; and said persons acknowledged to me that said corporation executed the same.

_____
NOTARY PUBLIC, residing in:

_____

My Commission Expires:
_____

HANSEN ALLEN & LUCE inc
ENGINEERS

"Exhibit A"

SALT LAKE AREA OFFICE
6771 SOUTH 900 EAST
MIDVALE, UTAH 84047
PHONE: (801) 566-5599
FAX: (801) 566-5581
www.hansenallenluce.com

Mr. Gordon Miner
City Engineer
City of Saratoga Springs
1307 N. Commerce Dr., Suite 200
Saratoga Springs, UT 84045

December 21, 2016

RE: Proposal for the City of Saratoga Springs
2017 Secondary water MP, CFP, IFFP, and IFA Updates

Dear Gordon:

We appreciate the opportunity to submit this letter proposal to assist the City of Saratoga Springs (City) with its 2017 secondary water master plan, capital facility plan, impact fee facility plan, and impact fee analysis updates. This proposal is organized into the following sections: Project Understanding, a suggested Scope of Work, Assumptions, Proposed Engineering Budget, and Project Schedule.

Project Understanding

The City of Saratoga Springs desires to obtain consulting services from experienced engineering professional for the purpose of preparing an updated Secondary Water Master Plan (MP), Capital Facility Plan (CFP), Impact Fee Facility Plan (IFFP), and Impact Fee Analysis (IFA).

Scope of Work

The following is our proposed scope of work. The input section describes information to be provided by others or from previous work. The activities section describes the work to be performed by HAL. The output section describes the products to be delivered to the City of Saratoga Springs.

Task 1: Project Startup and Data Collection

Objective:

Obtain and review water system data, previous plans and reports, updates and goals from City staff, as well as the existing extended period hydraulic model of the secondary water system.

Input:

- Existing extended period hydraulic model
- City planning data
- Prior studies and reports
- Input from City Staff

Activities:

1.1. Project initiation including coordination, communication, and any required updates to the current hydraulic model and projects
1.2. Start-up meeting with City representatives to review project scope and objectives and identify data needs
1.3. Provide project management throughout the project

Output:

- Project management protocol and project goals
- Water system data
- Meeting agendas and notes

Task 2: Secondary Water Master Plan Update

Objective:

Leverage existing City planning, water usage and billing data, in addition to an extended period hydraulic model, to determine the existing state of the City secondary water system. Use this information to identify the future needs of the City water system and provide a road map for future growth.

Input:

- Existing extended period hydraulic model of the City's water system
- Existing Secondary Water Master Plan Report
- City water use and billing data
- City land use and zoning data
- City infrastructure data
- Input from City Staff

Activities:

2.1 Prepare updates to existing model to match existing conditions
2.2 Evaluate current water use demand patterns and project future demands
2.3 Prepare updates to the build-out model
2.4 Review existing operating deficiencies
2.5 Review projected future projects
2.6 Evaluate improvement options for system improvement to resolve existing or future deficiencies
2.7 Review recommendations with City staff

Output:

- Extended period hydraulic model of the City secondary water system
- Secondary water master plan report

Task 3: Capital Facility Plan Update

Objective:

Utilize collected data, the previous hydraulic model, and the Master Plan to define a specific, updated list of capital facilities the City will need in order to grow.

Input:

- 2014 Capital Facility Plan
- Results from master plan study
- Extended period hydraulic model
- Input from City Staff

Activities:

3.1. Analyze the system to determine capital facilities required to meet current level of service expectations and future water demands as growth occurs.
3.2. Develop a timeline for proposed capital improvements.
3.3. Prepare updated Capital Facility Plan included in the Master Plan reports

Output:

- Capital Facility Plan (included in the Master Plan Report)

Task 4: Impact Fee Facility Plan Update

Objective:

Use previous analysis to provide an updated Impact Fee Facilities Plan that is in accordance with Utah Code 11-36a.

Input:

- 2014 Impact Fee Facility Plan
- Results from Capital Facility Plan
- Input from City Staff

Activities:

4.1. Determine which capital facilities are impact fee-eligible
4.2. Evaluate water right capacities
4.3. Estimate costs of capital projects as outlined in the Master Plan and Capital Facilities Plan
4.4. Provide Plan to document assumption substantiation and all other requirements of the state code

Output:

- Impact Fee Facility Plan Report

Task 5: Impact Fee Analysis Update

Objective:

Determine appropriate impact fees for the City secondary water system.

Input:

- Results from Impact Fee Facility Plan Report
- Input from City Staff

Activities:

5.1. Develop consensus regarding demand and growth projections in the early stages of the process.
5.2. Review and update defined level of service standards and proportionate share analysis for each secondary water system component.

Output:

- Impact Fee Analysis (Included in Impact Fee Facility Plan Report)

Cost Proposal

We propose a professional engineering budget "not to exceed" $30,000 to perform the Scope of Work as outlined in this proposal. The following table includes a summary of our cost estimate. The cost estimate and scope of work is based on our understanding of the City's needs and what we feel would give the City a complete product. The City may wish to add, subtract or modify Tasks to better meet their needs.

Task	Task Name	Estimated Hours	Fee Estimate
1	Project Startup and Data Collection	16	$2,000
2	Master Plan Update	80	$10,000
3	Capital Facility Plan Update	40	$5,000
4	Impact Fee Facility Plan Update	70	$9,000
5	Impact Fee Analysis Update	32	$4,000
	Total:	**238**	**$30,000**

Schedule

We are prepared to begin work immediately upon receiving authorization to proceed. The project will proceed as-negotiated and as desired by the City. We anticipate that the work will require about 60 days to complete from the date that authorization is given to proceed.

We appreciated the opportunity you have given us to present this proposal to the City. We invite you to contact us if you have any questions.

Sincerely,

HANSEN, ALLEN & LUCE, INC.

Steven C. Jones, M.S., P.E.
Principal

SARATOGA SPRINGS 2017 DRINKING WATER MP, CFP, IFFP, AND IFA UPDATES ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered into as of this _____day of December, 2016, by and between the **City of SARATOGA SPRINGS**, a municipal corporation of the State of Utah, 1307 North Commerce Drive, Suite 200, Saratoga Springs, UT 84045 ("City"), and Hansen, Allen & Luce, Inc. ("Engineer"), 6771 South 900 East, Midvale, Utah 84047.

PURPOSE: The City desires to obtain consulting and engineering services from an experienced professional for the purpose of preparing an updated Drinking Water Master Plan (MP), Capital Facility Plan (CFP), Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA). The Engineer has submitted Proposals, including Fee Proposals, dated December 21, 2016, which are attached to this Agreement as **Exhibit "A"** and incorporated as part of this Agreement. Engineer has considerable experience and the ability to perform the services required herein. The City has selected the Engineer to provide such consulting and engineering services in an experienced, professional and competent manner as an independent contractor of the City, the Engineer's Proposal, including the Engineer's Fee Proposal, and the following terms. Engineer represents it has the necessary expertise and experience to perform the services requested by the City, and that it is properly qualified and licensed in the State of Utah for this work.

NOW, THEREFORE, in consideration of the promises and covenants contained herein, the parties hereby agree as follows:

AGREEMENT TERMS

1. **GENERAL DESCRIPTION OF THE WORK AND SERVICES.**

1.1. Nature and Location of the Project. The Project shall be defined as 2017 Drinking Water Master Plans, Capital Facility Plan, Impact Fee Facility Plan, and Impact Fee Analysis Project ("Project"). The Scope of Project Work is set forth in the Engineer's Proposal dated December 21, 2016, as attached hereto as **Exhibit "A".** To the extent that this Engineering Services Agreement document conflicts in any way with **Exhibit "A",** the Engineering Services Agreement shall control.

1.2. Services of Engineer. City hereby agrees to retain Engineer, and Engineer hereby agrees to perform the following services:

1.2.1. Engineer accepts professional engineering responsibility to prepare the Master, Capital Facility, Impact Fee Facility, and Impact Fee plans for the Project and to then act as a consultant to the City during the approval of the plans in accordance with the terms of this Agreement. Engineer agrees that upon becoming aware of any fault, defect or deficiency in Engineer's work, Engineer shall immediately notify the City Representative of each deficiency in writing and shall correct any such deficiency.

1.2.2. Engineer shall provide periodic progress reports throughout the Project.

1.2.3. Engineer shall assign or designate Steven Jones, P.E. as Engineer's Project Manager. He or his successor as Engineer's Project Manager shall coordinate the progress of the Project and cooperate with the City Representative.

1.2.4. Engineer's services hereunder shall, to the best of its knowledge, information and belief, conform in all details and designs with all applicable Federal, State, and City laws, regulations, and ordinances.

1.2.5. Engineer shall provide a complete electronic set of the data, maps, master plan reports, and hydraulic models prepared for the project as detailed in section 1.1, and the attachments referenced therein.

1.3. Defects. Engineer will use its best efforts to prevent defects or deficiency in the Project work. Engineer will promptly correct and notify the City Representative of any defects or deficiency in the Project engineering work.

1.4. Reviews. City requires that the Engineer meet with the City Representative or other representatives as needed and at such other times as the City Representative shall reasonably request. Said reviews will be used to discuss the status of the Project and for review and comment on the plans and hydraulic models.

1.5. Basic Services versus Additional or Special Services. As used herein,

1.5.1 *"Basic Services"* shall mean all services of Engineer including those specified in Section 1.1 through 1.4, and Section 2, which shall be paid for as specified in Section 5.2.1;

1.5.2 *"Additional or Special Services"* shall mean any services not provided for under Basic Services, and shall be paid for only pursuant to prior written authorization by the City as provided in Section 5.2.2 hereof. Any work done or expense incurred by Engineer without such prior written authorization shall be performed at Engineer's sole risk.

1.6 Standards of Performance: The Engineer shall perform its services in a manner consistent with any and all applicable professional and technical standards for engineering work of this nature. The Engineer shall also conduct itself in accordance with the most recent edition of Professional Conduct Guidelines of the American Consulting Engineers Council.

2. BASIC SERVICES. The following describes the Engineer's Basic Services for the project:

2.1. Prepare Plans. Engineer shall prepare all necessary analysis to access the city's water use, source, storage, and distribution system for the drinking water system. An extended period hydraulic model representing the existing and future conditions of the system will be used to analyze the system. An implementation plan will be created for the system to address all deficiencies and plan for new growth.

Reports for the system that summarize the methodologies, data, results and implementation plan will be prepared. The drinking water system master plan will meet the Division of Drinking Water Hydraulic Modeling Rule by complying with the hydraulic model, hydraulic modeling report and system expansion report requirements. The Impact Fee Facility Plan will meet standards outlined in Utah Code 11-36a.

2.2 Respond to Communications, Meetings. Engineer shall promptly and fully respond to communications from the City Representative about the project work, and shall meet with the City Representative about the project as often as the City Representative shall request.

3. CITY'S RESPONSIBILITY.

3.1. Information. During the Project, the City shall provide the following information to the Engineer, which Engineer shall have a right to rely on and does not have a duty to verify unless otherwise agreed to herein:

- Readily available drinking water use data including billing data, source meter data, and information from the SCADA system.
- GIS data maintained by the City which provides location information on zoning, land use, parcels, utilities, roads, growth assumptions, and any other GIS data readily available that could aid in the preparation of the plans.
- Any other information maintained by the City which the Engineer requests of the City in writing which the City has readily available and can supply without significant effort.

3.2. Notice to Proceed. The City will notify the Engineer in writing of the date from which time for completion of the Project will be counted, such notification being hereinafter referred to as "Notice to Proceed."

3.3. Examination of Documents and Rendering Decisions. The City shall promptly examine documents submitted by the Engineer and indicate needed corrections or changes, and otherwise render decisions pertaining thereto promptly, so as to avoid unreasonable delay in the progress of the Engineer's services.

3.4. Extension of Time. Should the Engineer advise the City in writing of the existence of causes over which Engineer has no control that may delay the work or were not reasonably foreseeable, the City, for good cause, may, subject to the City’s discretion, extend the time specified for completion of the work. Any extension shall not be valid unless received in writing.

3.5 Notification of Fault, Defect or Deficiency. If the City becomes aware of any fault, defect or deficiency in the Project, it shall give prompt written notice thereof to the Engineer.

4. DESIGN STANDARDS.

4.1. Compliance with and Identification of Applicable Design Standards. The Engineer shall provide plans that meet the City's current level of service, design standards and specifications. The master plans shall

endeavor to conform to the most recent edition of AASHTO, MUTCD, APWA, and AWWA specifications and other standard specifications as they may apply. The master plans will conform to Division of Drinking Water requirements where applicable and the City's defined level of service for each water system. The impact fee facility plans will meet standards outlined in Utah Code 11-36a. If City becomes aware of any failure of Engineer's plans to conform to such standards, it shall promptly so inform the Engineer. Engineer shall then have 7 calendar days to cure such defect.

Engineer shall submit copies of reports, figures, and models in the detail specified by the City as follows:

The models shall be computer generated in EPANET format. The reports and figures will be provided to the City in both hard copy and on computer disks compatible to the City's computer system.

4.2 Records. Upon termination of the Agreement, Engineer shall deliver to the City, in an orderly and expedient manner and within 30 days, all records, documentation, models and materials prepared for or belonging to the City.

5. COMPENSATION.

5.1. Total Fees. Except for authorized Additional or Special Services, the total compensation payable to the Engineer by the City for the services described in this Agreement shall not exceed the Lump Sum Fee of $30,000 as per exhibit "A." Payment for "Additional or Special Services" shall be made pursuant to the provisions of 5.2.2, or as otherwise agreed to in writing by the parties.

5.2. Method of Payment. The City shall pay the Engineer as follows:

5.2.1. Not-to-Exceed Fee for Basic Services. Payment for services shall be made upon submission by Engineer of a detailed invoice for services performed and costs incurred and meeting the requirements of this Agreement. Each invoice shall set out in reasonable detail the work performed. The City shall make payment to Engineer within thirty days of receiving a statement, but not more frequently than monthly, and only upon written certification from the City Representative.

5.2.2. Additional or Special Services. Payment for "Additional or Special Services of the Engineer" must be authorized in advance and in writing by the City Manager. A summary showing estimated service and cost data for each Additional Service requested shall be submitted to the City for written approval prior to commencement of work on that Additional Service. The City shall not be obligated to reimburse the Engineer for costs incurred in excess of the estimated cost set forth in that summary, and the Engineer shall not be obligated to continue work or to incur costs in excess of the estimated cost until the City notifies the Engineer in writing that the estimated cost therefore has been increased. Additional sets of contract documents and reduced scale drawings shall be charged at actual cost of printing and mailing. Engineer shall submit an invoice for services performed and costs incurred for which it seeks payment. Each invoice shall set out in reasonable detail the work each individual

performed in hours and tenths, the date the work was performed, the name of the individual, his hourly rate, and the name of the project and of reasonable costs incurred necessary to the project according to the schedule set out on **Exhibit "A,"** attached hereto. The City shall make payment to Engineer within thirty days of receiving a statement, but not more frequently than monthly, and only upon written certification from the City Representative.

5.3 Inspection/Audit.

5.3.1. Obligation to Maintain Accounts and Records. Engineer shall maintain for three (3) years all books, documents, papers, accounts, time sheets and other records pertaining to Engineer's costs incurred. Such records shall be prepared and maintained under generally-recognized accounting principles.

5.3.2. City's Right to Inspect Work and Records. Engineer shall make such records available at its offices at all reasonable times during the contract period and for three (3) years from the date of final payment under this contract, for the inspection of the City and its duly-authorized agents and employees. Such inspection, review or audit may be made by the City at any time during normal working hours and without notice. Engineer agrees to furnish copies of any such documents to the City—at no cost to City—if requested to do so.

5.4 Final Payment. Upon City's issuance of a check noted as "Final Payment," and upon Engineer's depositing, cashing, or endorsing such check, Engineer shall release and indemnify the City and make no further claims against the City for any unpaid work performed by Engineer.

6. ASSURANCES BY ENGINEER. Engineer represents to the City that it has the experience and ability to perform the services required by this Agreement; that it will perform said services in a professional, competent and timely manner; that it has the power to enter into and perform this Agreement; and that its performance of this Agreement shall not infringe upon or violate the rights of any third party or violate any federal, state or municipal laws.

7. PERIOD OF PERFORMANCE.

7.1. Commencement. The Engineer agrees that contract time shall be counted from the first working day following the date the City's written authorization to proceed is received by Engineer, unless noted otherwise. Engineer shall commence work on the first phase and diligently pursue said phase to completion. Engineer shall not commence work on any subsequent phase until written authorization to proceed is forwarded by the City. Engineer shall work diligently to the completion of the Project and any Additional Services requested by the City from the time services commence.

7.2. Work Schedule. Except as may be changed in writing by the City, the Engineer shall provide the work and services described herein in accordance with the following schedule:

- Within two months from the "Notice to Proceed". See "Project Schedule" in EXHIBIT A

7.3. The time identified above shall be exclusive of City review time. TIME IS OF THE ESSENCE OF THIS AGREEMENT.

7.4. Progress Schedule. Within ten (10) calendar days of the "Notice to Proceed", the Engineer shall submit to the City for review, evaluation, and approval, a progress schedule. This schedule shall be in the form of a "CPM network" or "bar chart" and shall be in sufficient detail to show the chronological relationship of all activities required to complete the design of the Project. Dates for any necessary submittals to the City and dates for reviews as specified by the Agreement shall be included. The schedule shall reflect completion of all work by the Agreement within the specified time and in accordance with the Agreement.

7.5. Termination, Suspension or Abandonment.

7.5.1 Termination. The City may terminate this Agreement at any time upon seven (7) calendar days written notice in the event the services of the Engineer, in the judgment of the City, are unsatisfactory, because of the Engineer's failure to prosecute the work with diligence or within the time limit specified, or in the event the Engineer, in the sole judgment of the City, has materially breached this Agreement; provided, however, that after receiving the City's written notice, Engineer shall have five working days in which to cure any such deficiency.

7.5.2 Suspension or Abandonment. The right is reserved by the City to suspend or abandon this Agreement at any time upon seven (7) calendar days written notice at the sole discretion of the City.

7.5.3 Payment. In the event of termination, suspension, or abandonment, the City shall pay the Engineer for services performed according to this Agreement up to the time of such termination, suspension, or abandonment, so long as such services meet the requirements of this Agreement. All work accomplished by the Engineer prior to the date of such termination shall be recorded, and tangible work documents shall be transferred to and become the sole property of the City. If the Project is resumed after being suspended for more than three (3) months, the Engineer's compensation shall be subject to renegotiation.

8. CITY REPRESENTATIVE. The City Representative shall assist in the administrative management of this Agreement, ensure that the work to be performed by Engineer is timely and adequately performed, and provide City approvals—except as otherwise provided herein—as may be required by this Agreement or the nature of the work. The City Representative shall assist in coordinating, monitoring, and evaluating this Agreement to completion.

Except as specifically provided herein (e.g., Additional or Special Services, *see* § 5.2.2.), the City's Representative shall be Gordon Miner at the address listed below. No other City employee or contractor shall be recognized as the City Representative unless Gordon Miner specifies in advance and in writing another employee or contractor as the City Representative. Such advance written notice shall specify the matter for which that person will act as the City Representative and the duration of that representation.

9. PARTIES' REPRESENTATIVES. For purposes of notice required or desired by the parties, or communication involving the services under this Agreement, such notice or communication shall be deemed to have been given when personally delivered, mailed (certified or otherwise, postage pre-paid), or sent by facsimile transmission to the parties at the following addresses:

Steven C. Jones, P.E. Project Manager
Hansen, Allen & Luce, Inc.
6771 S. 900 E
Midvale, Utah 84047

Gordon Miner, City Engineer
City of Saratoga Springs
1307 N. Commerce Drive, Suite 200
Saratoga Springs, Utah

10. DIRECTION OF WORK.

10.1. Written Communication. Engineer shall not make any alterations or variations in or additions to or omissions from the Project or terms of this contract without the prior written consent of the City. All City submittals, acceptances, rejections, or recommendations must be in writing and Engineer shall not rely on any verbal communication.

10.2. Review. The City shall have the right to review all calculations, reports, models, submittals, and other work product of Engineer and hereby retains the right to request Engineer to make reasonable modifications, which modifications shall be made without any additional cost to the City.

10.3. Changes or Amendments. Any changes or amendments resulting in additional time required to be spent by Engineer in carrying out the change shall be by written change order signed by the City Representative. All such changes shall have complete approval by the City prior to the initiation of any such change. Any change made without such prior agreement, if accepted in writing by City, shall be deemed covered by the compensation and time provided for Basic Services in this Agreement and paid for only as provided in Section 5.

10.4. Disputes.

10.4.1. Except as otherwise provided in this Agreement, any dispute concerning a question of fact arising under this contract which is not disposed of by Agreement shall be decided by the City. The decision of the City shall be final and conclusive unless, within 10 calendar days from the date of receipt or 3 days after mailing of such decision, the Engineer shall mail or otherwise furnish the City a written appeal addressed to the City Manager. In connection with any appeal proceeding under this clause, the Engineer will be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Engineer will proceed diligently with the performance of the contract and in

accordance with the City's decision. The decision of the City Manager shall be final and conclusive.

10.4.2. If the decision of the City Manager does not resolve the dispute, the dispute shall be subject to mediation. The Engineer may demand mediation by serving a written notice stating the essential nature of the dispute and the amount of time or money claimed, and requiring that the mediation take place within (60) days of service of notice. The mediation shall be administered by the American Arbitration Association or by such other person or organization as the parties may agree upon in writing. After notice, both parties shall participate in good faith in the mediation of all disputes and no action or suit may commence unless the mediation does not occur within (90) days after service of notice, or the mediation has occurred but did not resolve the dispute, or a statute of limitation would elapse if suit was not filed prior to (60) days after service of notice. Both parties shall equally share the costs of mediation.

11. OWNERSHIP AND USE OF DOCUMENTS.

11.1 ENGINEER's hydraulic models, drawings, analyses, reports, maps, field data, laboratory test data, calculations, estimates, and other similar documents prepared by ENGINEER for City under this Agreement shall become the property of the City upon full payment of ENGINEER's invoices. Any rights granted to Engineer under this Agreement shall not affect City's exclusive ownership of the work product. Engineer retains the right to maintain a copy of all documents prepared under this Agreement and recognizes they are not to be used for any other purposes than intended under this Agreement. In no event shall the ENGINEER be liable for any loss of profit, penalties, or any consequential or incidental damages as a result of the use or reuse of the documents by the City should they be used for any other purpose than authorized by this Agreement.

11.1.1. All models, tracings, plans, design, specifications, estimates and miscellaneous items purported to contribute to the completeness of the Project shall be delivered to and become the sole and exclusive property of the City. Final payment will not be made until the City has received the above-described documents.

11.1.2. All such items which become the property of the City may at any time be used by the City for any purpose it desires. The City shall assume responsibility for any other use of this material.

11.2 Documents: All completed original reproducible tracings, survey notes, plans, specifications, reports, and other original documents prepared by the Engineer in the performance of the Engineer's services shall be the property of the City, and the Engineer shall, upon the request of the City, deliver such documents to the City. The Engineer may retain and use copies of the documents. The City agrees to hold harmless, indemnify and defend the Engineer against all third party damages, claims, expenses and losses arising out of any reuse on other projects by the City of the plans, specifications and documents if the City does not obtain the written authorization of the Engineer for their reuse.

12. ASSIGNMENT, SUBCONTRACT. None of the services covered by this Agreement shall be subcontracted or assigned without the prior written approval of City.

13. GOVERNMENT RECORDS ACCESS AND MANAGEMENT ACT. The City is subject to the requirements of the Government Records Access and Management Act, Chapter 2, Title 63G, Utah Code Annotated or its successor ("GRAMA"). All materials submitted by Engineer pursuant to this Agreement are subject to disclosure unless such materials are exempt from disclosure pursuant to GRAMA. The burden of claiming an exemption from disclosure shall rest solely with the Engineer. Any materials for which Engineer claims a privilege from disclosure shall be marked as "Confidential" and accompanied by a statement from Engineer explaining Engineer's claim of exemption from disclosure. The City will make reasonable efforts to notify Engineer of any requests made for disclosure of documents submitted under a claim of confidentiality. Engineer may, at Engineer's sole expense, take any appropriate actions to prevent disclosure of such material. Engineer specifically waives any claims against the City related to disclosure of any materials required by GRAMA.

14. CONFIDENTIALITY. Engineer agrees that, except as directed by City, it will not at any time during or after the term of this Agreement disclose any information or document provided by the City which the City has designated as confidential to any person whatsoever and that upon the termination of this Agreement it will turn over to City all documents, papers, and other matter in its possession or control designated confidential that relate to City. Engineer further agrees to bind its employees and subcontractors to the terms and conditions of this Agreement.

15. INSURANCE AND INDEMNIFICATION.

15.1. Insurance. Engineer, at its own cost and expense, shall secure and maintain the following policies of insurance:

15.1.1. Engineer agrees to maintain worker's compensation and employer's liability insurance for Engineer’s personnel, as may be required by state law. Engineer also agrees to maintain liability and auto liability insurance as required by state law. Engineer also agrees to maintain professional liability insurance. A Certificate of Insurance evidencing the coverage currently held may be supplied upon request.

15.2. Indemnity.

15.2.1. The Engineer shall indemnify and hold harmless the City, its officers, agents, employees and volunteers, from and against all damages, costs or expenses, in law or equity, including attorney's fees that may at any time arise or be set up because damages to property, bodily injury, personal injury or claims for environmental impairment or pollution remediation received by reason of or in the course of performing Work which may be occasioned by any willful, negligent or wrongful acts or omissions of the Engineer, any of the Engineer's employees or any subcontractor or the Engineers violation of statutory law, administrative regulation, breach of this Agreement or failure of performance hereunder. The City will not be

held liable for any accident, loss or damage to the Works prior to its completion and acceptance.

15.2.2. City agrees to indemnify and save harmless Engineer, its officers and employees, from and against all losses, claims, demands, actions, damages, costs, charges and causes of action of every kind or character, including attorney's fees, based upon or arising out of City's negligent performance or failure of performance hereunder.

15.2.3. In the event that the City's tender of its defense, based upon the foregoing, is rejected by Engineer, and Engineer is later found by a court of competent jurisdiction to have been negligent as aforesaid, Engineer agrees to pay City's reasonable costs, expenses and attorney's fees incurred in proving such negligence, defending itself, and enforcing this indemnity provision.

15.2.4. In the event that the Engineer's tender of its defense, based upon the foregoing, is rejected by City, and City is later found by a court of competent jurisdiction to have been negligent as aforesaid, City agrees to pay Engineer's reasonable costs, expenses and attorney's fees incurred in proving such negligence, defending itself, and enforcing this indemnity provision.

15.3. Limitation of Liability. Both parties (Engineer and City) agree to limit liability due to professional negligence and to any liability arising out of or relating to this Agreement to One Million Dollars ($1,000,000) or the amount specified in the professional, automotive, or general liability coverage in place at the time of this agreement whichever is greater.

16. GOVERNMENTAL IMMUNITY. Except for the City's obligations of indemnification as set forth in paragraph 15.2.2 above, nothing in this Agreement shall adversely affect any immunity from suit, or any right, privilege, claim or defense, which the City or its employees, officers and directors may assert under state or federal law, including but not limited to The Governmental Immunity Act of Utah, Utah Code Ann. §§ 63-30d-101 et sect, (the "Act"). All claims against the City or its employees, officers and directors are subject to the provisions of the Act, which Act controls all procedures and limitations in connection with any claim of liability.

17. INTERPRETATION, COURT. The interpretation and construction of this Agreement, and all matters relating hereto, shall be governed by the laws of the State of Utah applicable to agreements executed and to be performed solely within Utah. The parties hereby submit to the jurisdiction of, and waive any venue objections against, the Fourth District Court of the State of Utah in any litigation arising out of this Agreement.

18. FORCE MAJEURE. Neither party shall hold the other responsible for damages or delays in performance caused by acts of God, strikes, lockouts, accidents, acts of any governmental entity having jurisdiction over the parties and/or the subject matter of this Agreement (other than those governmental entities named as parties or beneficiaries to this Agreement), or other events beyond the reasonable control of the other or the other's employees and agents. In the event either party claims that performance of its obligation is prevented or

delayed by such cause, that party shall promptly notify the other party of that fact and the circumstances preventing or delaying performance.

19. SEVERABILITY; WAIVER. In the event any provision of this Agreement shall be held to be invalid and unenforceable, the remaining provisions shall remain valid and binding upon the parties. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of any subsequent breach of the same by the other party.

20. ENTIRE AGREEMENT; AMENDMENTS. This Agreement represents the entire and integrated agreement between the City and the Engineer, and supersedes all prior negotiations, representations or agreements, whether written or oral, regarding the subject matter contained in this document. The Agreement may be amended only by written instrument duly executed by all parties.

21. INDEPENDENT CONTRACTOR. Engineer acknowledges that the services rendered under this Agreement shall be solely as an independent contractor. Engineer shall not enter into any contract or commitment on behalf of City. Engineer further acknowledges that it is not considered an affiliate or subsidiary of City, and is not entitled to any City employment rights or benefits. It is expressly understood that this undertaking is not a joint venture.

22. TITLES AND CAPTIONS. The titles of captions of this Agreement are for convenience only and shall be deemed part of this Agreement and in no way define, limit, augment, extend or describe the scope, content or intent of any part or parts of this Agreement.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement as of the day and year first above written.

SARATOGA SPRINGS

By _____
MAYOR JIM MILLER

ATTEST:

_____
CITY RECORDER

ENGINEER

By _____

Title _____

ATTEST:

_____

CORPORATE ACKNOWLEDGMENT

STATE OF UTAH)
. ss.
County of Salt Lake)

On the day of _____ , 2016, personally appeared before me _____and _____and did say that they are the

_____and _____ of

_____a _____ corporation, and that the foregoing instrument was signed in behalf of said corporation by authority of a resolution of its board of directors; and said persons acknowledged to me that said corporation executed the same.

_____
NOTARY PUBLIC, residing in:

_____

My Commission Expires:
_____

HANSEN ALLEN & LUCE inc
ENGINEERS

"Exhibit A"

SALT LAKE AREA OFFICE
6771 SOUTH 900 EAST
MIDVALE, UTAH 84047
PHONE: (801) 566-5599
FAX: (801) 566-5581
www.hansenallenluce.com

Mr. Gordon Miner
City Engineer
City of Saratoga Springs
1307 N. Commerce Dr., Suite 200
Saratoga Springs, UT 84045

December 21, 2016

RE: Proposal for the City of Saratoga Springs
2017 Drinking water MP, CFP, IFFP, and IFA Updates

Dear Gordon:

We appreciate the opportunity to submit this letter proposal to assist the City of Saratoga Springs (City) with its 2017 drinking water master plan, capital facility plan, impact fee facility plan, and impact fee analysis updates. This proposal is organized into the following sections: Project Understanding, a suggested Scope of Work, Assumptions, Proposed Engineering Budget, and Project Schedule.

Project Understanding

The City of Saratoga Springs desires to obtain consulting services from experienced engineering professional for the purpose of preparing an updated Drinking Water Master Plan (MP), Capital Facility Plan (CFP), Impact Fee Facility Plan (IFFP), and Impact Fee Analysis (IFA).

Scope of Work

The following is our proposed scope of work. The input section describes information to be provided by others or from previous work. The activities section describes the work to be performed by HAL. The output section describes the products to be delivered to the City of Saratoga Springs.

Task 1: Project Startup and Data Collection

Objective:

Obtain and review water system data, previous plans and reports, updates and goals from City staff, as well as the existing extended period hydraulic model of the City water system.

Input:

- Existing extended period hydraulic model
- City planning data
- Prior studies and reports
- Input from City Staff

Activities:

1.1. Project initiation including coordination, communication, and any required updates to the current hydraulic model and projects
1.2. Start-up meeting with City representatives to review project scope and objectives and identify data needs
1.3. Provide project management throughout the project

Output:

- Project management protocol and project goals
- Water system data
- Meeting agendas and notes

Task 2: Drinking Water Master Plan Update

Objective:

Leverage existing City planning, water usage and billing data, in addition to an extended period hydraulic model, to determine the existing state of the City drinking water system. Use this information to identify the future needs of the City water system and provide a road map for future growth.

Input:

- Existing extended period hydraulic model of the City's water system
- Existing Drinking Water Master Plan Report
- City water use and billing data
- City land use and zoning data
- City infrastructure data
- Input from City Staff

Activities:

2.1 Prepare updates to existing model to match existing conditions
2.2 Evaluate current water use demand patterns and project future demands
2.3 Prepare updates to the build-out model
2.4 Review existing operating deficiencies
2.5 Review projected future projects
2.6 Evaluate improvement options for system improvement to resolve existing or future deficiencies
2.7 Review recommendations with City staff

Output:

- Extended period hydraulic model of the City drinking water system
- Culinary water master plan report

Task 3: Capital Facility Plan Update

Objective:

Utilize collected data, the previous hydraulic model, and the Master Plan to define a specific, updated list of capital facilities the City will need in order to grow.

Input:

- 2014 Capital Facility Plan
- Results from master plan study
- Extended period hydraulic model
- Input from City Staff

Activities:

3.1. Analyze the system to determine capital facilities required to meet current level of service expectations and future water demands as growth occurs.
3.2. Develop a timeline for proposed capital improvements.
3.3. Prepare updated Capital Facility Plan included in the Master Plan reports

Output:

- Capital Facility Plan (included in the Master Plan Report)

Task 4: Impact Fee Facility Plan Update

Objective:

Use previous analysis to provide an updated Impact Fee Facilities Plan that is in accordance with Utah Code 11-36a.

Input:

- 2014 Impact Fee Facility Plan
- Results from Capital Facility Plan
- Input from City Staff

Activities:

4.1. Determine which capital facilities are impact fee-eligible
4.2. Evaluate water right capacities
4.3. Estimate costs of capital projects as outlined in the Master Plan and Capital Facilities Plan
4.4. Provide Plan to document assumption substantiation and all other requirements of the state code

Output:

- Impact Fee Facility Plan Report

Task 5: Impact Fee Analysis Update

Objective:

Determine appropriate impact fees for the City drinking water system.

Input:

- Results from Impact Fee Facility Plan Report
- Input from City Staff

Activities:

5.1. Develop consensus regarding demand and growth projections in the early stages of the process.
5.2. Review and update defined level of service standards and proportionate share analysis for each drinking water system component.

Output:

- Impact Fee Analysis (Included in Impact Fee Facility Plan Report)

Cost Proposal

We propose a professional engineering budget "not to exceed" $30,000 to perform the Scope of Work as outlined in this proposal. The following table includes a summary of our cost estimate. The cost estimate and scope of work is based on our understanding of the City's needs and what we feel would give the City a complete product. The City may wish to add, subtract or modify Tasks to better meet their needs.

Task	Task Name	Estimated Hours	Fee Estimate
1	Project Startup and Data Collection	16	$2,000
2	Master Plan Update	80	$10,000
3	Capital Facility Plan Update	40	$5,000
4	Impact Fee Facility Plan Update	70	$9,000
5	Impact Fee Analysis Update	32	$4,000
	Total:	**238**	**$30,000**

Schedule

We are prepared to begin work immediately upon receiving authorization to proceed. The project will proceed as-negotiated and as desired by the City. We anticipate that the work will require about 60 days to complete from the date that authorization is given to proceed.

We appreciated the opportunity you have given us to present this proposal to the City. We invite you to contact us if you have any questions.

Sincerely,

HANSEN, ALLEN & LUCE, INC.

Steven C. Jones, M.S., P.E.
Principal

RESOLUTION NO. R17-03 (1-3-17)

RESOLUTION OF THE CITY OF SARATOGA SPRINGS, UTAH APPROVING ENGINEERING SERVICES CONTRACTS WITH HANSEN, ALLEN & LUCE, INC. FOR SECONDARY WATER AND DRINKING WATER MASTER PLAN, CAPITAL FACILITIES PLAN, IMPACT FEES FACILITY PLAN (IFFP) AND IMPACT FEE ANALYSIS (IFA)

WHEREAS, Professional services is required for four plans: Master Plan (MP), Capital Facilities Plan (CFP), Impact Fee Facilities Plan (IFFP), and Impact Fee Analysis (IFA); and

WHEREAS, It has been three years since the subject plans were updated. Updates are necessary to reflect the current status of these systems and direction headed; and

WHEREAS, Staff recommends award of contracts to Hansen, Allen & Luce, Inc. to update these plans; and

WHEREAS, Draft contracts were prepared by Hansen, Allen & Luce, Inc. consulting engineers, which have been reviewed and found acceptable by staff for scope, budget, and legal form; and

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Saratoga Springs, Utah that the proposed Engineering Services Contracts Change Order attached as Exhibit A is approved and the Mayor is authorized to sign said Agreement. This resolution shall take effect immediately upon passage.

PASSED AND APPROVED this 3rd day of January, 2017.

City of Saratoga Springs

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

City Council
Staff Report

Author: Jeremy D. Lapin, P.E.
Subject: 400 South Reimbursement Agreement
Date: January 3, 2016
Type of Item: Reimbursement Agreement

Description:

A. Topic:
This item is for the approval of a Reimbursement Agreement with DR Horton for the Upsize of 400 South to a collector road along with other upsized utility improvements including culinary and secondary waterlines built as part of the Legacy Farms project.

B. Background:
DR Horton has been working with the City to ensure their Infrastructure Designs not only serve their project needs but also address existing issues the City has identified in this area. In review of the City's Drinking Water, Irrigation Water and Transportation Master Plans, , the City requested the developer upsize a portion of their culinary water, secondary water system as well as upsize 400 South to a collector roadway to provide additional capacity in these systems to meet the needs of this area as growth continues. Staff notified the developer the upsize and potential reimbursement would be subject to approval from the City Council and the Developer has agreed to the proposed upsizing.

C. Analysis:
The Developer has agreed to the requested System Upsizing for an estimated reimbursement through either cash or impact fee credits for the following.

Culinary Water	$ 198,650.30
Secondary Water	$ 232,544.37
Roadway (400 South)	$ 113,009.87

D. Fiscal Impact: The reimbursement agreement stipulates that the City may reimburse the Developer by either cash payment or by providing the developer a credit against the applicable impact fees for the Legacy Farms project.

Recommendation: Staff recommends that the City Council approve the attached resolution for a reimbursement agreement with DR Horton as satisfaction in whole of any additional expenses incurred for the proposed Upsized System Improvements.

PUBLIC IMPROVEMENTS
REIMBURSEMENT AGREEMENT
(Village Plan VP 2 400 South- Legacy Farms)

THIS AGREEMENT is made and entered into as of the ___ day of _____, 2017, by and between the CITY OF SARATOGA SPRINGS, a Utah municipal corporation, hereinafter referred to as the "City," and D.R. Horton, Inc., a Delaware corporation, hereinafter referred to as the "Developer."

RECITALS:

WHEREAS, pursuant to the Planned Community Zone, the Developer is developing a master planned project known as Legacy Farms within the City at approximately 400 South Redwood Road ("Project"). The Project will consist of multiple phases and plats, and will be developed and improved in accordance with the approved Community Plans and Village Plans, as well as the Master Development Agreement entered into between the City and the Developer (the "MDA"). The approved Community Plans, Villages Plans and MDA are collectively referred to herein as the "Project Approvals" with respect to each phase or plat of the Project that is the subject of such Project Approvals;

WHEREAS, the Developer is required by the Project Approvals to install certain public improvements within the Project and outside the boundaries of the Project; and

WHEREAS, pursuant to the provisions and standards set forth in Section 21 of the MDA, Developer is entitled to reimbursements for certain public improvements, including — as defined in the MDA — "system improvements" and improvements oversized per the City's request. This Agreement is intended to set forth the City's reimbursement obligations with respect to the public improvements described below, the Developer's Obligations, and to confirm the manner and timing of such reimbursements.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. **Improvements; Reimbursement Amounts**. Developer agrees to install those improvements listed in Exhibit A attached hereto and incorporated herein by this reference (hereinafter, the "Improvements") at Developer's cost and expense including, but not limited to, engineering, planning, surveying, design, materials, labor, easements, property, construction costs, and interest expense. Without limiting the general scope of the preceding sentence, the Improvements that Developer will install, and the reimbursements to be paid by the City, include the following items and amounts:

(i) 400 South (local road vs. collector road). The parties agree that the "project improvements" of 400 South that Developer is required to construct and install without reimbursement from the City are shown in Exhibit A totaling $237,513.47 (i.e., local road ½ width with 24 feet of pavement). The City, however, desires a collector road (half-width) with 44 feet of pavement. The additional width and improvements of a collector road qualify for reimbursement as "system improvements." The amount to be reimbursed to Developer, however, is reduced because the City agrees to install the 2" overlay (entire road) as well as the restriping

and adjustment of collar/manholes/valves at the City's own cost (as shown in Exhibit A). As a result, the total amount of costs incurred by Developer for the collector road improvements ($249,619.80) exceeds the cost of the local road "project improvements" ($237,513.47) by only $12,106.33. Accordingly, the reimbursement amount to be paid to Developer for these system improvements is **$12,106.33**. If the City does not install the 2" overlay and related improvements at its own cost as shown on Exhibit A, such that Developer installs such improvements and incurs such costs, then Developer shall be reimbursed by the City for such additional costs as well.

(ii) Relocation of power poles/guy wires. Developer paid $83,060 to relocate the power poles and guy wires along 400 South as shown in Exhibit A. By agreement, the City will reimburse Developer for one-third (1/3) of such amount. Accordingly, the reimbursement amount to be paid to Developer is **$27,683.90** for these items.

(iii) Scope of Work Adjustments. At the City's request, Developer and its contractors performed additional work and installed enhanced/additional improvements relating to 400 South as set forth in Exhibit A. The reimbursement amount to be paid to Developer for these "Scope of Work Adjustments" is **$73,219.64**.

(iv) Additional Traffic Control Items. As shown in Exhibit A, Developer installed additional traffic control items for 400 South at a cost of $3,444.00. The reimbursement amount to be paid to Developer for these Traffic Control Items is **$3,444.00**.

(v) Culinary Water Improvements. The culinary water improvements identified in Exhibit A are "project improvements" that do not qualify for reimbursement (totaling $22,426.83). At the request of the City, Developer constructed and installed upsized and additional lengths of culinary waterlines at a total cost of $219,355.13, as shown in Exhibit A. The difference between the culinary water line improvements required for Developer's Project ($22,426.83) and the total cost of the upsized and extended culinary water lines installed at the City's request ($219,355.13) is $196,928.30, which amount is reimbursable as "system improvement" expenses. Accordingly, the reimbursement amount to be paid to Developer for the upsized and extended culinary water lines is **$196,928.30**.

Secondary Water Improvements. The secondary water improvements required for Developer's project that do not qualify for reimbursement total $73,569.27. At the request of the City, Developer constructed and installed upsized and additional lengths of secondary waterlines at a total cost of $304,391.6, as shown in Exhibit A. The difference between the secondary water line improvements required for Developer's Project ($73,569.27) and the total cost of the upsized and extended secondary water lines installed at the City's request ($304,391.64) is $230,822.37, which amount is reimbursable as "system improvement" expenses. Accordingly, the reimbursement amount to be paid to Developer for the upsized and extended secondary water lines is **$230,822.37**.

2. **System Approval and Inspection**. Developer shall install the Improvements described above in accordance with City ordinances, standards, construction drawings, and Project Approvals. The Improvements shall be approved by the City, and inspections shall be conducted by the City to ensure that the Improvements are constructed per City standards.

3. **Warranty and Dedication**. Upon completion, Developer shall deliver a certified set of as-built plans (in both paper and electronic format) along with the verified actual costs of construction of the Improvements and proof of payment of such costs. Upon successful completion of the Improvements and acceptance in writing by the City, Developer shall also provide a Warranty Bond in accordance with City ordinances to ensure that the Improvements remain in good condition and free from defects for a period of 1 year (the Warranty Bond may be on the same form as a Performance Bond). Upon successful completion, approval by the City, and posting of a Warranty Bond by Developer, and expiration of the Warranty period, the City shall accept, own, operate, and maintain the Improvements provided the Improvements have continued to meet City standards during the 1 year Warranty period. Developer shall dedicate to the City ownership of all facilities, easements, and property necessary to properly operate and maintain the Improvements, and Developer will not retain any ownership interest of the dedicated Improvements.

4. **Payment of Reimbursement Amounts**. The City is obligated to reimburse Developer for each of the "reimbursement amounts" described in Section 1 above (which total **$544,204.54**); provided, however, that the amounts to be reimbursed to Developer shall be based on the actual costs incurred by Developer (not the estimates) and no individual line-item cost shall exceed more than ten percent (10%) of the estimated costs as stated in this Agreement (and the exhibits hereto) unless the City approves the change in writing. The City shall satisfy its reimbursement obligations under this Agreement as follows:

(i) After said improvements have been constructed and installed, the actual expenses incurred by Developer for these improvements shall be verified, and the City shall reimburse Developer for the expenses (consistent with the provisions in Section 1 above) as follows: (i) first, to the fullest extent possible, the City shall reimburse Developer by cash payment; and (ii) if any amounts cannot be reimbursed by the City in cash, as determined by the City in its sole discretion, the remaining amount owed to Developer shall be reimbursed by providing the developer a credit against the applicable impact fees as determined by the City based on the Utah Impact Fees Act and the City's applicable Impact Fee Facilities Plan, Impact Fee Analysis, and Impact Fee ordinances. ~~(i.e., road/street impact fees for the 400 South improvements; secondary water impact fees for the secondary water improvements; and culinary/water impact fees for the culinary water improvements).~~ Developer shall pay any remaining balance not offset by such credits, or, if the cost of these improvements exceed the amounted owed by the developer for plats that have been previously recorded, the City shall provide the developer a credit against any future impact fees for plats not yet recorded. The full amount of the reimbursement obligations shall be satisfied using one or any combination of these methods. To the extent the Developer has unused credits against impact fees, such credits shall be freely assignable by Developer to any person or entity so long as the City is notified of the assignment of the credits. The credits granted hereunder shall never expire, and shall remain valid until all of the credits have been used/applied.

For all reimbursements to be paid to Developer under this Agreement, the City shall take reasonable measures, as determined by the City in its sole discretion, to maximize the amount of the cash reimbursements to Developer, recognizing that Developer's preference is to receive cash reimbursements as soon as reasonably possible following completion of the improvements, rather than receiving credit against impact fees over time. To the extent that impact fee credits are used to satisfy reimbursement obligations, the credits shall be sufficient to fully reimburse Developer by the time the last building permit is issued for this Project. To the extent necessary, as set forth in Section 21(d) of the MDA, the City shall

amend its Impact Fee Facilities Plans (the "IFFPs") to incorporate the system improvements as part of a funding plan (if the improvements are not already the subject of the City's IFFPs).

5. **Full Compensation**. The Developer hereby agrees that the reimbursement amounts described in Sections 1 and 4 shall constitute the full and entire amount of reimbursement payable to Developer for the subject Improvements. Developer shall not be entitled to any additional reimbursement, compensation, incentive, or other payment related to said Improvements. When the City has fulfilled its reimbursement obligations under this Agreement, Developer agrees to waive any and all claims related to unconstitutional takings and illegal exactions related to any of the improvements listed herein.

6. **No Accrual of Interest**. The parties expressly agree that the reimbursement amounts to be paid to the Developer, as set forth in this Agreement, have not and shall not in the future accrue interest.

7. **Notices**. All notices, requests, demands, and other communications required under this Agreement, except for normal, daily business communications, shall be in writing. Such written communication shall be effective upon personal delivery to any party or upon being sent by overnight mail service, by facsimile (with verbal confirmation of receipt), or by certified mail, return receipt requested, postage prepaid, and addressed to the respective parties as follows:

If to the Developer:	D.R. Horton, Inc. Attn: Boyd Martin 12351 South Gateway Park Place Suite D-100 Draper, UT 84020
With a copy to:	Christopher Barnette, Esq. Regional General Counsel-West Region 600 West Broadway, Suite 700 San Diego, CA 92101
If to the City:	City of Saratoga Springs Attn: City Engineer 1307 N. Commerce Drive, Suite 200 Saratoga Springs, Utah 84045 Telephone: (801) 766-9793 Facsimile: (801) 766-9794
With a copy to:	City of Saratoga Springs Attn: City Manager 1307 N. Commerce Drive, Suite 200 Saratoga Springs, Utah 84045 Telephone: (801) 766-9793 Facsimile: (801) 766-9794

8. **Term of Agreement**. This Agreement shall remain in effect until Developer has been reimbursed in full for all reimbursement amounts described in this Agreement.

9. **Validity and Severability**. If any section, clause or portion of this Agreement is declared invalid by a court of competent jurisdiction for any reason, the remainder shall not be affected thereby and shall remain in full force and effect.

10. **Amendments**. This Agreement may be amended only in writing signed by the parties hereto.

11. **No Joint Venture**. This Agreement does not create, and shall not be construed to create, a joint venture by the parties and no separate government entity is established by this Agreement.

12. **Incorporation of Recitals**. The recitals above are incorporated herein by this reference as a part of this Agreement.

13. **Effect.** Nothing in this Agreement shall be deemed to modify, affect, or supersede the terms or provisions of the MDA or other Project Approvals. Rather, this Agreement is intended to effectuate and implement the reimbursement obligations of the City as set forth in the MDA, and shall be construed and performed accordingly.

14. **Assignment.** Developer may assign the rights and obligations under this Agreement to a third party ("assignee") so long as the City agrees in writing, such approval not to be withheld unreasonably, and a written instrument is executed by the Developer and assignee clearly indicating the assignee's rights and obligations and Developer's continuing rights and obligations, if any.

15. **Limitation of Damages.** In any action related to the obligations contained in this Agreement, the parties' remedy for breach shall be limited to specific performance only. Also, Developer may not claim individual liability on the part of any City officer, employee, or official.

IN WITNESS WHEREOF, the parties hereto have executed this Reimbursement Agreement by and through their respective, duly authorized representatives as of the day and year first above written.

ATTEST:

By:_____
City Recorder

CITY OF SARATOGA SPRINGS

_____
Mayor

"DEVELOPER"

D.R. Horton, Inc.

_____
By:_____
Its:_____

State of _____)
:ss

County of _____)

On this _____day of_____, 201~~6~~7, personally appeared before me _____ *[name of person(s)]*, whose identity is personally known to me or proved to me on the basis of satisfactory evidence, and who affirmed that he/she is the _____ *[title]*, of D.R. Horton, Inc., a Delaware corporation, and said document was signed by him/her in behalf of said corporation by authority of its bylaws or of a Resolution of its Board of Directors, and he/she acknowledged to me that said corporation executed the same.

_____
Notary Public

EXHIBIT A

~~400 South~~ Schedule of Total Improvements and "Reimbursable Improvements"

~~EXHIBIT B~~

~~Secondary Water - Schedule of Total Improvements and "Reimbursable Improvements"~~

~~**EXHIBIT C**~~

~~**Culinary Water - Schedule of Total Improvements and "Reimbursable Improvements"**~~

RESOLUTION NO. R17-04 (1-3-17)

RESOLUTION OF THE CITY OF SARATOGA SPRINGS, UTAH APPROVING REIMBURSEMENT TO DR HORTON FOR THE UPSIZE OF 400 SOUTH AND RELATED UTILITIES FOR THE LEGACY FARMS PROJECT

WHEREAS, DR Horton is the owner and developer of the Legacy Farms Project; and

WHEREAS, as part of the Legacy Farms project DR Horton made certain improvements to the 400 South roadway which is within, adjacent to and alongside the Legacy Farms project.; and

WHEREAS, In review of the It's Culinary Water, Secondary Water and Transportation Master Plans, the City identified and requested the developer upsize a portion of their culinary water and secondary water system as well as upsize 400 South to a collector roadway to provide additional capacity in these systems to meet the needs of this area as growth continues; and

WHEREAS, DR Horton has agreed to upsize the aforementioned system improvements in 400 South contingent upon the City's agreement to reimburse them for such increase costs; and

WHEREAS, The City has reviewed the bids from DR Horton's contractors for the upsized system improvements and found them to be fair and reasonable;

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Saratoga Springs, Utah that the proposed Reimbursement Agreement attached as Exhibit A is approved and the Mayor is authorized to sign said Agreement. This resolution shall take effect immediately upon passage.

PASSED AND APPROVED this 3rd day of January, 2017.

City of Saratoga Springs

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

ADDENDUM #1 TO CORRIDOR AGREEMENTS 068007 AND 098477
SR-68 WITHIN THE LIMITS OF THE CITY OF SARATOGA SPRINGS

CITY OF SARATOGA SPRINGS
Federal ID No. 87-0575087

ADDENDUM #1

THIS ADDENDUM, made and entered into this ___ day of _____, 20 _____, by and between the **UTAH DEPARTMENT OF TRANSPORTATION**, hereinafter referred to as "**UDOT**" and the **CITY OF SARATOGA SPRINGS**, a municipal corporation in the State of Utah, hereinafter referred to as the "**CITY**".

WITNESSETH:

WHEREAS, UDOT and the **CITY** entered into agreement #068007 on 1 July 2005 and agreement #098477 on 29 October 2008 to preserve a corridor and establish a traffic signal plan and access control plan along the SR-68 within the limits of the **CITY**, to be in accordance with the **CITY's** current transportation master plan and to be in accordance with **UDOT's** current Access Management Standards and practices, and

WHEREAS, **UDOT** has a project under design which includes the installation of new traffic signals along SR-68, Project No. F-0068(92)26, and

WHEREAS, the **CITY** has grown in population and subdivisions have been constructed wherein local streets now connect to SR-68 since the execution of the aforementioned agreements, and

WHEREAS, this **ADDENDUM** is now written to define and update existing, warranted, and proposed traffic signal locations within the current **CITY** limits.

NOW THEREFORE, it is agreed by and between the parties as follows:

1. The following are identified as existing, warranted or proposed traffic signal installations along SR-68:

    - Foothill Boulevard (5200 South) (Proposed)
    - Bonneville Drive (4700 South) (Proposed)
    - Harbor Park Way (Proposed)
    - Wildlife Boulevard (Proposed)
    - Village Parkway (Proposed)
    - Stillwater Drive (Warranted, to be constructed with project)
    - Fairway Boulevard (Proposed)
    - Ring Road (Warranted, to be constructed with project)
    - Centennial Boulevard (Proposed)
    - Grandview Boulevard (Existing)
    - Parkway Boulevard (Warranted, to be constructed with project)

- 400 South (Proposed)
- Pony Express Parkway (Existing)
- 400 North (Existing)
- Pioneer Crossing (SR-145) (Existing)
- Market Street (Proposed)
- South Commerce Drive (Proposed)
- Crossroads Boulevard (Existing)
- North Commerce Drive (Existing)
- Aspen Hills Boulevard (Proposed)
- Harvest Hills Boulevard (Proposed)
- 2400 North (Proposed)

2. It is understood by both parties that the current access management category remains in place, which in part states traffic signal spacing is at least 2,640 feet except for the segment between South Commerce Drive and North Commerce Drive, which is at least 1,320 feet.

3. It is further understood by both parties that even though traffic signal spacing is as noted in #2 above, it is reasonable to compromise and make exceptions to signalize some intersections based on the **CITY'S** master plan development and traffic patterns, and without impeding acceptable traffic flow.

4. All terms and conditions of the existing **UDOT** agreements 068007 and 098477 shall remain in effect. No part of this **ADDENDUM** shall relieve the **CITY** of any responsibility or liability associated with the original agreements.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

ATTEST:

By: _____
Title: _____
Date: _____

(IMPRESS SEAL)

CITY OF SARATOGA SPRINGS
Municipal Corporation in the State of Utah

By: _____
Title: _____
Date: _____

ADDENDUM #1 TO CORRIDOR AGREEMENTS 068007 AND 098477
SR-68 WITHIN THE LIMITS OF THE CITY OF SARATOGA SPRINGS

CITY OF SARATOGA SPRINGS
Federal ID No. 87-0575087

****

RECOMMENDED FOR APPROVAL: UTAH DEPARTMENT OF TRANSPORTATION

By:_____
Region Three Traffic Operations Engineer

Date: _____

By: _____
Region Three Director

Date: _____

APPROVED AS TO FORM:

This Form Agreement has been previously approved as to form by the office of Legal Counsel for the Utah Department of Transportation.

COMPTROLLER OFFICE

By: _____
Contract Administrator

Date: _____

RESOLUTION NO. R17-05 (1-3-17)

RESOLUTION OF THE CITY OF SARATOGA SPRINGS, UTAH APPROVING ADDENDUM #1 TO CORRIDOR AGREEMENTS 068007 AND 098477 SR-68 WITHIN THE LIMITS OF THE CITY OF SARATOGA SPRINGS

WHEREAS, UDOT and the City entered into agreements #068007 on July 1, 2005 and #098477 on October 29, 2008 to preserve a corridor and establish a traffic signal plan and access control plan along the SR-68 within the limits of Saratoga Springs; and

WHEREAS, UDOT has a project under design which includes the installation of new traffic signals along SR-68, Project No. F-0068(92)26; and

WHEREAS, Addendum #1 is written to define and update existing, warranted, and proposed traffic signal locations within the current City limits;

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Saratoga Springs, Utah that the proposed Addendum ##1 to the Corridor Agreements 068007 and 098477 SR-68 attached as Exhibit A is approved and the Mayor is authorized to sign said Agreement. This resolution shall take effect immediately upon passage.

PASSED AND APPROVED this 3rd day of January, 2017.

City of Saratoga Springs

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

City Council
Staff Report

Author: Mark T. Edwards
Subject: Sports Complex Design Contract Modification
Date: January 3, 2017
Type of Item: Contract Amendment Approval

Description:

A. **Topic:** This item is for the approval of a modification to the 25 acre Sports Complex Design Contract between the City and Professional Engineering Consultants (PEC).

B. **Background:** Staff is requesting three modifications to the design contract for the Sports Park which the Council approved on March 29, 2016.
The City originally contemplated building a 25 acres park in the 1st phase. The City Council has since requested Staff to increase the size of the park to 30 acres. PEC has requested a contract modification for their additional efforts.
The second modification derived from the need for an onsite maintenance building for the Park's Department, PEC has provided architectural design fees for the additional efforts.
The third modification request was initiated by PEC. They unintentionally omitted architectural design fees for the two scorekeeper's buildings in their original Proposal which were to be constructed in the first phase. In a subsequent proposal for the omitted architectural fees, PEC and AJC, who was the architect originally teamed up with PEC, proposed $98,000 for design services for the two scorekeeper buildings, one with the storage room the other with a concession room. Discussions with PEC to lower the design fees for the two buildings yielded a compromise. PEC and AJC would lower their costs if the two building mirrored each other, meaning, if both building were identical, design and oversite cost could be reduced significantly. Staff then requested PEC solicit architectural bids from 3 other architectural firms for the two identical buildings and the maintenance building. Staff felt this process would ensure the City was receiving competitive fees for services. Three proposals were provided to the City, the three bids were very competitive, and the lowest was provided by AJC.

C. **Analysis:** Staff feels the addition of five acres to the project warrants increased effort and fees. The prorated fees are in line with the design fees provided in the original proposal for the first 25 acres. The maintenance building fees provided by PEC are competitive with the other proposals. The architectural fees requested by PEC and AJC appear to be very reasonable based on the three other proposals.

D. Fiscal Impact: Funding for these contract modifications will primarily come from a proposed 2017 Park Revenue Bond.

E. Recommendation: Staff Recommends that the City Council approve PEC'S contract fee modification requests for additional engineering and architectural design for the Sports Complex improvements.

Modified Fee;

$19,881 - Design fees for additional 5 acres

$50,350 - Architectural design fees for the two scorekeeper's structures and the maintenance structure

Saratoga Springs Sports Complex

Summary of Request for additional design fees

1. **<u>Architecture of scoring tower, concessions, and restrooms.</u>**
   The PEC design team included conceptual design of the scoring tower, concessions area, and restrooms in our proposal. At the time of proposing on the project, it was unclear how many buildings, the number of stalls in the restrooms, the size of the building, or the types of the buildings. The PEC team thought it best to include a fee for conceptual design and then work with the City for a final design that included construction documents. The RFP included the following language in relation to the architecture:

- *Comprehensive construction design for the first phase of the sports fields, park and amenities, including landscaping, irrigation, parking, lighting, building designs, utilities and drainage.*
- *Structures: Provide all architectural elevations and designs and pre-fabricated pavilion placement designs.*

In response to the RFP, the PEC team provided the following:

Structures (Architecture): PEC will provide architectural elevations, designs, and engineering for the vertical structures of the first phase of the master plan. It is anticipated that these structures will include no more than the following:

- *one pre-fabricated pavilion,*
- *one restroom facility,*
- *one small concession building, and*
- *one scorer's booth*

The PEC team included a fee of $15,510 for conceptual design of the restroom facilities, the concession building and scorer's booth. During the design process it became clear to the team that the project needs to custom design a 2-story structure with the restroom and concession facilities below the scorer's booth.

Now that we have a more complete picture of the final architectural design, the PEC team requests additional design fees to complete the construction documents for the following:

1. Building #1 (West Structure)- To include restrooms, scoring tower, and concessions area. (lower 1,936 sq. ft and upper 616 sq. ft)

2. Building #2 (Center Structure)- To include restrooms, scoring tower, and concessions areas. (lower 1,936 sq. ft and upper 616 sq. ft)

3. Building #3 (Maintenance Structure)- To include storage, chemical wash station, and floor drain to sanitary sewer. (one story only- 864 sq. ft)

2. **<u>Additional design services for 5 acres.</u>**

As requested, PEC modified the RFP master plan to accommodate an additional 5 acres of land and created a new 30-acre master plan not included in the current contract. This additional area will require planning and engineering over and above the original contract and will include: ball field, sidewalk and parking design, grading, storm drainage, utility design and coordination, and related cost estimating.

The additional area, less the architectural concepts provided by ajc architects for $15,510, and the financial feasibility study as provided by Zions Corp. for $25,000, left a total remaining balance of $114,408 for planning and engineering of the 25-acre master plan area. Based on the $114,408 /25 acres equates to a fee of $4,576/acre. When multiplied for the additional 5 acres, the fee would come to $22,881.00. PEC recognizes some cost savings by simply adding the 5 acres to the 25 acres already underway in the planning and engineering phase. Therefore, it is proposed to add **$19,881.00** (cost savings of $3,000) to the current contract for additional planning and engineering services.

SUMMARY OF ADDITIONAL FEES REQUESTED

1.	Building #1 Construction Documents, Building #2 (Mirrored version of Building 1), Building #3 Construction Documents-	$50,350.00
2.	Additional 5 acres-	$19,881.00
	TOTAL	**$70,231.00**

CURTIS MINER
ARCHITECTURE

5 December 2016
Revised: 6 December 2016

Mr. Lars Anderson
PEC, West Jordan Office
986 West 9000 South
West Jordan, Utah 84088

Re: Design Proposal – Lehi Parks Buildings

Dear Lars,

I appreciate the opportunity to provide this design proposal for the new Lehi Parks Scorers, Restroom, Concessions, and Equipment Buildings. As you requested, I have prepared the following information for your review.

Proposed Project Description

The overall park masterplan is being developed by PEC and other consultants working under their direction. These buildings fit within the park and the work proposed under this letter is only for the buildings. The project will consist of the following buildings:

1. Building A: Scorer's Building / Restrooms / Concessions / Equipment. Two level 2,552 SF building containing men's and women's restrooms, concessions sales area, equipment storage closets, and an upper level scorer's booth.

2. Building B: Mirrored copy of Building 'A'

3. Building C: Maintenance Building. Single level 960 SF maintenance building.

All building design will be based on schematic design work completed by a previous architect. For the purpose of this work, it is understood that all copyright and design ownership issues have been addressed between the City and the original architect and that the new architect has full rights to use, and to alter if necessary, any and all designs produced previously. It is further understood that the final design will not be materially altered from the schematic design completed by the original architect, and that any material alterations will result in out-of-scope charges under the hourly billing rates shown below.

Principal Architects: Curtis N. Miner, AIA, NCARB • Gerrit W. Timmerman, AIA • Jay V. Taggart, AIA
American Institute of Architects • National Council of Architectural Registration Boards
233 South Pleasant Grove Blvd. Suite 105, Pleasant Grove, Utah 84062 • Phone (801) 769-3000 • cma@cmautah.com

The general contractor will be selected by the City from a pre-qualified group of applicants who have demonstrated their experience and ability to complete a project of this size and type. Overall bidding by general contractors will be managed by the City and by PEC. The architect will provide assistance as necessary for questions related to the buildings under this agreement.

Proposed Project Budget

During the course of work under this proposal, the building construction budget will be developed and finalized by the owner and the owner's general contractor. If provided by the architect or the architect's consultants, construction cost estimates are based on historical data and should not be taken as final or precise construction cost data. Ultimate responsibility for construction costs rests with the owner and / or the owner's general contractor.

Proposed Services

Curtis Miner Architecture proposes to provide the following items and services.

Surveys, Engineers, and Design Consultants

- Structural engineering services.
- Mechanical engineering services.
- Electrical engineering services.

Entitlement / Site Plan Approval Coordination

Support of PEC during building submittal applications (owner pays submittal fees), printing of drawings and reports required for submittals.

Schematic Design

NOT INCLUDED: Completed by original architect.

Design Development

Further development of schematic design provided by the owner. Involves finalizing architectural design elements and selection of structural, HVAC, plumbing, electrical, and other building systems.

Construction Documentation / Building Permit Coordination

Preparation of construction drawings and documents suitable for building permit application and for construction by a licensed and qualified general contractor. Also includes coordination of all permit submittal applications (owner pays submittal fee) and printing of drawings and reports required for submittals.

Bidding Administration

Support of City and PEC during evaluation of general contracts' bids to construct the buildings designed under this agreement.

Construction Administration

Timely responses to contractor's requests for clarification, up to one construction site visit

per month if requested by the owner and/or contractor, shop drawing review of architectural elements and elements designed or specified by consultants under the architect's contract.

Notes:

1. *The owner shall provide, and the architect shall rely on, all information necessary for project design, entitlement, and permitting.*
2. *Services will continue and drawings, reports, and other instruments of service will be made available in digital format as long as the owner's account is current and in good standing. Payment of architectural fees is not dependant on project financing.*
3. *Design modifications after approval of a prior design phase will be completed under the time and material rates below.*
4. *Services not specifically listed above are the responsibility of the owner as is the liability associated with those services. These typically include (but are not limited to):*
    a. *Printing of owner and contractor copies of drawings, documents, and reports*
    b. *Soils, geotechnical, environmental, and title investigations and reports*

Proposed Project Schedule

It is proposed that the project be completed under the following schedule:

Schematic Design:	Complete
Design Development:	3 Weeks
Construction Documentation:	4 Weeks

If unforeseen complications are encountered during development of the project, the above project schedule will be equitably adjusted.

The owner may, at his own risk, authorize commencement of the design development and construction document phases prior to city site plan approval. If changes to the project are required due to city conditions of approval, the owner will pay the cost to make such changes incurred by the architect and his consultants.

The owner may, at his own risk, authorize commencement of the bidding phase prior to issuance of the building permit. If changes to the project are required during the building permit process, the owner will pay the cost to make such changes incurred by the architect and his consultants.

Proposed Project Fee

It is proposed that the above outlined work be completed under the following fee schedule:

Building A:	$27,500
Building B:	$17,000
Building C:	$9,000

Billing for design services and reimbursable expenses (if any) will occur monthly and be based on the percentage of total work completed by the architect and/or his consultants prior to the billing date. Work by the architect and his consultants will continue and drawings will be delivered only as the owner's account is kept current. A 3% service fee will be added to payments made by credit card.

Prior to commencement of the work, a standard AIA contract will be signed by both the owner and architect and the original returned to the office of the architect.

If services not included in this design proposal are required, reimbursable expenses (including services of consulting engineers) will be billed at direct cost plus 10%, and time spent by the architect and/or his staff will be billed as follows:

Principal Architect:	$140 per hour
Associate Architect:	$125 per hour
Project Architect:	$110 per hour
Project Manager:	$95 per hour
Senior Drafter:	$70 per hour
Junior Drafter:	$60 per hour
Secretarial:	$55 per hour
Mileage:	$0.56 per mile
Printing / Copying Costs:	Standard Rates

For a more complete explanation of the operating terms and conditions of Curtis Miner Architecture as well as additional information on the work proposed, see the attached document *Curtis Miner Architecture: Terms, Conditions, and Supplemental Information* which is hereby made part of this design proposal.

I appreciate the opportunity to submit this proposal and look forward to a successful project. If you have any questions or concerns about the services proposed, or the terms and conditions of this proposal, please contact me at my office. Upon your approval of this proposal, I will prepare the Design Agreement in anticipation of beginning work on your project. I look forward to hearing from you soon.

Sincerely,

Curtis N. Miner, AIA, NCARB
Architect

Attachments:
Curtis Miner Architecture: Terms, Conditions, and Supplemental Information

Saratoga Springs Sports Complex
Architectural Fees Comparison

	1	2	3	4
	ajc	**Archiplex**	**CMA**	**Think**
Fees (All 3 buildings combined)	$50,350.00	$52,385.00	53,500.00	$80,600.00

Note: See attached proposals.

Think
Architecture

+ Architecture
+ Landscape Architecture
+ Land Planning
+ Construction Management
+ Interior Design

9 December 2016

Greg Kloberdanz
Project Engineering Consultants
986 West 9000 South
West Jordan, Utah 84088

Re: Saratoga Springs Concession and Maintenance Buildings

Greg,

Below is our scope of work and a fee proposal for the Saratoga Springs Sports Complex project.

Scope of Work:

a) Provide bidding and construction documents for a 2,552 sf concession and scorekeeper building based on schematic drawings by AJC Architects.
b) Provide bidding and construction documents for a second 2,552 sf concession and scorekeeper building. Plan will be based on the first concession and scorekeeper building with the floor plan mirrored.
c) Provide bidding and construction documents for a 960 sf maintenance building based on schematic drawings by AJC Architects.
d) Provide Construction Administration services to include shop drawing review, issuing of clarifications to the contractor and site visits as required.

Fee Proposal:

a) Concession Building - Bidding and Construction documents:

Architectural Fee -	$36,400.
Structural Engineer Fee -	$ 4,900.
Plumbing Engineer Fee -	$ 1,900.
Electrical Engineer Fee -	$ 3,600.
Total	$46,800.

b) Second Concession Building - Bidding and Construction documents:

Architectural Fee -	$ 4,500.
Structural Engineer Fee -	$ 1,300.
Plumbing Engineer Fee -	$ 700.
Electrical Engineer Fee -	$ 1,200.
Total	$ 7,700.

c) Maintenance Building - Bidding and Construction documents:

Architectural Fee -	$14,500.
Structural Engineer Fee -	$ 2,300.
Plumbing Engineer Fee -	$ 900.
Electrical Engineer Fee -	$ 1,900.
Total	$19,600.

5151 South 900 East
Suite 200
Salt Lake City, Utah 84117
P +801.269.0055
www.thinkaec.com

d) Construction Administration Services:

50 hrs. @ $130.00/hr =		$ 6,500.
	Total	$ 6,500.

Total Fee	**$80,600.**

Please let me know if have any questions regarding the proposal.

Sincerely,

Think Architecture, Inc.

C. Scott Wilkinson
Architect

ajc architects

December 8, 2016

Lars Anderson, PLA
Principal / COO

Greg Kloberdanz, PLA, LEED GA
Planning & Landscape Architecture Manager

PEC
986 West 9000 South
West Jordan, UT 84088

via email: landerson@pec.us.com
gkloberdanz@pec.us.com

RE: Saratoga Springs Sports Complex

Lars and Greg:

We are excited to be moving forward with PEC on the development on Construction Documents for the new buildings proposed for Phase One of the new Saratoga Springs Sports Complex. Based on our conceptual design documents to date, our understanding of the Scope of Work is as follows:

Scope of Work

- Building 1: (1) New Restroom/Concessions/Scorekeepers Building consisting of 1,936 SF on the main level and 616 SF on the upper level for a total of 2,552 SF.
  No heating. Cooling on the upper level only.
  Equipment information for the concessions to be provided by client.

- Building 2: (1) Additional Restroom/Concessions/Scorekeepers **Repeat/Re-use of Building #1**

- Building 3: (1) Maintenance Building approximately 960 SF.

Services Provided

- Complete Design and Specifications for all three buildings for Architectural, Structural, Mechanical and Electrical.
- Assistance with submitting plans for Plan review and Permitting, including responding to Plan Review Comments.
- Construction Administration Services for responding to GC questions, issuing RFI's and ASI's, RFP's and CO's. Construction Observations at reasonable intervals during construction, Record docs for the client.

703 east 1700 south
salt lake city, utah 84105
ph: 801.466.8818
fx: 801.466.4411
www.ajcarchitects.com

Fee Proposal **$50,350**

Fees are based on all three buildings designed at the same time and one construction effort.
All documents will be provided to PEC electronically. No printing by ajc included in our fee proposal.

Items Excluded

Civil Design
Landscape Design
Detailed Cost Estimates
Fire Sprinkler Design (not anticipated to be required)
Ballfield Lighting Design and Controls
Scorekeeping console design and scoreboards
Commissioning
Printing of Review Sets
Record Docs

Please review and let me know if you have any questions or need any additional information. We look forward to working with PEC on this first phase for Saratoga Springs.

Sincerely- Jill A. Jones, AIA LEED® AP BD+C
Principal Architect, **ajc architects**

ajc architects

703 east 1700 south
salt lake city, utah 84105
ph: 801.466.8818
fx: 801.466.4411
www.ajcarchitects.com

December 09, 2016

Greg Kloberdanz
Project Engineering Consultants
986 West 9000 South
West Jordan, Utah 84088

Re: Saratoga Springs Sports Complex
Proposal for Concessions and Restroom Facilities and Maintenance Facility

Dear Greg:

Archiplex Group respectfully submits the following fee proposal for the Concessions and Restroom Facilities and Maintenance Facility at the Saratoga Springs Sports Complex, Saratoga Springs, Utah. This proposal is based upon information (scope of work) provided to us by you in an email dated December 07, 2016 and follow-up documentation since.

The new Concessions and Restroom Building will consist of the following program elements:

1. 1,936 SF at the main level;
2. 616 SF in the upper scorekeeping level;
3. Men's and Women's restrooms that are each ADA compliant;
4. Appropriate Mechanical, Plumbing and Electrical systems for this type of facility;
5. Concessions area with appropriate equipment and systems for this type of facility (equipment to be provided by others);
6. Atlas Brick;
7. Metal Roof with gutters and downspouts;
8. (2) identical Concessions building will be built, one a mirror image of the other, separated by a distance of approx. 300 feet.

The new Maintenance Building will consist of the following program elements:

1. 960 SF at the main level;
2. One large open space with appropriate trench drains;
3. Chemical rinse sink;
4. (1) large O.H. door and (1) man door;
5. Designed to match the Concessions buildings.

<u>Assumptions</u>

1. No wetlands are present or will be impacted by the project area of disturbance;
2. Utilities are available to the park.
3. Landscape architecture by others;
4. Civil engineering by others;
5. Local Authority building, planning or zoning applications, presentations or meetings extending beyond the scope anticipated in our current agreement are additional;

6. Program changes subsequent to the completion of the schematic phase are additional;
7. Ground conditions allow for the use of conventional spread footings;
8. Geotechnical report is provided by others;
9. All (3) structures will be built at the same time, otherwise, additional services for CA will be required.

Services include bid ready construction documents, including consultant engineering for structural, mechanical, plumbing and electrical.

Our services are provided via our Salt Lake City office as the base of operations and all reimbursable expenses are developed accordingly. We anticipate having two design meetings in our Salt Lake City office to verify scope.

We will provide construction service reviews including RFI's, submittals and other documentation logging services. We have allowed for ten (10) architectural site visits during the construction services phase, including pre-bid, nine (9) construction meetings and substantial completion.

Compensation:

Based on the assumptions above, the architectural and engineering services for the Concessions and Restroom Project will be a lump sum of $52,385.20. Additional expenses include mileage cost reimbursement and deliverables including travel expenses and permit set printing (2 sets for each structure) included in the fee table below.

Saratoga Springs - Concessions / Restroom and Maintenance Facilities 12/9/2016

Concessions/Restroom/Scorekeeping Facility					
Archiplex Hours			**Hours**		**Subtotal**
Document Phase	**Prin.**	**P.M.**	**CAD**	**Clerical**	
Rate =	$ 120.00	$ 90.00	$ 48.00	$ 35.00	
Data Collection, Code Review	2.00	8.00	0.00	0.00	10.00
Document Review, Consultant Coordination	8.00	16.00	0.00	0.00	24.00
Schematic Design	10.00	30.00	24.00	0.00	64.00
Develop Architectural Bid Documents	4.00	30.00	120.00	0.00	154.00
Prepare Specifications	1.00	16.00	0.00	4.00	21.00
Meetings / Owner-User Coordination	9.00	9.00	0.00	0.00	18.00
Permit Submittal	2.00	10.00	2.00	0.00	14.00
Bid Phase	2.00	6.00	2.00	4.00	14.00
Hours	38.00	125.00	148.00	8.00	319.00
Subtotal	$ 4,560.00	$ 11,250.00	$ 7,104.00	$ 280.00	$ 23,194.00
Construction Phase					
Construction Administration (RFI's, Submittals...) hours	2.00	22.00	6.00	4.00	
Number of Construction Site Visits	3.00	10.00	0.00	0.00	
Hours per Visit	2.50	2.50	0.00	0.00	
Hours	7.50	25.00	0.00	0.00	32.50
Subtotal	$ 1,140.00	$ 4,230.00	$ 288.00	$ 140.00	$ 5,798.00
Engineering	Design	CA			Subtotal
BHB - Structural Engineering	$ 2,240.00	$ 560.00			$ 2,800.00
PVE - Mechanical Plumbing Engineering	$ 2,160.00	$ 540.00			$ 2,700.00
PVE - Electrical Engineering	$ 1,155.00	$ 285.00			$ 1,440.00
	$ 5,555.00	$ 1,385.00			$ 6,940.00
Total Architectural/Engineering Services				**Subtotal =**	**$ 35,932.00**
Expenses					
Printing (2 sets of plans & Specs) for each building					$ 400.00
Travel Expenses	miles	# of trips	$/mile		
Travel /Round Trip Mileage	74.00	6.00	$ 0.55		$ 244.20
				Expenses Subtotal =	**$ 644.20**
				CONCESSIONS BUILDING #1 TOTAL =	**$ 36,576.20**

Concessions/Restroom/Scorekeeping Facility - (Site Adapt 2nd Concessions Building)				
Arch/Eng.	CD's	CA		Subtotal
Archiplex Group	$ 1,500.00	$ -		$ 1,500.00
BHB - Structural Engineering	$ -	$ -		$ -
PVE - Mechanical Plumbing Engineering	$ 1,404.00	$ 351.00		$ 1,755.00
PVE - Electrical Engineering	$ 760.00	$ 180.00		$ 940.00
	$ 3,664.00	$ 531.00	**Subtotal =**	$ 4,195.00
			CONCESSIONS BUILDING #2 TOTAL =	**$ 4,195.00**

Maintenance Building					
Archiplex Hours			**Hours**		**Subtotal**
Document Phase	**Prin.**	**P.M.**	**CAD**	**Clerical**	
Rate =	$ 120.00	$ 90.00	$ 48.00	$ 35.00	
Data Collection, Code Review	1.00	2.00	0.00	0.00	3.00
Document Review, Consultant Coordination	1.00	5.00	0.00	0.00	6.00
Schematic Design	1.00	8.00	6.00	0.00	15.00
Develop Architectural Bid Documents	1.00	8.00	64.00	0.00	73.00
Prepare Specifications	1.00	2.00	0.00	4.00	7.00
Meetings / Owner-User Coordination	2.00	2.00	0.00	0.00	4.00
Permit Submittal	1.00	4.00	1.00	0.00	6.00
Bid Phase	1.00	4.00	2.00	4.00	11.00
Construction Administration	0.00	0.00	0.00	0.00	0.00
Hours	9.00	35.00	73.00	8.00	125.00
Subtotal	$ 1,080.00	$ 3,150.00	$ 3,504.00	$ 280.00	$ 8,014.00

Engineering	CD's	CA		Subtotal
BHB - Structural Engineering	$ 1,600.00	$ -		$ 1,600.00
PVE - Mechanical Plumbing Engineering	$ 1,040.00	$ 260.00		$ 1,300.00
PVE - Electrical Engineering	$ 560.00	$ 140.00		$ 700.00
	$ 3,200.00	$ 400.00	**Subtotal =**	$ 3,600.00
			MAINTENANCE BUILDING TOTAL =	**$ 11,614.00**

TOTAL A/E PROJECT FEES =	**$ 52,385.20**

Schedule:

We will need to allot (4) weeks design plus Owner reviews which are additional.

CONCESSIONS/RESTROOM FACILITY CONCEPT :

MAINTENANCE FACILITY CONCEPT :

SITE CONCEPT :

Owner Responsibilities:
Owner to provide Geotechnical Report and Topographical Survey as required for proper design of this facility.

We are pleased with this opportunity to assist Saratoga Springs City with the Concessions and Restroom Facilities and Maintenance Facility at the Saratoga Springs Sports Complex. If you have any questions or would like to discuss this proposal, please contact me.

Proposed by

By: Ralph Stanislaw, AIA LEED AP+
Title: Principal

In the foregoing terms and conditions, the Consultant shall refer to Archiplex Group, LLC, the Client shall refer to the business for whom services are to be rendered, and the Owner shall refer to the entity to whom the Client is contracted.

It is agreed between the parties hereto that the Consultant shall not be required to, and will not, render any decision, interpretation or recommendation regarding questions of a legal nature or which may be construed as constituting a legal opinion. It is agreed between the parties hereto that in no event shall the Consultant or his Subconsultants have any responsibility for the discovery, presence, handling or removal or disposal or exposure of persons to hazardous materials in any form at the project site, including but not limited to asbestos, asbestos products, polychlorinated biphenyl (PCB) or other toxic substance.

Retaining Subconsultants:

The Consultant reserves the right to engage the services of any subconsultants at its discretion as deemed appropriate. Such subconsultants may include any specialized consulting services determined necessary by the Consultant to carry out the scope of our services.

Billing and Payment Terms:

PAYMENT DUE: The Consultant will submit invoices on a monthly basis which are due upon presentation and shall be considered past due if not paid within thirty (30) calendar days of the due date. Payments shall not be withheld, postponed or made contingent on the construction, completion or success of the project or upon receipt of offsetting reimbursement or credit from other parties who may have caused additional services or expenses. No withholdings, deductions or offsets shall be made for any reason unless we have been found to be legally liable for such amounts. Payment for services rendered and expenses incurred shall be due and payable regardless of any subsequent suspension or termination of this agreement by either party.

INTEREST: If Client payment in full is not received by the Consultant within thirty (30) calendar days of the invoice date, invoices shall bear interest at one-and-one-half (1.5) percent (or maximum rate allowable by law, whichever is less) of the PAST DUE amount per month, which shall be calculated from the invoice date plus thirty (30) days. Payment thereafter shall first be applied to accrued interest and then to the unpaid principal.

COLLECTION COSTS: If payments are not received when they are due and collection costs are incurred, all such collection costs incurred shall immediately become due and payable by Client. Collection costs shall include, without limitation, legal fees, collection agency fees and expenses, court costs, collection bonds and reasonable staff costs at standard billing rates for our time spent in efforts to collect. This obligation to pay collection costs shall survive the term of this agreement or any earlier termination by either party.

SUSPENSION OF SERVICES: If the Client fails to make payments when due or otherwise is in breach of this agreement, the Consultant may suspend performance of services upon three (3) calendar days' notice. The Consultant shall have no liability whatsoever for any costs or damages as a result of such suspension caused by any breach of this agreement. Upon payment in full, the Consultant shall resume services under this agreement, and the time schedule and compensation shall be equitably adjusted to compensate for the period of suspension plus any other reasonable time and expense necessary for the Consultant to resume performance.

TERMINATION OF SERVICES: If the Client fails to make payment in accordance with the payment terms herein, this shall constitute a material breach of this agreement and shall be cause for termination of this agreement by the Consultant.

Contingency:

The Client and the Consultant agree that certain increased costs and changes may be required because of possible omissions, ambiguities or inconsistencies in the drawings and specifications and that the final construction cost of the project may exceed the estimated construction cost. Therefore, the Consultant requires that the Client have the Owner set aside a reserve in the range of three (3) to five (5) percent of the project costs as a contingency to be used, as needed, to pay for any such increased costs and changes. The Client further agrees to make no claim by way of direct or third-party actions against us or our subconsultants with respect to any increased costs within the contingency because of such changes or because of any claims made by the contractor relating to such changes.

Limitation of Liability:

In recognition of the relative risks and benefits of the project, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit the Consultant's liability for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, including attorney's fees and costs and expert-witness fees and costs, so that our total aggregate liability shall not exceed twice the Consultant's total fee for services rendered on this project. It is intended that this limitation apply to any and all liability or cause of action however alleged or arising, unless otherwise prohibited by law. It is

agreed between the parties hereto that in no event shall Consultant be responsible to Client for any consequential, incidental, or special damages resulting or arising from the performance of this agreement.

Standard of Care:
Many factors outside our control may affect our ability to complete the services to be provided under this agreement. We will perform these services with reasonable diligence and expediency consistent with sound professional practices. In providing services under this agreement, the Consultant will endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Upon notice and by mutual agreement between the parties, the Consultant will without additional compensation, correct those services not meeting such a standard. The Consultant makes no warranty, either expressed or implied, as to his findings, opinions, recommendations, factual presentations, or professional advice other than that they were promulgated after following a practice usual to the Consultant's profession.

Code Compliance:
The Consultant shall exercise usual and customary professional care in its efforts to comply with all laws, codes and regulations in effect as of the date of this agreement. Design changes made necessary by newly enacted laws, codes and regulations after this date shall entitle the Consultant to a reasonable adjustment in the schedule and additional compensation.
In the event of a conflict between laws, codes and regulations of various governmental entities having jurisdiction over this project, the Consultant shall notify the Client of the nature and impact of such conflict. The Client agrees to cooperate and work with the Consultant in an effort to resolve this conflict.

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Consultant as instruments of service shall remain the Consultant's property. The Consultant retains all common law, statutory and other reserved rights, including the copyright thereto.

Rework:
While it is assumed that floor plans, reflected ceiling plans, mechanical systems, elevations, etc. will be revised during design, once the Consultant has started engineering and drafting, the Consultant limits such revisions to 10% at each design submittal. Beyond this amount, the Consultant will make changes on an hourly basis.

Hourly Rate Schedule: (The rates are subject to review and adjustment semi-annually [January and July])

Principal	$120.00/hr.
Managing Architect	$95.00/hr.
Architect	$85.00/hr.
Technical Manager	$70.00/hr.
Project Architect / Technical Coordinator	$60.00/hr.
Architectural Designer	$55.00/hr.
Architectural Coordinator / CAD Technician	$50.00/hr.
Clerical	$40.00/hr.

Reimbursable Expenses:
Reimbursable expenses will include all costs of transportation and travel time, out-of-town living expenses when traveling in connection with projects, materials, renderings and models, printing, photographs, postage and delivery charges, long distance telephone calls, etc. This is not a complete listing of reimbursable expenses, but merely some examples to indicate the nature of these expenses. Reimbursable expenses will be billed at 1.10 times actual amounts to assist with administrative costs, and are considered over and above any not-to-exceed amounts quoted.

Dispute Resolution:
Should any disagreement arise between the Parties with respect to the performance of this Agreement or its termination, or with respect to any other matter, cause or thing whatsoever not herein otherwise provided for, such disagreement shall be referred to each Party's CEO, and, should they fail to achieve resolution, the disagreement may be decided by alternative forms of dispute resolution, as mutually agreed, or otherwise determined by such remedies of law as are available to the Parties.

End of Terms and Conditions **Date: December 09, 2016**

RESOLUTION NO. R17-06 (1-3-17)

A RESOLUTION APPROVING A CONTRACT MODIFICATION WITH PROFESSIONAL ENGINEERING CONSULTANTS (PEC) FOR ADDITIONL DESIGN SERVICES

WHEREAS, On March 29, 2016 the City awarded a design contract to Professional Engineering Consultants (PEC) for Saratoga Springs 25 acre Sports Complex (Project)

WHEREAS, the City Council of the City of Saratoga Spring determined that PEC did not include architectural design fees for the two score keeper's structures in the original overall contract and the City Staff has since added 5 acres to the park design and a new Park's maintenance structure to the Project not anticipated by PEC in their design fees

WHEREAS, the City of Saratoga Springs requested that PEC provide design fees for the omitted architectural design for the score keepers structures, the new Park's maintenance structure and the additional 5 acres

WHEREAS, a City committee reviewed the modified scope of work and fees for the original contract and for additional architectural design services and 5 acres of additional park space as submitted by PEC for the Project for accuracy

WHEREAS, the City Council has determined that modifying the scope of work for original contract for additional architectural designs and the additional 5 acres of park space is in the best interest of the public, will further the public health, safety, and welfare, and will assist in the efficient administration of City government and public services.

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

The City of Saratoga Springs does hereby approve a modified scope of work and additional architectural design services submitted for the Saratoga Springs Sports Complex. Design Fees for the two omitted score keeper's structures and the additional Park's maintenance structure will be $50,350 and the design fees for the additional 5 acres is $19,881

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

APPROVED AND ADOPTED this 3rd day of January, 2017.

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

City Council Staff Report

Author: Gordon Miner, City Engineer
Subject: December 2016 Update to the Transportation Master Plan
Date: December 6, 2016
Type of Item: Transportation Master Plan

CITY OF SARATOGA SPRINGS

A. Executive Summary: As an element of the General Plan, the Transportation Master Plan (TMP) is a guide to provide capacity in the City's transportation system to accommodate expected growth. This is an update to a previously-adopted TMP.

Recommendation: Staff recommends that the City Council adopt this update to the TMP.

B. Background: The original TMP was adopted in 2012 and amended in 2013. This update addresses: travel demand modelling, demographic data, roadway level of service, and a planned 2040 roadway network, based on the regional network plans found in the Mountainland Association of Governments TransPlan40. This item went before the City Council on November 1st and was continued pending minor revisions.

C. Funding Source: Not applicable.

D. Review: This document was prepared by Horrocks Engineers, a transportation engineering consulting firm. It was subsequently reviewed by the City's Development Review Committee. This is an opportunity for the City Council to review it in light of public comment.

Because the City is growing so rapidly, it is anticipated that this TMP will need to be revised often. So, adopting it tonight does not mean that the City will be locked into an unalterable long-term course. It is simply intended to provide current direction, which can and will be adjusted slightly from time to time.

E. Recommendation and Alternatives: Staff recommends that the City Council adopt this update to the TMP by choosing from the following alternatives:

Alternative 1 - Adoption

"I move to **adopt** this December 2016 Update to the Transportation Master Plan".

Alternative 2 – Adoption with Modifications

"I move to **adopt** this December 2016 Transportation Master Plan with direction to the Staff to modify it as follows:"

1. _____

2. _____
3. _____

Alternative 3 – Denial

"I move to **deny** the adoption of the 2016 Update to the Transportation Master Plan with the following direction to the Staff for changes needed to render a future consideration:

1. _____
2. _____
3. _____

J. Attachments:

1. Draft of the December 2016 Update to the Transportation Master Plan

SARATOGA SPRINGS

DRAFT

SARATOGA SPRINGS

TRANSPORTATION MASTER PLAN

HORROCKS ENGINEERS

Executive Summary

2017 Update

The Saratoga Springs Transportation Master Plan (TMP), adopted in 2012 and amended in 2013, was updated in 2017 include the following:

- **Travel Demand Modelling (TDM)**
- **Demographic data**
- **Roadway Level of Service (LOS)**
- **Proposed 2040 roadway network**

Introduction

Saratoga Springs is located in northwestern Utah County and is a rapidly growing community. According to the 2010 census, the City has been one of the fastest growing cities in Utah by percent growth over the past decade. This rapid growth is expected to continue into the future. With rapid growth comes increased traffic and the potential that the roadway network in the City will fail to meet the needs of the growing population. The purpose of this document is to provide a transportation plan that will meet the needs of the residents of Saratoga Springs through the year 2040.

Existing Conditions

The City has an estimated population of approximately 26,700 residents continues to be one of the fastest growing cities in Utah. Despite this rapid growth, there remain vast amounts of land that is undeveloped.

The roadways in the City have been classified as Principal Arterials, Major Arterials, Minor Arterials, Collector Streets, Local Collector Streets, and Local roads. Each of these classifications serves a specific purpose in the roadway network and each is important to a complete system. The roadway network in Saratoga Springs is operating at acceptable levels under the existing conditions with all roadways and traffic signals performing at Level of Service (LOS) D or better as shown in **Section 3.0**.

Alternative modes of transportation are important to the City but are currently limited. There is a trails network in the City which provides pedestrian and bicycle facilities but has areas where the trails are not continuous. The transit system consists of one bus route from Eagle Mountain, through Saratoga Springs, to the Lehi FrontRunner station.

DRAFT

Future Conditions

Saratoga Springs is expected to grow to a population of approximately 79,000 by the year 2040. This growth will put strain on the existing roadway network and if no improvements are made many of the roads in the City will reach LOS F. A recommended roadway network has been developed which will meet the travel demands of the future population and allow the roadways to perform at LOS D or better. This roadway network is compatible with the regional transportation planning efforts of Mountainland Association of Governments (MAG) discussed in **Section 4.0**. Roadway cross-sections are presented that will meet the needs of each of the roadway functional classification providing appropriate shoulder and lane widths as well as safe and attractive side treatments.

As part of the transportation network, the trails system proposed will provide greater access to the community via bicycle and pedestrian modes of transportation. Disconnected trails will need to be connected and more trails offered to provide for better service to non-motorized traffic. Each of the road cross-sections along trails routes provides bicycle lanes for commuter and recreational bicyclists.

A new transit network, which incorporates the long range planning of MAG, will include bus routes internal to the City, more express routes, Bus Rapid Transit (BRT), light rail, and as part of the MAG "Vision", commuter rail.

Alternatives Evaluation and Recommendations

In order to provide a comprehensive roadway network to accommodate future growth, the roadway classifications in the City had to be expanded. In addition to the existing functional classifications, two new roadway types were added, Freeway and Parkway. These two classifications will assist in moving traffic efficiently through the City relieving the pressure on the arterial and collector streets.

Access management is an important part of transportation planning as it aids in allowing each roadway classification in performing its proper function. Each roadway must find a balance between providing good mobility with reasonable access to adjacent land uses. The higher the roadway classification (Freeway being the highest), the less access and greater mobility. Local streets provide the best access and the least mobility.

Safety should be the number one priority when designing and constructing roads. Wherever possible offset intersections should be avoided and driveways should be constructed that avoid the need for drivers to back out into traffic. Intersections improvements should be considered where warranted. The Manual on Uniform Traffic Control Devices (MUTCD) provides warrants for both traffic signals and stop signs. Each intersection considered for improvement should be studied using these warrants before improvements are made. In some cases it may be advantageous to consider roundabouts as an alternative to stop signs or traffic signals, this is discussed in detail in **Section 4.4**. Each intersection should be considered and studied individually.

Traffic calming is a way to improve safety and livability on the local street network. Where applicable, traffic calming may be considered in response to resident requests (see **Section 4.5**).

DRAFT

Corridor preservation techniques, discussed in **Section 4.6**, should be employed to ensure that future development does not hinder the construction of a good transportation network. Some methods that may be employed to preserve right-of-way for future roads include developer incentives and agreements, exactions, fee simple acquisitions, transfer of development rights and density transfers, land use controls, and purchase of options and easements.

As the City grows and developments are planned it is important that the impacts of these developments be assessed and managed. The mechanism for ensuring such action is the Traffic Impact Study (TIS). A TIS should be required on most developments in the City prior to issuance of a building permit. A TIS will allow the City to determine site specific impacts including internal circulation, access issues, and adjacent roadway and intersection impacts. Traffic Impact Studies are discussed in detail in **Section 4.7**.

Special Considerations

Several of the proposed roadways in the City deserve special consideration and are discussed in **Section 4.10**. These include Mountain View Corridor Freeway, Foothill Boulevard, Hidden Valley Highway and SR-73. Each of these roadways is unique and poses a specific set of challenges for design and construction. The Mountain View Corridor Freeway and Hidden Valley Highway are proposed on the MAG long range transportation plan and should be the first of these major roads constructed. Foothill Boulevard is a southern extension of the MAG project that will serve the residents on the south end of the City with an alternate corridor to Redwood Road for north-south traffic. SR-73 is proposed a six-lane freeway facility to allow better east-west mobility. Each of these projects will require extensive coordination with UDOT and other agencies.

Potential Funding Sources

In order to keep up with the increasing transportation demand in the City, it is essential that Saratoga Springs explore and pursue multiple sources of transportation funding. The potential sources of funding available are federal funding in the form of the UDOT administered Statewide Transportation Improvement Program, state funding from fuel taxes, registration fees, driver's license fees etc., local funding from general fund revenues, and impact fees associated with development. See **Section 5.0** for more details.

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1.0 Introduction

1.1 2017 Update

The Saratoga Springs Transportation Master Plan (TMP), adopted in 2012 and amended in 2013 and was updated in 2017. This TMP update is not intended as a full TMP update. The following items within the TMP were updated:

- **Travel Demand Modelling (TDM)**
- **Demographic data**
- **Roadway Level of Service (LOS)**
- **Proposed 2040 roadway network**

The purpose of this update is to align the TMP with the regional network plans found in the Mountainland Association of Governments (MAG) TransPlan40.

1.2 Background Information

The City of Saratoga Springs is a fast growing community located on the northwest shore of Utah Lake in the center of Utah's Wasatch Front Metropolitan Area (see **Figure 1-1**). The City was incorporated in December of 1997. From its very beginning, the City experienced rapid growth and continues to be one of the fastest growing communities in the state. According to the US census bureau, Saratoga Springs had grown in population from 1,003 in 2000 to 17,781 in 2010. This represents an average annual growth rate of 167 percent for the 2000 to 2010 decade. When compared to Utah County, which has an average annual growth rate of 4 percent over the same time period, it is clear that Saratoga Springs is one of the fastest growing cities in Utah County. The current population is slightly below 27,000.

The last update to The Saratoga Springs General Plan, including the Transportation Element, was in 2012. This update (as well as minor adjustments in 2013), included to enable development of the roadway portion of the Capital Facilities Plan (CFP) by providing a plan to provide capacity to accommodate the expected growth in the City's transportation system. This TMP acts as an update to incorporate the most recent population projections as well as any changes to the Capital Facilities Plan.

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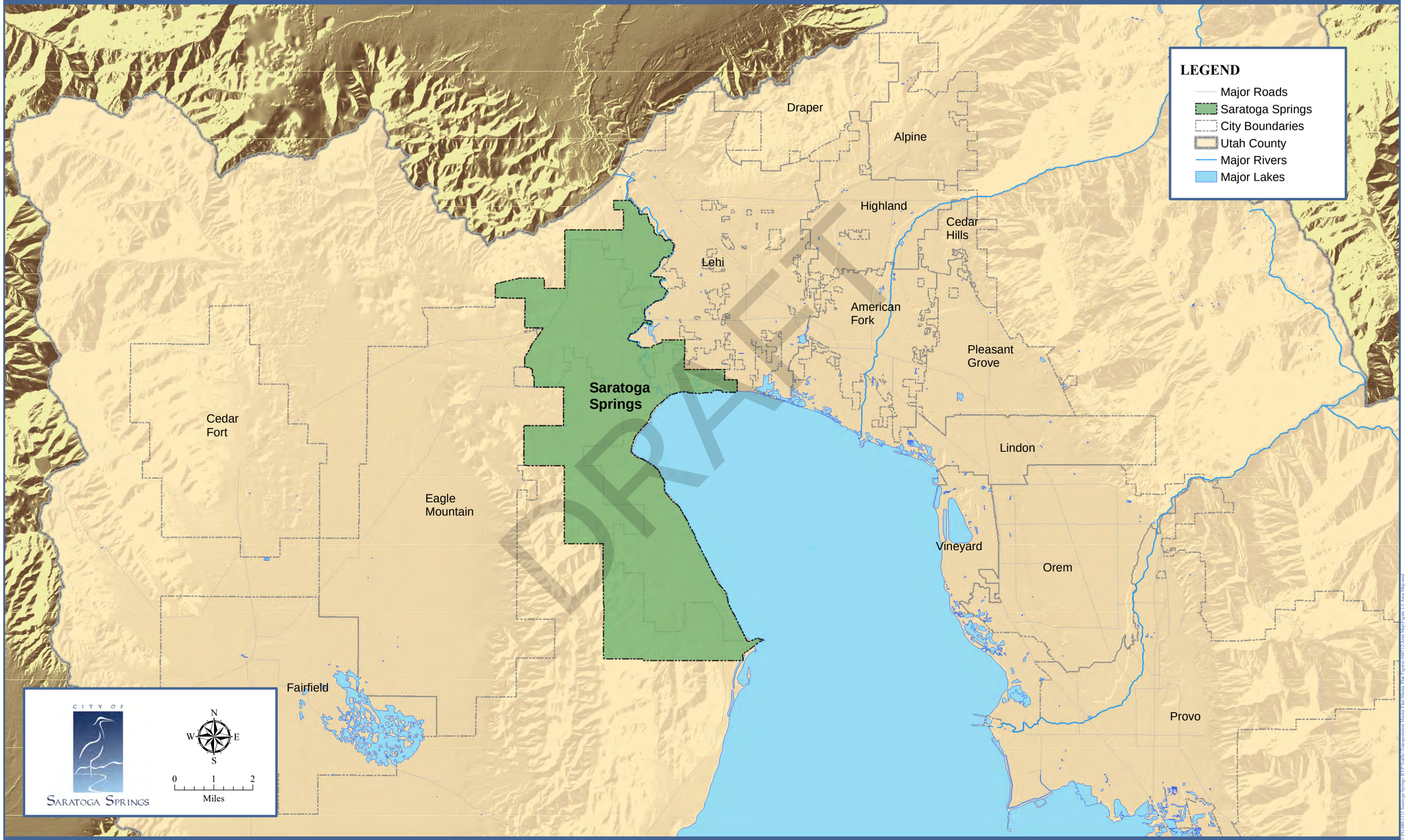
Figure 1-1 Area Map



12 July 2012

2.0 Existing Conditions

A thorough documentation of the City's existing conditions was performed in order to evaluate the City's transportation system and update the Transportation Element of the City's General Plan (TMP) to address the City's current and future needs. The data collected for this TMP update includes:

- **Key roadway traffic volumes**
- **Socioeconomic conditions**
- **Land use and zoning**
- **Signal locations and timings**
- **Roadway classifications/widths/cross sections**
- **Public transit routes**
- **Bicycle/pedestrian trails**

This data forms the basis for analyzing the existing transportation system as well as providing the foundation to project future traffic conditions.

2.1 Existing Socioeconomic Conditions

Socioeconomic data used in the transportation analysis was obtained from the City and Mountainland Association of Governments (MAG). The MAG travel demand model was modified to more accurately estimate the travel demand in the City. The MAG travel demand model consists of various Traffic Analysis Zones (TAZ). Each TAZ contains information on the number of households, employment opportunities, and average income levels within the TAZ. This data is used to generate trips originating in each TAZ and assigned to the roadway network where they will be attracted to a destination within another TAZ. The MAG travel demand model predicts regional travel patterns; however, the TAZ structure must be modified to more accurately reflect traffic on the local city level. The TAZ structure within the Saratoga Springs area was modified by splitting the existing large TAZ into smaller, more uniform TAZ and verifying the accuracy of the socioeconomic data contained within each TAZ.

The City's current population is estimated at around 26,700 residents[1]. The 2000 to 2010 decade saw considerable growth in Saratoga with an increase in residential housing units from 301 to 4,685 (1,456 percent). The City is issuing a number of permits for residential dwelling units monthly and is the single highest growth city by percentage of new housing units in Utah (see **Table 2-1**). **Figure 2-1** includes the most recent active development map as of the adoption of the TPM. As a region, the northern Utah County area has experienced rapid development and growth in recent years and this trend is projected to continue into the foreseeable future. As such, **Figure 2-1** is frequently updated. Visit the City's Website

[1] Based on Utah Governor's Office of Management & Budget (GOMB)

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at www.saratogaspringscity.com or contact the Planning and Zoning department directly for the most updated version.

Table 2-1 Top Ten Utah Cities by 10 Year Housing Unit Growth Rate Percentage

	Housing Unit Count		Comparison	
City Name	***2010***	***2000***	***10 Year Chg.***	***10 Yr. % Chg.***
Saratoga Springs	**4,685**	**301**	**4,384**	**1,456**
Herriman	6,022	459	5,563	1,212
Eagle Mountain	5,546	598	4,948	827
Cedar Hills	2,441	721	1,720	239
West Haven	3,324	1,220	2,104	172
Syracuse	6,534	2,601	3,933	151
Nibley	1,451	580	871	150
Lehi	13,064	5,280	7,784	147
Spanish Valley CDP	190	78	112	144
Washington	7,546	3,199	4,347	136

Source: 2010 State of Utah Official Census

2.2 Existing Land Use

Traffic patterns and demand are directly related to land use and development density. A small percent of the land area within the City has been developed or is under development. There are still several large parcels that remain, as well as numerous smaller tracts of land that will one day be developed. Several of the major owners of the undeveloped land in the annexation boundary of the City are:

- **Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints**
- **Waldo Co.**
- **Collins Brothers Oil Co.**
- **Ireco Incorporated**
- **DCP Saratoga LLC**
- **School and Institutional Trust Lands Administration (SITLA)**

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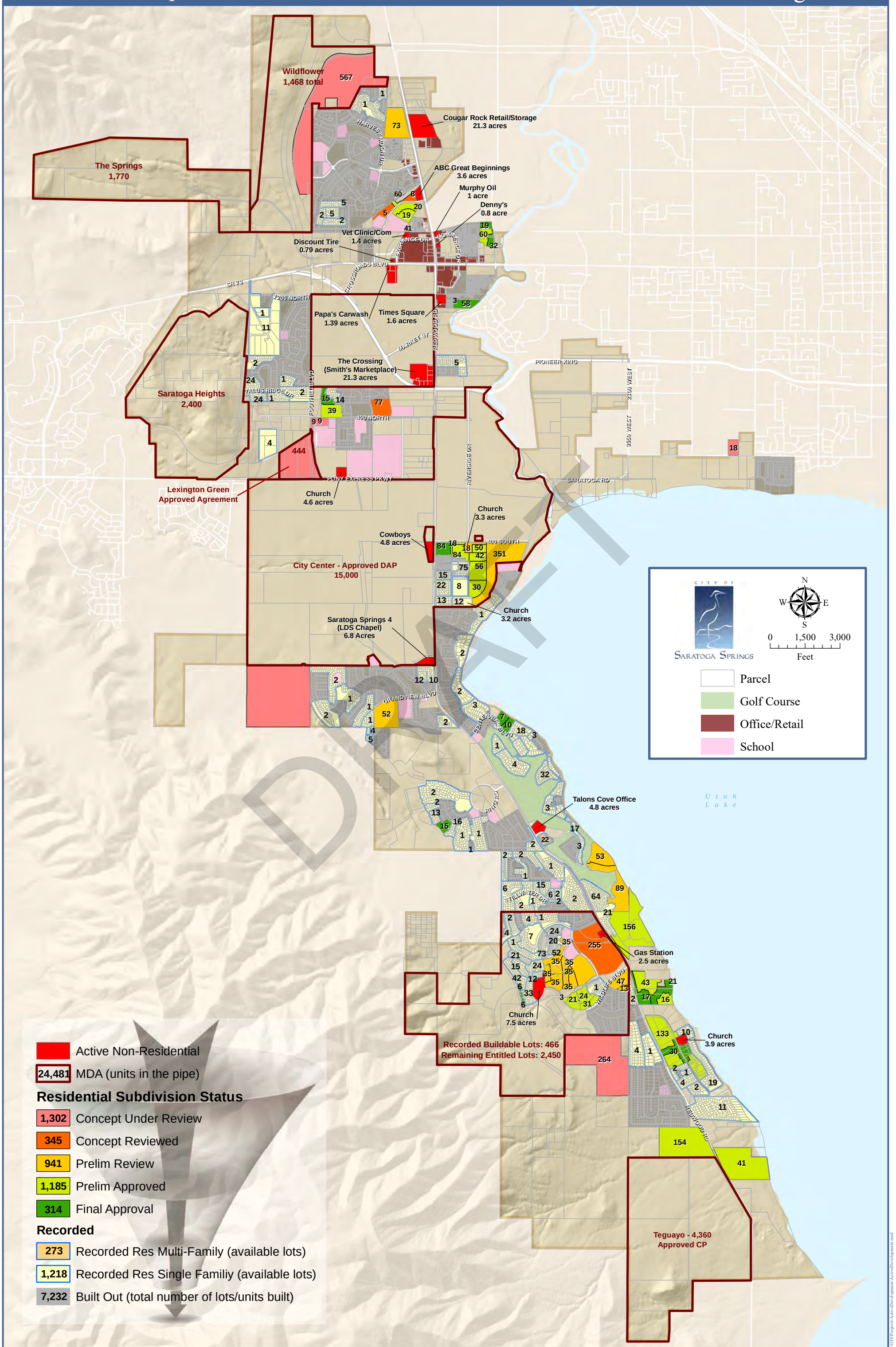
Active Development

Figure 2-1



2.3 Existing Roadway Functional Classification

The roadways in Saratoga Springs have been classified as Principal Arterials, Major Arterials, Minor Arterials, Collector, Local Collector and Local streets. The existing roadway network consists of several major regional Utah Department of Transportation (UDOT) roadways including Cedar Fort Road (SR-73) running East-West connecting to Pioneer Crossing (SR-165), which connects to I-15 at American Fork Main Street, and SR-68 (Redwood Road) running North-South connecting the City with Salt Lake County on the North. In addition to the UDOT roads, Saratoga Springs owns and maintains a number of local and regional collector streets such as Pony Express Parkway (between Redwood Road and Eagle Mountain), 800 West, and 400 North. The existing roadway network including functional type is shown in **Figure 2-2**.

2.4 Existing Traffic Volumes and Level of Service

Adequacy of an existing street system can be quantified by assigning Levels of Service (LOS) to major roadways and intersections. As defined in the *Highway Capacity Manual (HCM),* a document published by the Transportation Research Board (TRB), LOS serves as the traditional form of measurement of a roadway's functionality. The TRB identifies LOS by reviewing elements such as the number of lanes assigned to a roadway, the amount of traffic using the roadway, and the amount of delay per vehicle traveling on the roadway and at the intersections. Levels of service range from A (free flow) to F (complete congestion).

2.4.1 Roadway Level of Service

Roadway LOS is used as a planning tool to quantitatively represent the ability of a particular roadway to accommodate the travel demand. **Table 2-2** Through **Table 2-4** were used as a guide for quantifying LOS and subsequently the conditions of each of the major roadways in the City and are based on HCM principles and regional experience. LOS D is approximately 80 percent of a roadway's capacity and is a common goal for urban streets during peak hours. After discussions with city staff it was determined that adopting the industry standard of LOS D for urbanized areas was acceptable for future planning. Attaining LOS C would be potentially cost prohibitive and may present societal impacts such as additional lanes and wider street cross-sections. LOS D suggests that for most times of the day, the roadways will be operating at well below capacity. The peak times of day will likely experience moderate congestion characterized by a higher vehicle density and slower than free flow speeds. A four lane freeway facility can accommodate 70,000 vehicles per day at LOS D, adding two additional lanes will increase this threshold by 40,000 vehicles to 110,000 vehicles per day. Arterial streets can handle significantly less traffic at LOS D, a seven lane arterial (6 travel lanes and one center turn lane) can accommodate approximately 50 percent of the traffic of a freeway of similar lane configuration (55,000 versus 110,000). Similarly, much capacity is lost when reducing the number of arterial lanes by one in each direction, which will result in a 17,700 vehicle per day reduction in LOS D capacity. Collector streets are designed at lower speeds than arterials and are not as strictly access controlled. Again this results in a loss of capacity when compared to arterial streets. A 3 lane collector street will be able to move 1,700 less vehicles per day than a 3 lane arterial street. Removing the center turn lane on a collector will result in a loss of capacity of 1,300 vehicles per day.

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Table 2-2 Freeway LOS Capacity Criteria in Vehicles per Day

Lanes	LOS C	LOS D	LOS E
4	60,000	70,000	80,000
6	95,000	110,000	140,000

Table 2-3 Arterial LOS Capacity Criteria in Vehicles per Day

Lanes	LOS C	LOS D	LOS E
3	12,400	15,100	17,700
5	28,500	32,800	40,300
7	43,000	50,500	63,400

Table 2-4 Collector LOS Capacity Criteria in Vehicles per Day

Lanes	LOS C	LOS D	LOS E
2	9,700	12,100	14,500
3	10,800	13,400	16,100

2.4.2 Intersection Level of Service

Whereas roadway LOS considers an overall picture of a roadway to estimate operating conditions, intersection LOS looks at each individual movement at an intersection and provides a much more precise method for quantifying operations. Since intersections tend to be a source of bottlenecks in the transportation network, a detailed look into the delay at each intersection should be performed on a regular basis. The methodology for calculating delay at an intersection is outlined in the *Highway Capacity Manual* and the resulting criteria for assigning LOS to signalized and un-signalized intersections are outlined in **Table 2-5** and **Table 2-6** respectively. As in the case with roadways, LOS D is considered the industry standard for intersections in an urbanized area. LOS D at an intersection corresponds to an average control delay of 35-55 seconds per vehicle for a signalized intersection and 25-35 seconds per vehicle for an un-signalized intersection.

At a signalized intersection, the average vehicle will be stopped for less than 55 seconds. This is considered an acceptable amount of delay to experience during the times of the day when roadways are most congested. As a general rule, traffic signal cycle lengths (the length of time it takes for a traffic signal to cycle through each movement in turn) are kept below 90 seconds. An average delay of less than 55 seconds suggests that in most cases, no vehicles will have to wait more than one cycle before proceeding through an intersection.

Un-signalized intersections are generally stop controlled. Areas where there is a predominate major street may be two-way stop controlled, meaning only the minor street traffic must stop. In cases where traffic volumes are more even or where sight distances may be limited, four-way stop controlled intersections are common. LOS for an un-signalized intersection is assigned based on the average control at the worst approach (always a stopped approach) of the intersection. An un-signalized intersection

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operating at LOS D means that the average vehicle waiting at one of the stop controlled approaches will wait no longer than 35 seconds before proceeding through the intersection. This delay may be caused by large volumes of traffic on the major street resulting in fewer gaps in traffic for a vehicle to turn into, or from queued vehicles waiting at the stop sign.

Table 2-5 Signalized Intersection LOS Criteria

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

Note: LOS for signalized intersections is the average of all approaches

Table 2-6 Un-signalized Intersection LOS Criteria

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Note: LOS for an un-signalized intersection is for the worst approach only

Each of the eight traffic signals in the City was analyzed. These signals are all on UDOT owned roadways with the exception of the signal at Commerce Drive and SR-73. Ownership of this signal was recently transferred from UDOT to the City. Once the current warranty period expires, the City will be responsible for the maintenance of this signal (the jurisdictional transfer agreement is shown in the appendix). The existing signal locations are shown in **Figure 2-2**.

2.4.3 Existing Operating Conditions

As part of this TMP, 2016 traffic counts were collected from the Utah Department of Transportation (UDOT) which included average annual daily traffic (AADT) volumes defined in *Traffic on Utah Highways,* and manual traffic counts were also performed on many of the City owned roadways within Saratoga Springs in 2016. **Figure 2-3** illustrates Saratoga Springs' 2010-2012 traffic volumes on selected major streets and their corresponding LOS. Based on the analysis of these traffic count data, there are currently

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no major concerns with the Saratoga Springs roadway network or intersections because they are all operating at LOS D or better.

2.5 Alternative Transportation Modes

Alternative transportation modes to passenger vehicles are an important part of the overall transportation system. A complete transit system may include bus, bus rapid transit (BRT), light rail, commuter rail, and van share facilities. Non-Motorized traffic includes pedestrians, bicyclists, hikers, horse-back riders, and joggers/walkers. These modes of transport should be accommodated wherever feasible in a vibrant and sustainable transportation system.

2.5.1 Non-Motorized Traffic

Non-motorized traffic is also very important and Saratoga Springs is committed to providing a trails network for bicycle and pedestrian traffic for both recreational and other trips. Saratoga Springs is a recreational hotspot on the west side of Utah Lake due to its proximity to Utah Lake and many off-road biking and hiking trails in the western mountains.

Trails serve many purposes from recreational uses to commuting to and from work and home. They also serve a diverse group of users including children, bicyclists, walkers/joggers, and equestrian users. In November 2011, Saratoga Springs adopted their current Parks, Recreation, Trails, and Open Space Master Plan. The master plan sought to inventory the City's existing facilities as well as provide recommendations for future parks, trails, recreational programs, etc. Saratoga Springs recognized that trails are a vital portion of any good transportation network; therefore this TMP should be supplemented by the Trails portion of the Parks, Recreation, Trails, and Open Space Master Plan.

2.5.2 Transit

The Utah Transit Authority (UTA) is the provider of public transportation throughout the Wasatch Front. It operates fixed route buses, express buses, BRT lines, ski buses, light rail, and commuter rail. In this capacity, UTA is responsible for the operation of the transit network in Saratoga Springs. It is the responsibility of the City to promote transit operations and planning in order to provide public transportation options to its residents.

Saratoga Springs currently has a very limited transit system. Route 806 runs from Eagle Mountain, through Saratoga Springs, to the Lehi FrontRunner station. Maps for the existing route 806 can be found in the appendix of this report.

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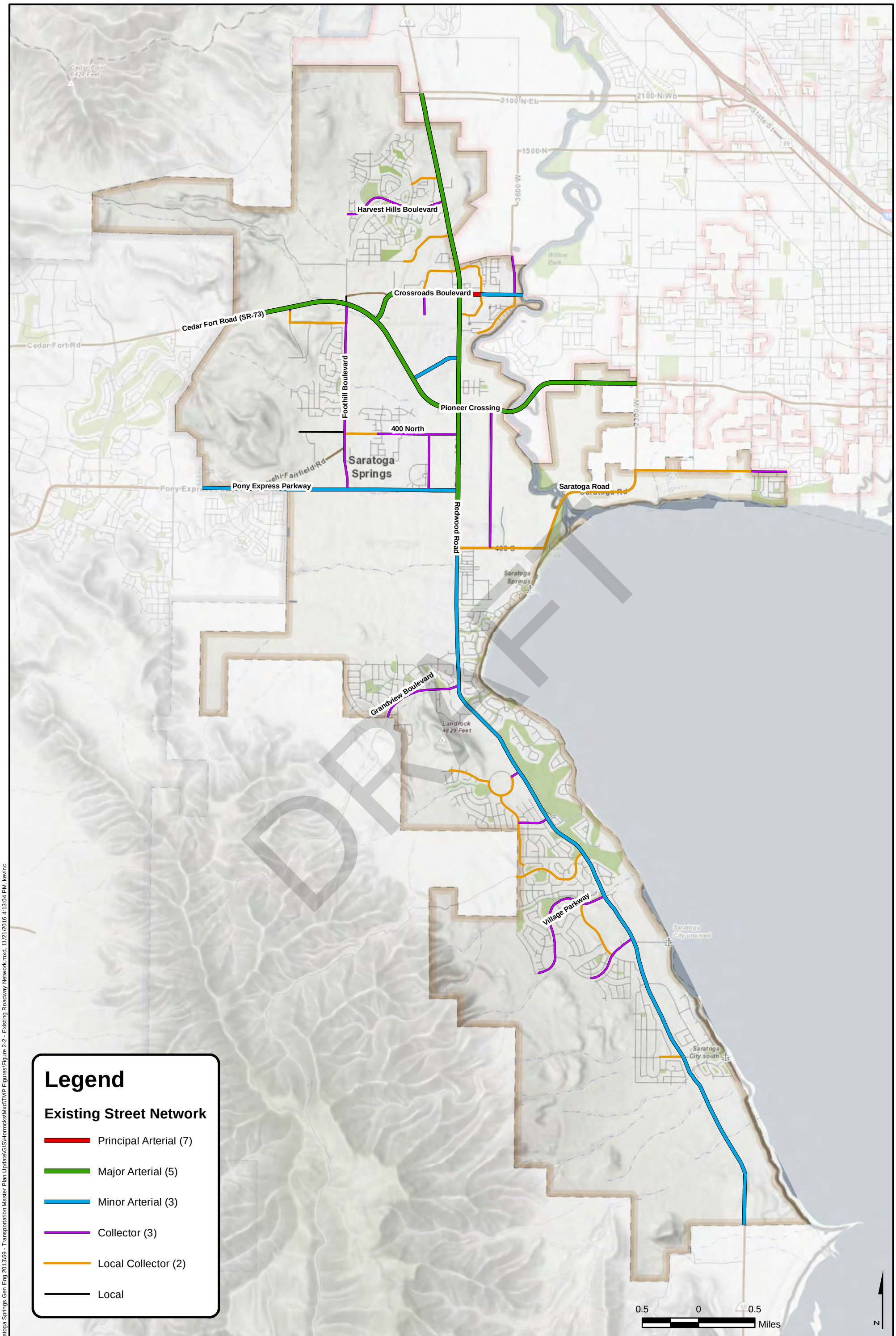

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HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

Existing Roadway Network

Saratoga Springs Transportation Master Plan

DATE 11/21/2016

DRAWN KJC

Figure 2-2

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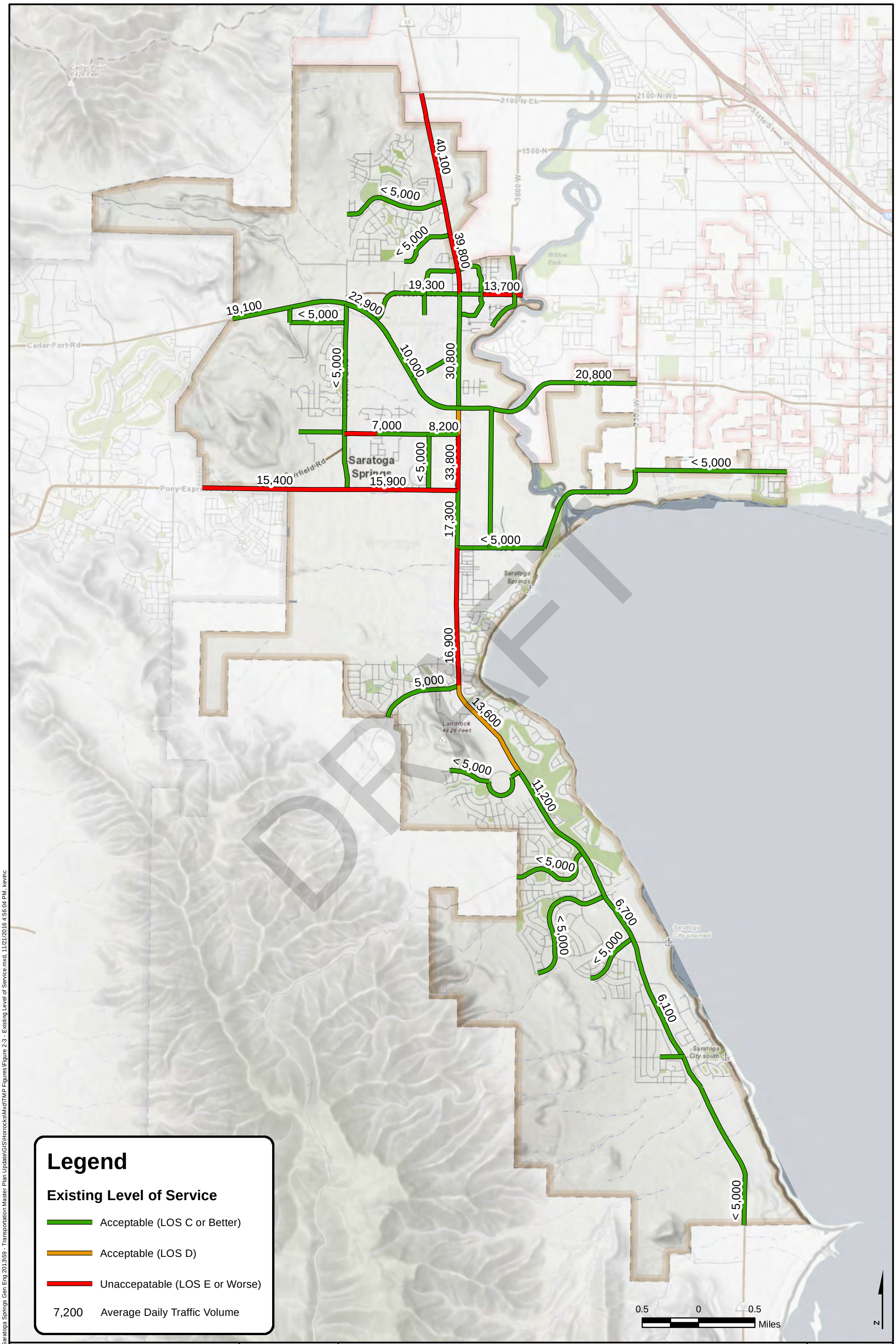

HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

Existing Level of Service

Saratoga Springs Transportation Master Plan

DATE 11/21/2016

DRAWN KJC

Figure 2-3

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3.0 Future Conditions

Future traffic patterns and the resulting operating conditions of a roadway network are directly related to land use planning and socioeconomic conditions. As traffic is not restricted to the Saratoga Springs area, and many of the roadways within the City act as regional east-west roads linking Eagle Mountain and Lehi, the socioeconomic and land use data in the neighboring cities must also be considered when projecting future traffic conditions within the City. Thus, socioeconomic information was obtained from Mountainland Association of Governments (MAG).

3.1 Future Socioeconomic Conditions

The projected socioeconomic data used in this study comes mostly from the MAG travel demand model which is based upon the best available statewide data provided by the Governor's Office of Planning and Budget (GOPB). This data was supplemented and verified using the data provided by Zion's Bank as part of the IFFP and the City planning department in the form of the adopted General Plan Land Use map and Zoning map. The general plan land use map is periodically updated. The most recent version as of adoption is included in **Figure 3-1**. This information is considered the best available for predicting future travel demand; however, land use planning is a dynamic process and the assumptions made in this report should be used as a guide and should not supersede other planning efforts. As **Figure 3-1** is frequently updated, an interactive map can be found on the city's website www.saratogaspringscity.com or the Planning and Zoning Department can be contacted with questions regarding the General Plan.

Based on the current land use, zoning, demographics, and growth patterns, Saratoga Springs is expected to grow to approximately 79,000 residents by the year 2040 (**Table 3-1**). This forecasted growth will place increased pressure on the City's infrastructure including its street system. Saratoga Springs is also committed to increasing its commercial, office, and retail base providing greater opportunity for its residents to live, work, and play in the City. This growth will have considerable impact on traffic volumes. The projected traffic volumes for the planning year 2040 show a corresponding increase with traffic growth of up to 550 percent on many of the City's arterial and collector roads.

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Table 3-1 Saratoga Springs City Projected Population Growth

Year	*Population*	*Population Change*	*Population Change %*
2000	1,003	-	-
2006	10,750	9,747	972%
2010	17,781	7,186	65%
2020	33,514	15,733	88%
2030	58,496	24,982	75%
2040	**78,987**	**20,491**	**35%**

Source: Governor's Office of Planning and Budget & Mountainland Association of Governments

Saratoga Springs aims to plan for and encourage responsible and sustainable growth in the City. Today's transportation system should not only accommodate existing travel demands, but should also have built-in capacity to account for the demand which will be placed on the system in the future. While considering the socioeconomic data used in this report and the anticipated growth in the City, some precautions should be considered. First, the TAZ specific socioeconomic data only approximates the boundary conditions of the City and is based on data provided by MAG and the City's planning documents. Second, actual values may vary somewhat as a result of the large study area of the regional travel demand model which includes the unincorporated areas around Saratoga Springs. Therefore the recommendations in this report represent a planning level analysis and should not be used for construction of any project without review and further analysis.

As the designated Metropolitan Planning Organization (MPO) for the Utah Valley area, MAG, organized in 1972, is largely responsible for regional transportation planning in the three county region of Summit, Wasatch and Utah counties. In this capacity, MAG produces a 30 year Long Range Transportation Plan (LRTP) and a 5 year Transportation Improvement Program (TIP). Both of these products are constrained by reasonably available revenue. As a result, the LRTP does not always include the regional facility improvements which are planned by local communities. This TMP makes great efforts to supplement the regional plans produced by MAG and to provide direction for future regional planning efforts that will include Saratoga Springs City.

3.2 Future Land Use

In its General Plan Land Use Map, the City has sites planned for low, medium, and high density residential, neighborhood and regional parks, schools, commercial and office uses as well as large research and development properties. There are also a number of planned communities in the General Plan Land Use Map which are currently in the planning phase. These areas were identified and reviewed individually in addition to the MAG land use assumptions.

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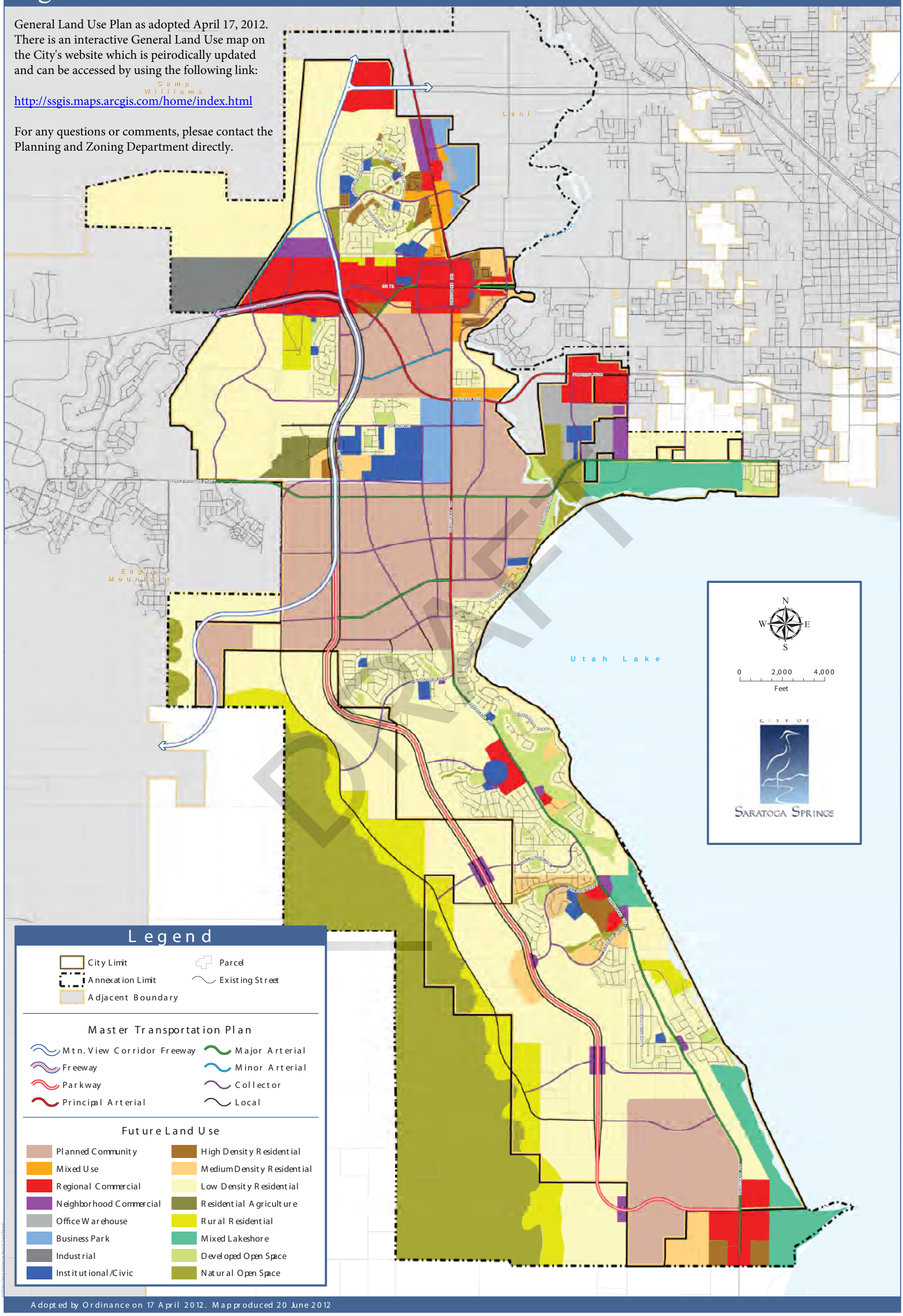
Figure 3-1 General Land Use Plan

General Land Use Plan as adopted April 17, 2012. There is an interactive General Land Use map on the City's website which is peirodically updated and can be accessed by using the following link:

http://ssgis.maps.arcgis.com/home/index.html

For any questions or comments, plesae contact the Planning and Zoning Department directly.



Adopted by Ordinance on 17 April 2012. Map produced 20 June 2012

3.3 Travel Model Development

Projecting future travel demand is a function of projected land use and socioeconomic conditions. The MAG travel demand model was used to predict future traffic patterns and travel demand. The travel demand model was modified to reflect better accuracy through the Saratoga Springs area in by creating smaller TAZ and a more accurate and extensive roadway network. Existing conditions were simulated in the travel demand model and compared to the observed traffic count data to get a reasonable base line for future travel demand. Once this effort was completed, future land uses and socioeconomic data was input into the model to predict the roadway conditions for the design year 2040. 2040 was selected as the design year in order to be consistent with the MAG planning process. TransPlan40 (available at www.mountainland.org) was adopted by the Mountainland MPO Regional Planning Committee in 2015. The transportation plan is a guide to maintain and enhance the regional transportation system for urbanized Utah County.

3.4 Projected Traffic Volumes and Conditions

The resulting outputs of the travel demand model were made up of traffic volumes on all of the classified streets in the City and surrounding area. This data was used to identify the need for future roadway improvements to accommodate the projected growth in the City. The following three scenarios were analyzed in detail to assess the travel demand and resulting network performance in the City:

3.4.1 Existing Conditions

The 2016 existing conditions analysis relied heavily on new traffic count data on the major roadways in the City. This data included daily traffic volumes and peak hour traffic volumes. This analysis provided the opportunity to identify any existing deficiencies in the system and to provide a baseline for future demand. The existing roadway conditions have been previously identified in **Figure 2-3**.

3.4.2 No-Build Conditions

A no-build scenario is intended to show what the roadway network would be like in the future if no action is taken to improve the City roadway network. The travel demand model was again used to predict this condition by applying the future growth and travel demand to the existing roadway network. As shown in **Figure 3-2**, if no improvements are made to Saratoga Springs' transportation infrastructure, projected traffic volumes for the planning year 2040 will significantly lower the LOS of many of the major streets throughout the City. Improvements will need to be made as growth occurs in order to preserve the quality of life for Saratoga Springs' residents and to maintain an acceptable LOS on City streets and intersections. These improvements will also provide a sound street system that will support the City's growing economic base. LOS for signals is very difficult to predict so far out into the future. It is expected that the signals in the City will continue to operate at LOS D or better as traffic patterns change and new roadways are added to the network. It is recommended that the intersections in the City be regularly monitored and signal timings adjusted as needed to maintain acceptable operating conditions.

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3.4.3 Recommended 2040 Roadway Conditions

Areas of future concern in Saratoga Springs' street system were identified using traffic models of existing and projected traffic volumes to evaluate existing and projected level of service conditions. A recommended roadway network was created for the planning year 2040. This network was developed through a series of iterations with input from City staff, planning commission and city council. The final recommended roadway network seeks to balance accommodating demand through the year 2040 with fiscal responsibility while also considering the planning efforts of MAG and the neighboring cities. The culmination of this analysis as well as the efforts of the Planning Commission and City Council is shown as a recommended 2040 roadway network in **Figure 3-3**. It is expected that the roadway network recommended in this document will perform at an acceptable LOS through the planning year 2040. This will help in preserving the quality of life and economic vitality of the City. The specific details of the recommended roadway network are discussed more extensively in **Section 4.0**.

Included in **Figure 3-3** is the Foothill Blvd. extension which will connect to the Mountain View Corridor freeway at Pony Express Parkway and end at Redwood Road at the southern border of the city. Based on traffic projections the freeway will end at Stillwater Drive and become arterial street cross-sections until it connects to Redwood Road. As part of MAG's vision plan, there is a possibility that a causeway could be built across Utah Lake connecting Saratoga Springs to Provo. This causeway would connect at Redwood Road where Foothill Blvd extension is proposed to end. As the need for the causeway is still unknown, all modeling efforts assumed the causeway would NOT be completed within the horizon year 2040. If this project were to be completed within the horizon year 2040, the entire Foothill Blvd cross-section would need to be a continual freeway leading to the causeway to accommodate the additional traffic caused by the causeway. As such, the City will acquire the right-of-way necessary for the freeway section of 200 Feet throughout the corridor.

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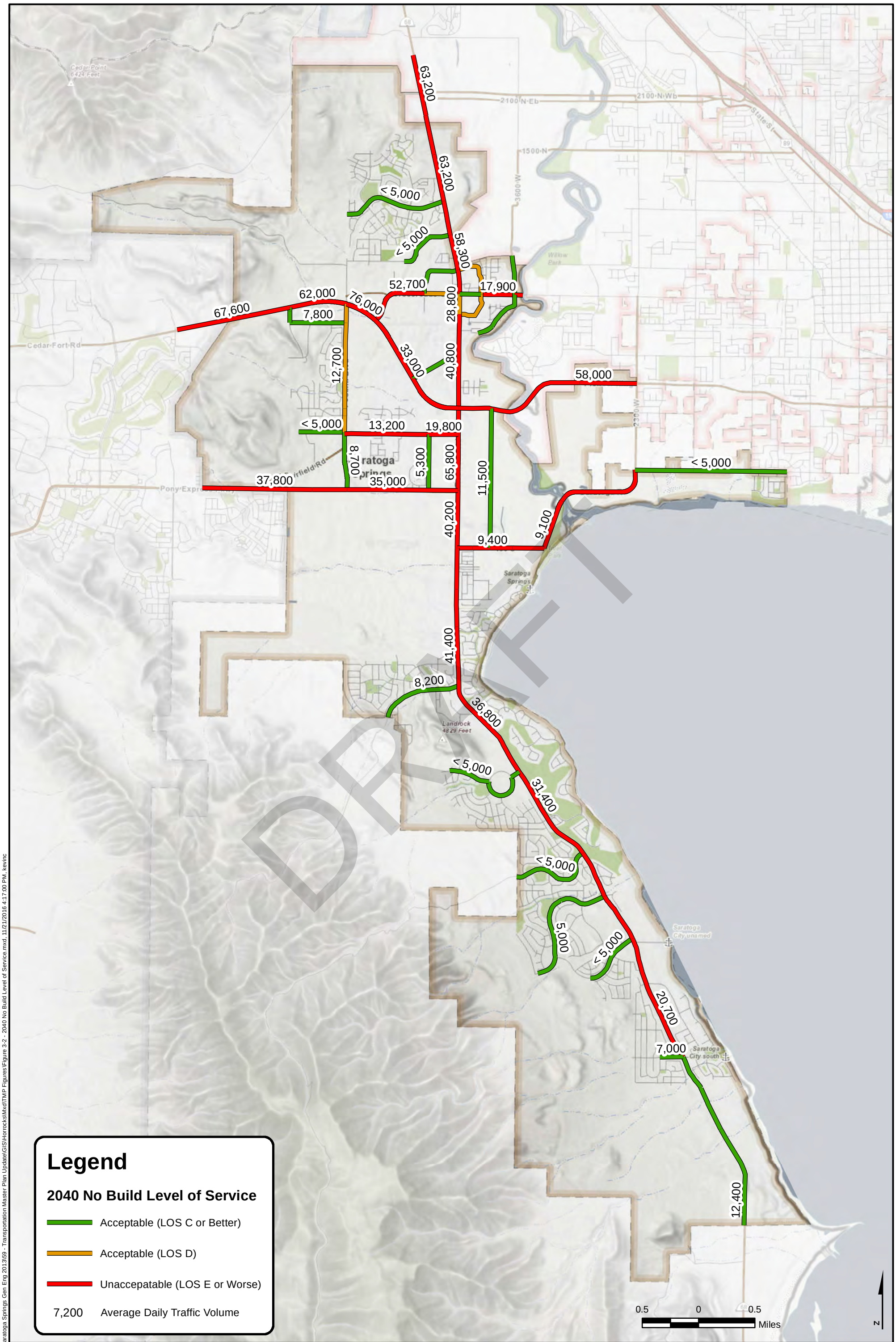


Legend

2040 No Build Level of Service

- Acceptable (LOS C or Better)
- Acceptable (LOS D)
- Unaccepatable (LOS E or Worse)
- 7,200 Average Daily Traffic Volume

HORROCKS ENGINEERS

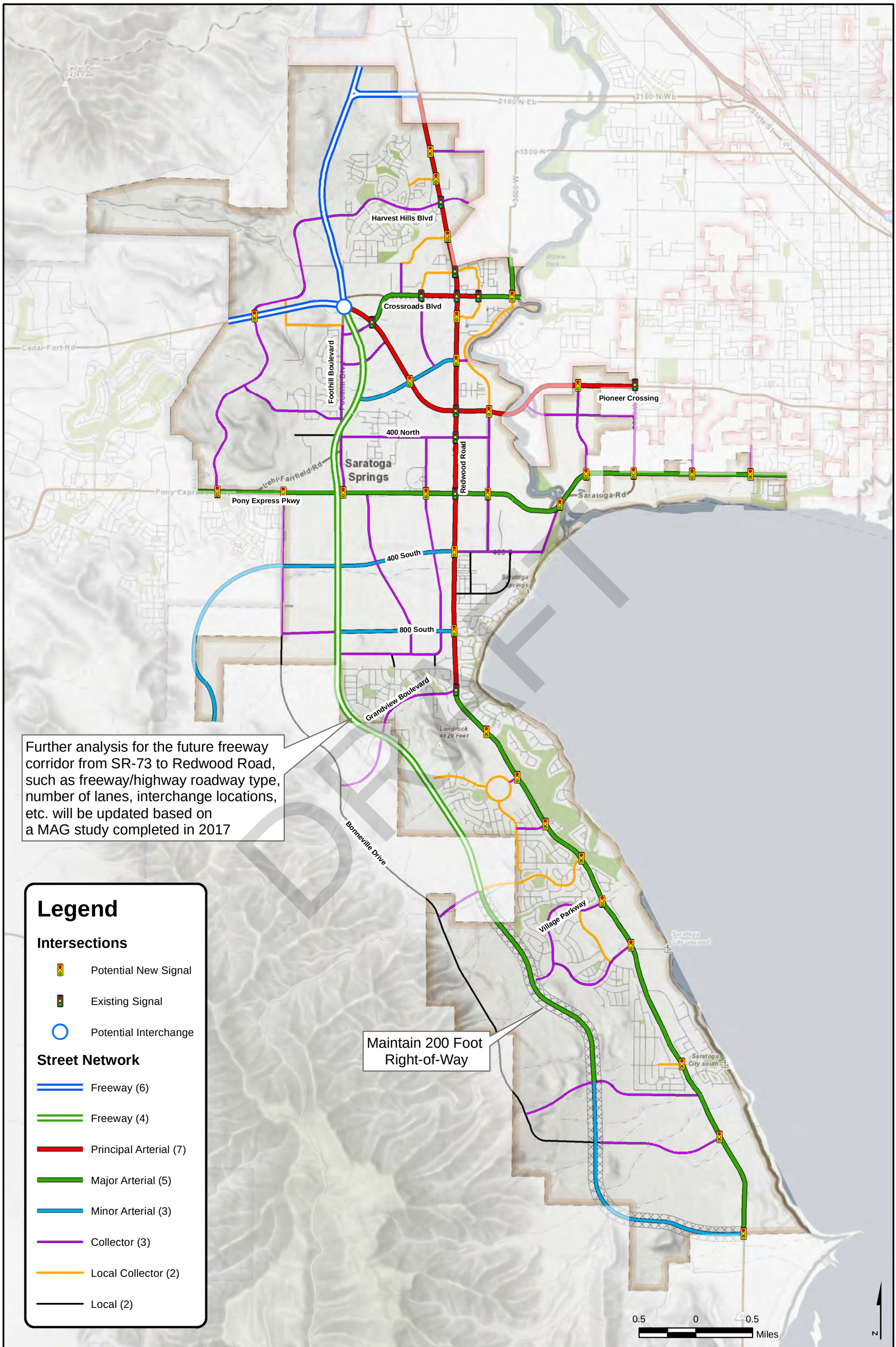
2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

2040 No Build Level of Service

Saratoga Springs Transportation Master Plan

DATE 11/21/2016
DRAWN KJC
Figure 3-2

O:\12013\PG-163-1301 Saratoga Springs Gen Eng 2013\59 - Transportation Master Plan Update\GIS\Horrocks\Mxd\TMP Figures\Figure 3-2 - 2040 No Build Level of Service.mxd, 11/21/2016 4:17:00 PM, kevinc



HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

2040 Proposed Network

Saratoga Springs Transportation Master Plan

DATE 12/20/2016

DRAWN

Figure 3-3

O:\12013\PG-163-1301 Saratoga Springs Gen Eng 2013\59 - Transportation Master Plan Update\GIS\Horrocks\Mxd\TMP Figures\Figure 3-3 - 2040 Proposed Network.mxd, 12/20/2016 9:31:31 PM, kevinc

3.5 Alternative Transportation Modes

Accommodating alternative modes of transportation than the passenger vehicle is a vital consideration when planning a livable and sustainable community. As a vibrant and growing city it is important for Saratoga Springs to continue to plan for improved transit, trails, and pedestrian facilities. These facilities, whilst improving the overall quality of life in the City, will also aid in relieving congestion and increasing the lifespan of the City's roadway network.

3.5.1 Non-Motorized Traffic

Pedestrian safety is an important feature of the TMP. The recommended typical roadway sections include an 8 foot wide side-walk (5 foot on collector and local streets) with park strips varying from 9 to 16 feet. These figures are based on the classification of the roadway and serve to provide a buffer for pedestrians from vehicular traffic creating a more sustainable and walkable community.

The Parks, Recreation, Trails, and Open Space Master Plan should be used as a reference for the transportation planning efforts in terms of trails and pedestrian facilities in the future. The current version of this plan can be found on the city's website www.saratogaspringscity.com.

3.5.2 Transit

Saratoga Springs does not and is not likely to operate and maintain its own transit system. The combined efforts of UTA, MAG, and the City will largely dictate the nature of a future expanded transit system. The City should be actively involved in promoting transit as a viable and attractive alternative transportation mode in the City. These planning and lobbying efforts will assist in procuring the necessary funding and support to develop, implement, and maintain a sustainable transit system.

The existing UTA bus line Route 806, from Eagle Mountain/Saratoga Springs to the Lehi Frontrunner station, is unlikely to continue to meet the growing needs of the City in the future and may be supplemented by an additional express bus specifically between Saratoga Springs and Salt Lake City. Additional bus routes will likely be added by UTA as the city expands and should be restricted to collectors and arterial streets.

Due to the relatively large distances between the residential developments to the north and south and the commercial/retail center at Commerce Drive, a local bus system connecting these two areas may be beneficial as time progresses and population increases. This would allow those who prefer public transit to commute from the residential south to either work or shop in the commercial/retail district. As more commercial/retail zones develop in the City, further local bus routes should be considered linking these areas. A local bus system also allows more flexibility for captive riders (those with no other means of transportation) to live, play, and work/shop at a greater distance increasing their housing and employment options.

Light Rail (TRAX) has been operating in Salt Lake County for more than a decade. There are currently three lines in operation. There are no existing or under construction TRAX lines in Utah County. According to MAG TransPlan40, the first TRAX line in Utah County will be an extension of the planned Draper line and

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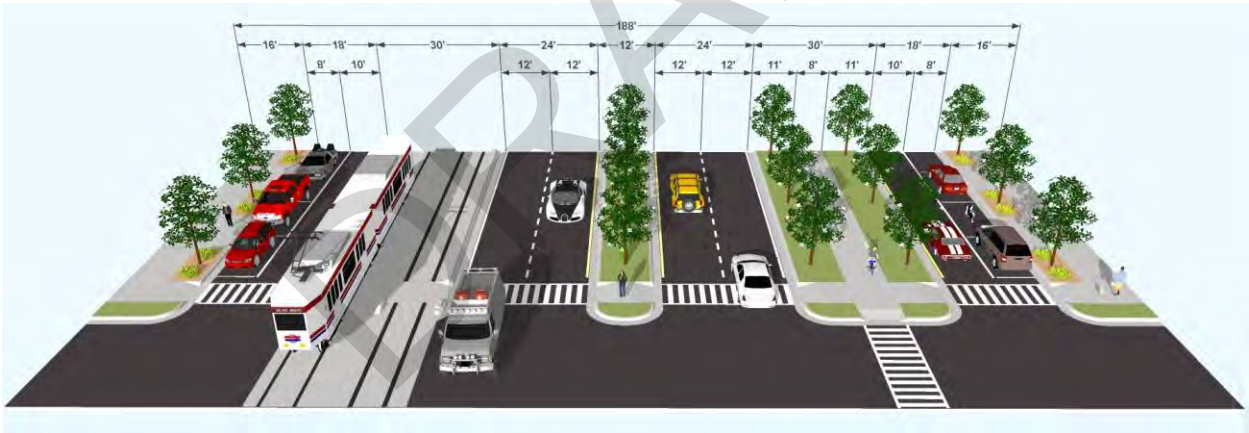
is not anticipated to come online before 2040. Due to the importance of a transit network to Saratoga Springs, and at the request of several major land holders in the City, a TRAX line is being proposed as part of the TMP. This line will connect the Draper line extension to Saratoga Springs. The City is committed to promoting this TRAX line and coordinating with landowners, UTA and MAG to implement this transit improvement. Refer to the MAG TransPlan40 for more information on the anticipated alignment of the TRAX line (see website for interactive map). It is important to note that this is a "vision" project, meaning that the City of Saratoga Springs will continue to work with UTA and MAG to determine the best location and implementation timing for the future TRAX line. A concept design is included as part of the TMP in **Figure 3-4**. This is a concept design for the section of the TRAX line utilizing Pioneer Crossing Extension. The four lane mainline would consist of 12' travel lanes (2 in each direction) separated by a 12' landscaped median. To the left of the travel lanes, (in the case of the Pioneer Crossing extension the south side) is a 30' right-of-way reserved for light rail TRAX trains or commuter rail (FrontRunner). This would be room enough to provide one track in each direction. An 8' trail is provided on the north side of the road (right in the diagram) in another 30' right-of-way. On each side of the road is an 18' frontage road with on street parking what will provide access to adjacent properties. Inclusion of **Figure 3-4** in the TMP does not lock the City into this cross-section, but shows the other entities involved (MAG, UTA) that the City of Saratoga Springs is dedicated and prepared to find the best way to include TRAX into its future plans.

Figure 3-4 Concept Pioneer Crossing Extension Cross-Section



The most recent addition to the Utah statewide transportation system is UTA's FrontRunner commuter rail line. The line connects Utah, Salt Lake, Davis, and Weber counties with stations in Provo, Orem, American Fork, Lehi, Draper, South Jordan, Murray, Salt Lake City, Woods Cross, Farmington, Layton, Clearfield, Roy, and Ogden. Each station has a connection other transit networks such as TRAX and bus networks. FrontRunner is a push/pull locomotive system, which can travel up to 79 mile per hour. Future planned expansions will add service to Brigham City in the north and Payson in the South.

An essential consideration of a good transportation system is the ability to seamlessly transfer from one transportation mode to the next. This could be from car to commuter rail, bike to bus, or foot to light rail. Each of these transfers must be accomplished efficiently in order for a transit system to be attractive to users. One way to accomplish exceptional connectivity is with an intermodal center. Intermodal centers

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are transit hubs where multiple modes of transportation converge and passengers enter using one form of transportation and leave by another. Transfers can occur between as many modes as the physical space can permit. As part of the TRAX line proposal, the City is also planning an intermodal hub close to the Pioneer Crossing Extension that may provide a connection to each of the transportation modes planned in the City.

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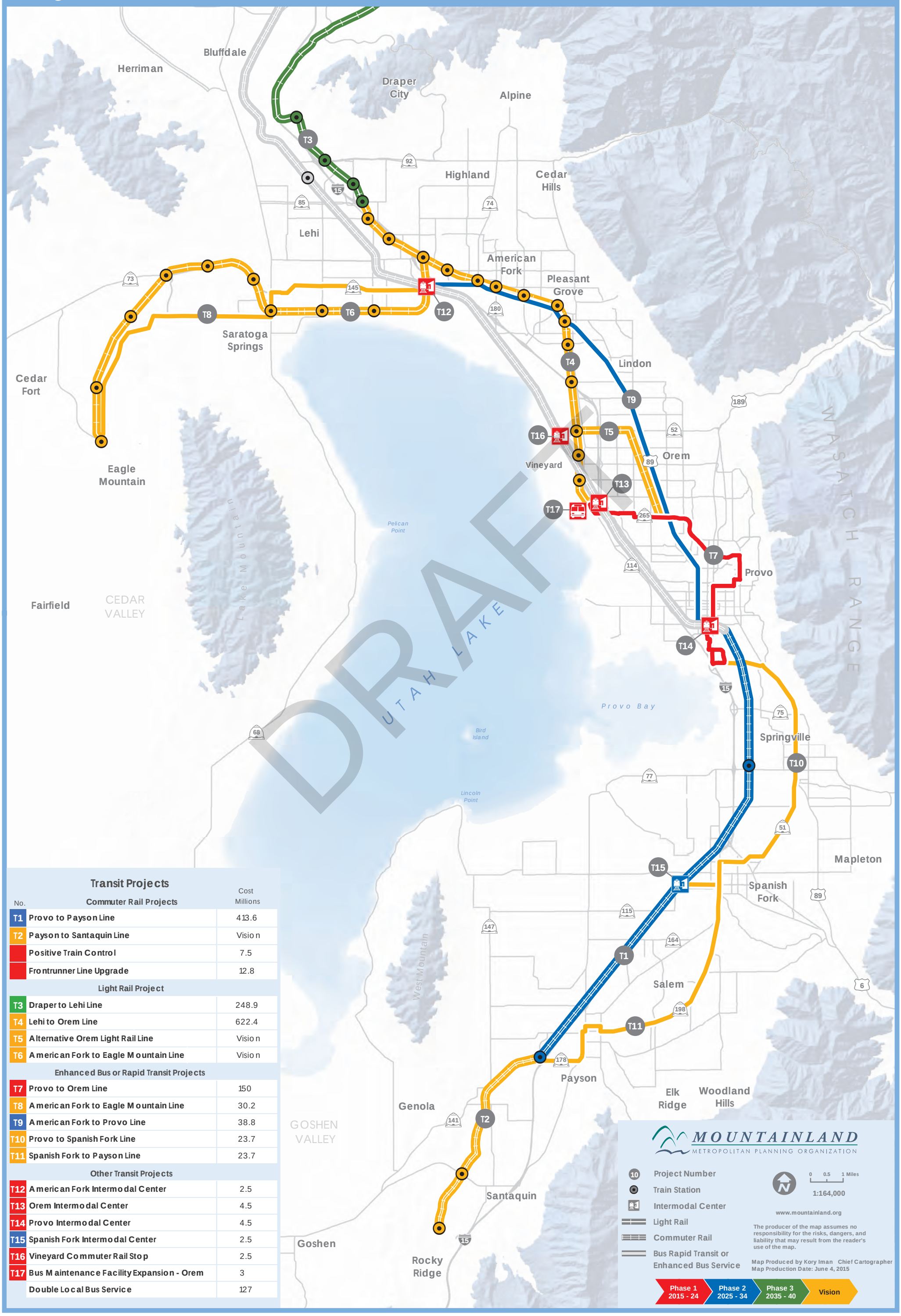
Transit
Figure 3-5

TransPlan40

Regional Transportation Plan
2015-2040 Plan for the Provo/Orem Metropolitan Area



Transit Projects

No.	Commuter Rail Projects	Cost Millions
T1	Provo to Payson Line	413.6
T2	Payson to Santaquin Line	Vision
	Positive Train Control	7.5
	Frontrunner Line Upgrade	12.8
	Light Rail Project	
T3	Draper to Lehi Line	248.9
T4	Lehi to Orem Line	622.4
T5	Alternative Orem Light Rail Line	Vision
T6	American Fork to Eagle Mountain Line	Vision
	Enhanced Bus or Rapid Transit Projects	
T7	Provo to Orem Line	150
T8	American Fork to Eagle Mountain Line	30.2
T9	American Fork to Provo Line	38.8
T10	Provo to Spanish Fork Line	23.7
T11	Spanish Fork to Payson Line	23.7
	Other Transit Projects	
T12	American Fork Intermodal Center	2.5
T13	Orem Intermodal Center	4.5
T14	Provo Intermodal Center	4.5
T15	Spanish Fork Intermodal Center	2.5
T16	Vineyard Commuter Rail Stop	2.5
T17	Bus Maintenance Facility Expansion - Orem	3
	Double Local Bus Service	127

4.0 Alternatives Evaluation and Recommendations

After evaluating the existing and future conditions, several recommendations to meet future travel demand are outlined in this section.

4.1 Roadway Functional Classification

A major reason for transportation planning is to provide adequate transportation solutions for connectivity with the surrounding region while at the same time preserving the quality of life of the residents in the City. The key to maintaining this balance exists in the ability to adequately plan for major corridors that minimize through traffic in neighborhoods, while at the same time coordinating land use and transportation plans that capitalize on the efficient movements of people and goods. To accomplish this objective, this TMP defines a hierarchy of streets known as a Functional Classification of Streets. The following street classifications have been selected by Saratoga Springs for inclusion in the TMP:

- Freeway
- Parkway
- Principal Arterial
- Major Arterial
- Minor Arterial
- Collector
- Local Collector
- Local Road

Each of these roadway classifications has a specific purpose and function. Access and mobility are competing functions. This recognition is fundamental to the design of roadway systems that preserve public investments, contribute to traffic safety, reduce fuel consumption and vehicle emissions, and do not become functionally obsolete. Suitable functional design of the roadway system also preserves the private investment in residential and commercial development.

A typical trip on an urban street system can be described as occurring in identifiable steps. These steps can be sorted into a definite hierarchy with respect to how the competing functions of mobility and access are satisfied. For example, the primary purpose of an arterial street is to move large volumes of traffic at higher speeds and provide access to collector roads and higher density retail and commercial land uses. Some key arterial streets that currently traverse the City of Saratoga Springs include Redwood Road, Pioneer Crossing, and SR-73. At the low end of the hierarchy are local streets that provide good access to abutting properties, but provide limited opportunity for through movement. Collector roads provide a

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transition between arterials and local roadways by providing both access and traffic moving capacity. Examples of existing collector roads within the City include Harvest Hills Blvd or Parkway Blvd. Collector type facilities serve moderate traffic volumes at moderate speeds. At the highest end of the hierarchy are freeway facilities that provide good mobility by limiting and controlling access to the roadway, thereby reducing conflicts that slow the flow of through traffic.

Roadway specialization simply means using each individual street facility to perform the desired mix of functions of access or movement. This is accomplished by classifying highways with respect to the amount of access or mobility they are to provide and then identifying and using the most effective facility to perform that function.

Many of the major streets in Saratoga Springs pass through residential areas with homes fronting the roadways. The typical street section (or street width) has been designed to lessen the impacts of needed roadway widening improvements to these homes. The typical cross-sections and configurations showing total right-of-way width, pavement width, number of travel lanes, and side treatments (such as sidewalk and park strip) are illustrated in **Figure 4-1**.

Impacts to adjacent properties can be limited by applying minimal typical sections to stretches of roadway between intersections. Typically, intersections are choke points in a traffic system. Capacity can be maximized by providing sufficient left and right turn pockets to accommodate at least the average expected peak hour queue as well as lane widths at intersections. Treatments at intersections are discussed further in the section below entitled Intersection Improvements. Pedestrian and bicycle traffic should also be considered in the design of major roadways as discussed below.

The major arterial roadways that service vehicles traveling to and from Eagle Mountain and east Utah County are heavily used by through travelling traffic that do not originate or terminate their trips in Saratoga Springs. These high traffic volumes will continue to strain Saratoga Springs' east-west traffic facilities, particularly as population continues to increase in Lehi and Eagle Mountain.

There are roadway segments along the Foothill Blvd. southern extension where larger than typical ROW is required. Although smaller roadway segments are planned, ROW for future development past 2040 may require 200 feet of ROW and are indicated in **Figure 3-3**.

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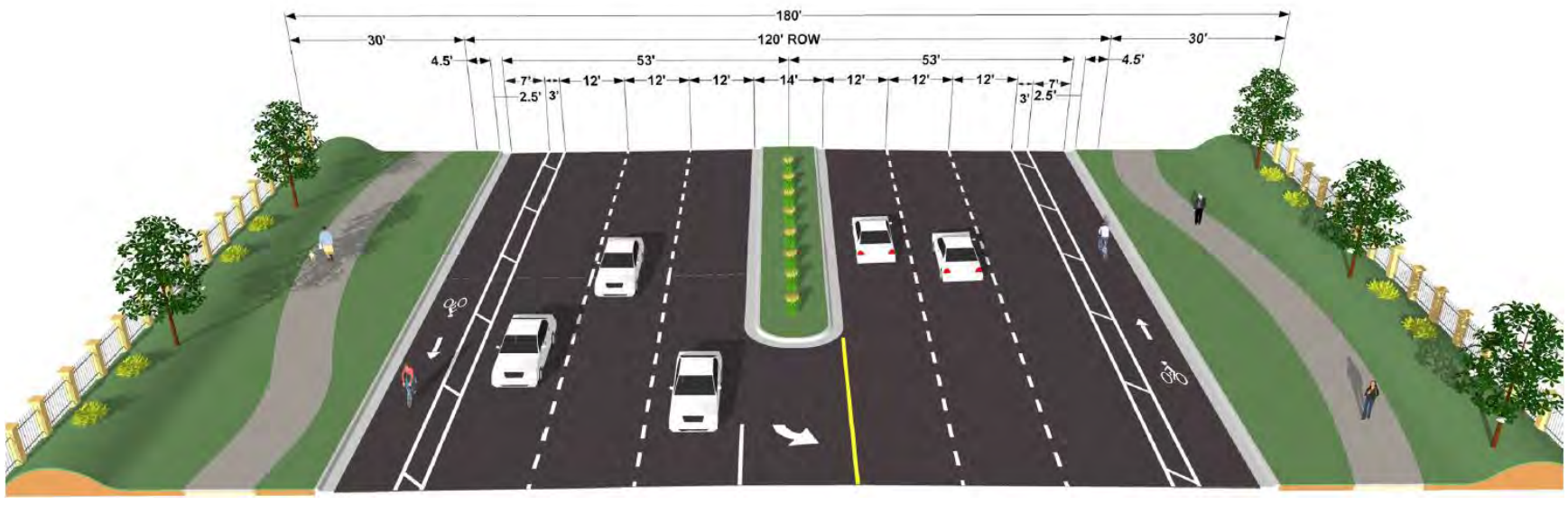
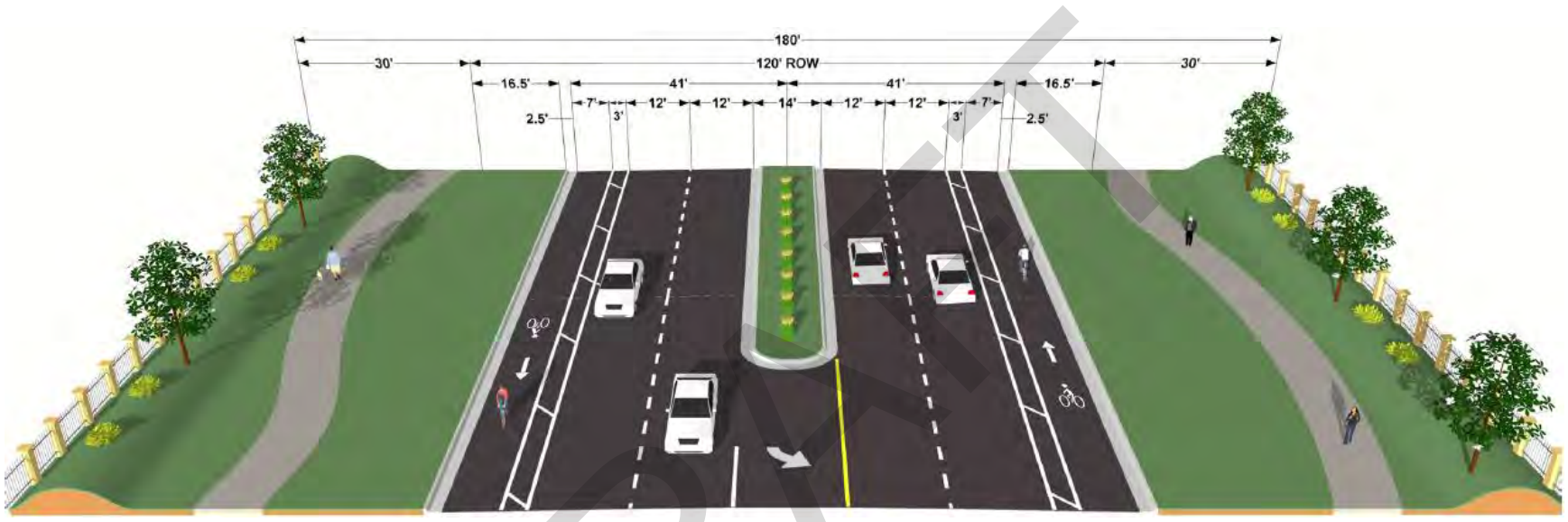
Figure 4-1 Roadway Typical Sections

7-Lane Principal Arterial



5-Lane Major Arterial



3-Lane Minor Arterial

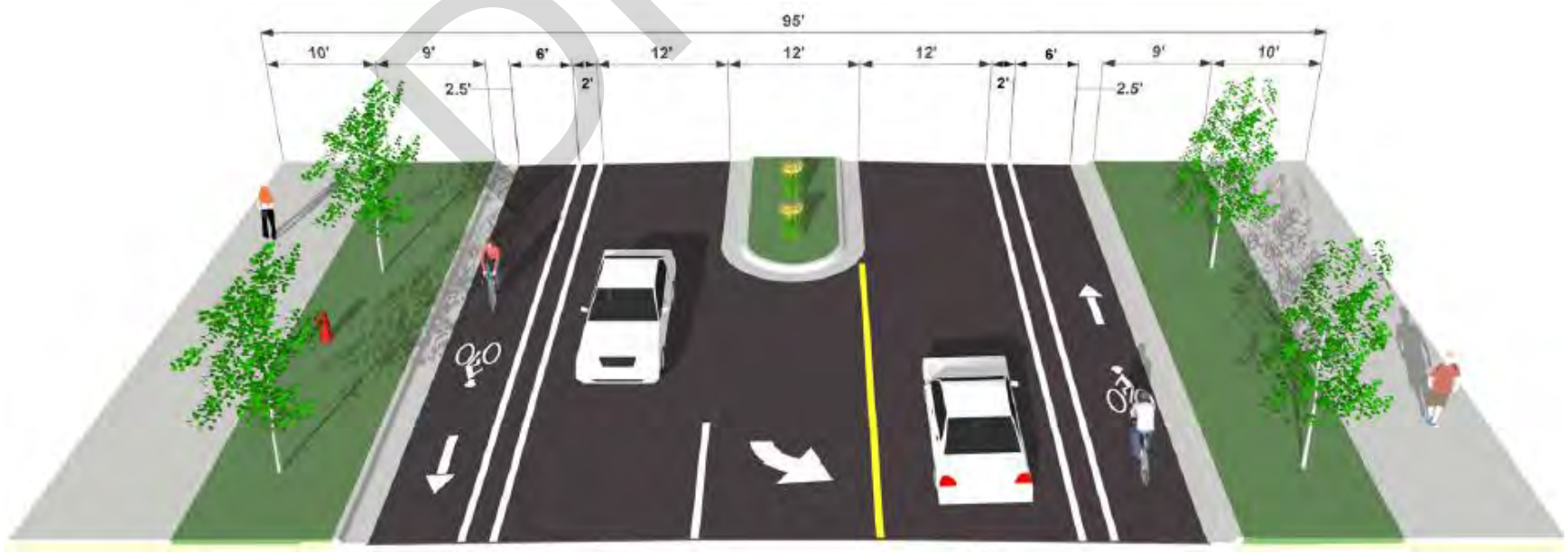


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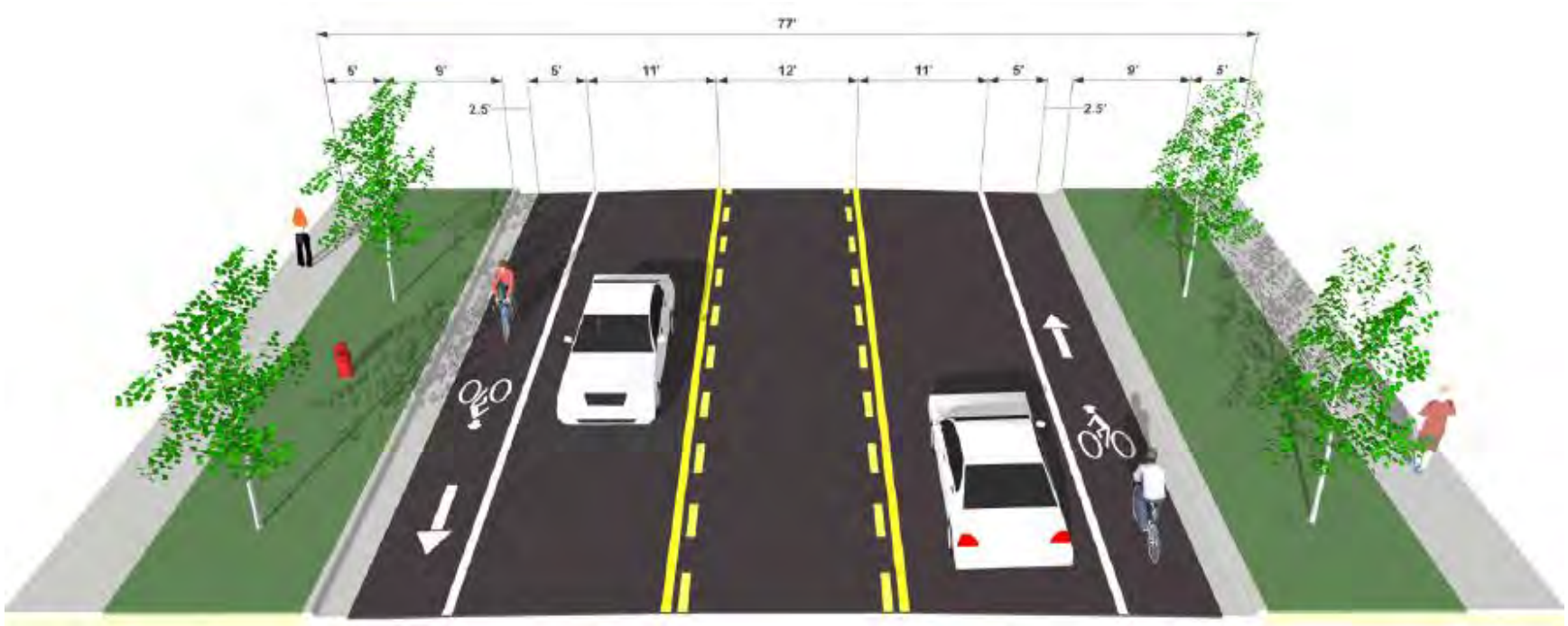
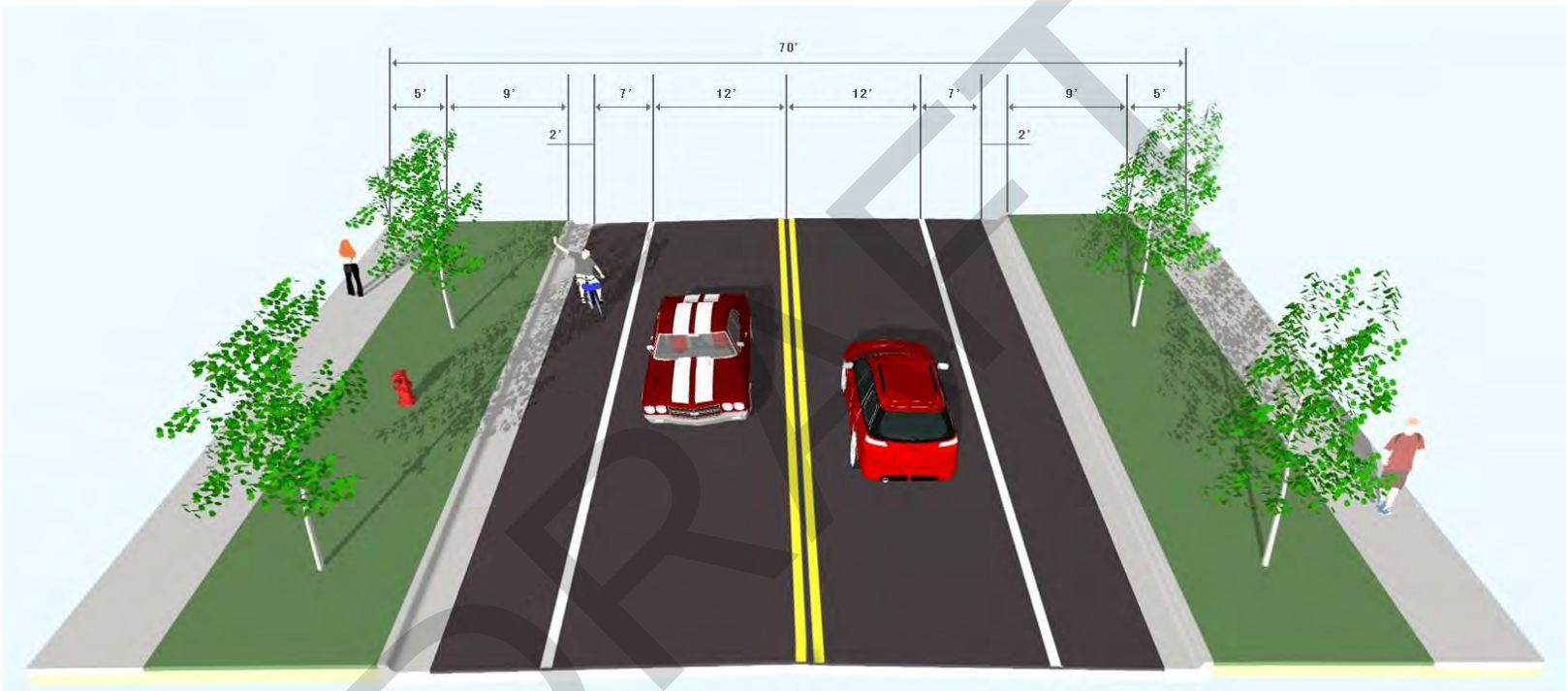
Figure 4-1 Continued

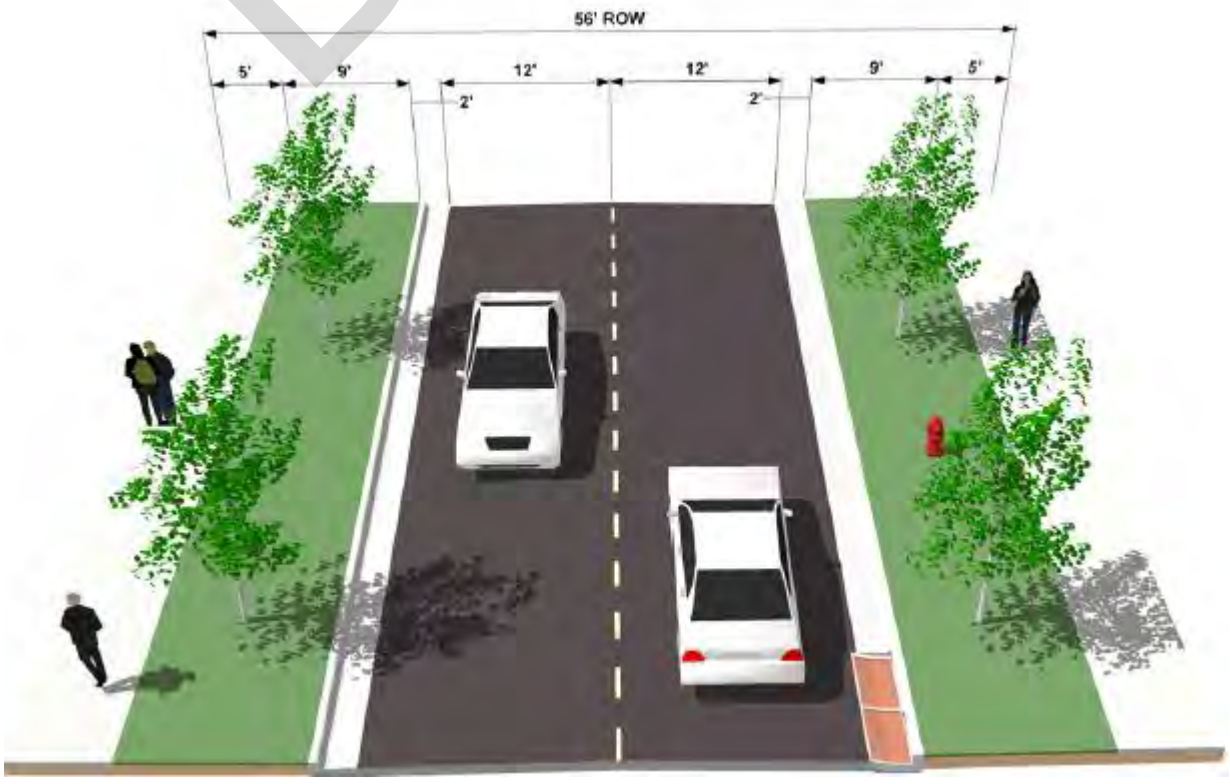
3-Lane Collector



2-Lane Local Collector



Local Street



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4.2 Access Management

Access management is the practice of coordinating the location, number, spacing, and design of access points to minimize site access conflicts and maximize the traffic capacity and safety of a roadway. Uncoordinated growth along major travel corridors often results in strip development and a proliferation of access points. In many of these instances, each individual development along the corridor has its own access driveway. Numerous access points along major travel corridors create unnecessary conflicts between turning and through traffic which causes delays and accidents. Numerous benefits are derived from controlling the location and number of access points to a roadway. Those benefits include:

- Improving overall roadway safety
- Reducing the total number of vehicle trips
- Decreasing interruptions in traffic flow
- Minimizing traffic delays and congestion
- Maintaining roadway capacity
- Extending the useful life of roads
- Avoiding costly highway projects
- Improving air quality
- Encouraging compact development patterns
- Improving access to adjacent land uses
- Enhancing pedestrian and bicycle facilities

All access management standards are included in this TMP as a reference. As guidelines and standards are updated frequently, the access management guidelines and standards used for development and construction are included in the Saratoga Springs Engineering Standards. Please contact the City for more information on how to access the Engineering Standards.

4.2.1 Principles of Access Management

Constantly growing traffic congestion, concerns over traffic safety, and the ever increasing cost of upgrading roads have generated interest in managing the access to not only the highway system, but to surface streets as well. Access management is the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity, and speed. Access management attempts to balance the need to provide good mobility for through traffic with the requirements for reasonable access to adjacent land uses.

Arguably the most important concept in understanding the need for access management is to insure the movement of traffic and access to property is not mutually exclusive. No facility can both move traffic efficiently and provide unlimited access at the same time. **Figure 4-2** shows the relationship between mobility, access, and the functional classification of streets. The extreme examples of this concept are freeways and cul-de-sacs. Freeways move traffic very well with few opportunities for access, while the

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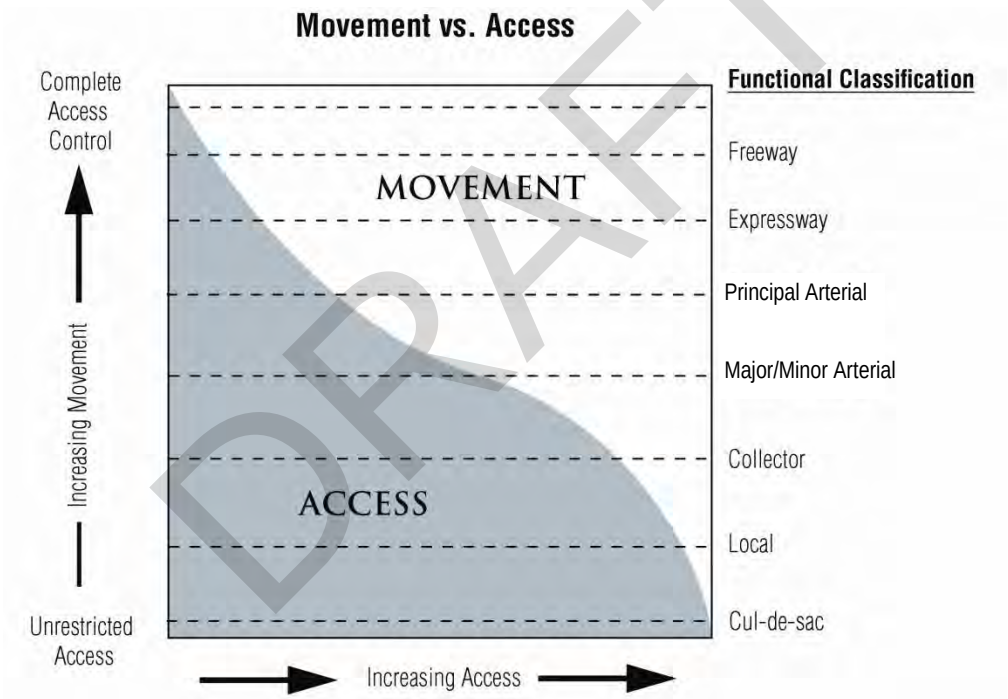
cul-de-sac has unlimited opportunities for access, but doesn't move traffic very well. In many cases, accidents and congestion are the result of streets trying to serve both mobility and access at the same time.

A good access management program will accomplish the following:

- Limit the number of conflict points at driveway locations
- Separate conflict areas
- Reduce the interference of through traffic
- Provide sufficient spacing for at-grade, signalized intersections
- Provide adequate on-site circulation and storage

Figure 4-2 Mobility vs. Access by Functional Classification



Access management attempts to put an end to the seemingly endless cycle of road improvements followed by increased access, increased congestion, and the need for more road improvements.

Poor planning and inadequate control of access can quickly lead to an unnecessarily high number of direct accesses along roadways. The movements that occur on and off roadways at driveway locations, when those driveways are too closely spaced, can make it very difficult for through traffic to flow smoothly at desired speeds and levels of safety. The American Association of State Highways and Transportation Officials (AASHTO) state that "the number of accidents is disproportionately higher at driveways than at other intersections…thus their design and location merits special consideration." Studies have shown that

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anywhere between 50 and 70 percent of all crashes that occur on the urban street system are access related.

Fewer direct accesses, greater separation of driveways, and better driveway design and location are the basic elements of access management. There is less occasion for through traffic to brake and change lanes in order to avoid turning traffic when these techniques are implemented uniformly and comprehensively.

Consequently, with good access management, the flow of traffic will be smoother and average travel speeds higher, with less potential for crashes. Before and after analyses by the Federal Highway Administration (FHWA), show that routes with well managed access can experience 50 percent fewer accidents than comparable facilities with no access controls.

Through the development review and approval process, the City will evaluate proposed access points using the principles described above.

4.2.2 Roadway Network and Access Management Standards

The access management concepts and standards presented below are consistent with guidelines established by the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), the Transportation Research Board (TRB), and the Institute of Transportation Engineers (ITE).

There are a number of access management techniques that can be used to preserve or enhance the capacity of a roadway. Specific techniques for managing access are discussed in this section and illustrated with examples. Not all techniques will apply to every situation. Some of them are more appropriate to less developed rural areas of the City, whereas others are more appropriate in the urban areas. In the urban areas, the techniques can be applied when existing sites are redeveloped or when negotiations with landowners are successful. Therefore, it is up to the City to determine what will work best based in each situation.

4.2.2.1 Number of Access Points

Controlling the number of access points or driveways from a site to a roadway reduces potential conflicts between cars, pedestrians, and bicycles. Each parcel should normally be allowed one access point and commercial properties should be required to share access where possible. Provisions can be made in the local land use regulations to allow for more than one access point where special circumstances would require additional accesses.

4.2.2.2 Spacing of Access Points

Establishing a minimum distance between access points reduces the number of points a driver has to observe and reduces the opportunity for conflicts. Spacing requirements should be based on the classification and design speed of the road, the existing and projected volume of traffic as a result of the

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proposed development, and the physical conditions of the site. Minimum spacing standards should be applied to both residential and commercial/industrial developments.

To ensure efficient traffic flow, new signals should be limited to locations where the progressive movement of traffic will not be impeded significantly. Uniform, or near uniform, spacing of signals is essential for the progression of traffic.

Un-signalized accesses are far more common than signalized accesses. They affect all kinds of activity, not merely large activity centers. Traffic operational factors lead towards wider spacing of driveways (especially medium- and higher-volume driveways) include weaving and merging distances, stopping sight distance, acceleration rates, and storage distance for back-to-back left turns. From a spacing perspective, these driveways should be treated the same as public streets.

Restricted access movement (i.e., right-in/right-out access) can provide for additional access to promote economic development with minimum impact to the roadway facility. This type of access should be spaced to allow for a minimum of traffic conflicts and provide distance for deceleration and acceleration of traffic in and out of the access. Restricting access on roads may create double frontage lots. This can be mitigated through landscape buffering. See the City's Standard Technical Specifications for specific access management standards.

4.3 Safety

One of the main goals of the TMP and long term transportation planning in general is to envision traffic growth and provide for adequate facilities as the need arises. Constructing these future facilities to make possible safe operations is of equal importance. As a result, all of these facilities should be constructed and maintained to applicable design and engineering standards such as those set forth in Saratoga Springs City ordinances, the American Association of State Highway Transportation Officials (AASHTO) "Policy on Geometric Design of Highways and Streets," and the Manual on Uniform Traffic Control Devices (MUTCD). This includes implementing applicable Americans with Disabilities Act (ADA) standards and school zone treatments.

4.3.1 Driveways

One safety item that deserves attention is the interaction of driveways on collector and arterial streets. Where accesses do exist on these roadways, sufficient space should be provided to allow vehicles to turn around on site so that they always exit the driveway facing the street. For example, private residences ought to have circular type driveways in order to safely enter and exit the driveway with ease. Backing maneuvers into busy streets can be very dangerous as this is not a typical action drivers expect. On-street parking on busy streets should be parallel to traffic where possible as opposed to perpendicular to traffic to avoid dangerous backing maneuvers into traffic.

4.3.2 Offset Intersections

Offset intersections often have negative impacts on traffic flow and can potentially create capacity problems at intersections where the left turn storage areas overlap, forcing queued vehicles into through

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traffic lanes. Aligning access on both sides of the street will minimize conflict points in the roadway and provided safer and more efficient traffic flow. Offset intersections should be avoided wherever possible.

4.4 Intersection Improvements

As traffic volumes increase throughout the community, intersection design will become more critical. Proper intersection design will typically facilitate larger traffic flows without widening existing roadway cross-sections. This can minimize impacts to adjacent properties. Therefore, emphasis was placed on identifying critical intersections during the traffic modeling process.

Intersections are a critical element to future functionality. Intersections should provide sufficient turn lanes and adequate queuing lengths. In the future, many intersections throughout the City may require signalization in order to maintain a desirable LOS (see **Figure 3-3**). Stop signs and traffic signals should not be used where not warranted. Studies have shown that in areas where there forms of control have been installed, and not warranted, that the motoring public will disregard the control measure and therefore the right-of-way assignments at that location. This disregard for traffic control devices causes hazardous locations and a general disregard for other traffic control measures in the area.

4.4.1 Stop Sign Warrants

The MUTCD should be used as the standard for determining how and when a stop sign is installed. As stated in the MUTCD, "Stop signs should be used if engineering judgment indicates that one or more of the following conditions exist:

- **Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;**
- **Street entering a through highway or street;**
- **Un-signalized intersection in a signalized area; and**
- **High speeds, restricted view, or crash records indicate a need for control by the stop sign.**

The number of vehicles that are required to stop should be minimized if at all possible to preserve capacity and functionality of the roadway network; therefore, when deciding which road to stop, the street carrying the lowest volume of traffic should be chosen. Less restrictive traffic control such as a yield sign can be used as an alternative to stop signs if at all possible to minimize delays. Yield signs should also be installed per the MUTCD guidelines. Stop signs should not be used to control speed, but to designate right-of-way at intersecting roadways. Multi-way stop control may be used as a safety measure at intersections where the volume of traffic is approximately equal for all approaches and where safety is of concern, or as an interim measure where a traffic signal is justified and has yet to be installed. Engineering judgment and the guidelines outlined in the MUTCD should be used to determine the appropriate application of stop and yield signs.

4.4.2 Traffic Signal Warrants

Traffic signals should not be installed unless at least one or more of the eight traffic signal warrants (as outlined in the MUTCD) have been met. Even if warrants are met for a particular intersection, justification for should still be based on information obtained through engineering studies and comparisons with the

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requirements set forth in the MUTCD. As stated in the MUTCD, "the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." The eight warrants outlined in the MUTCD include the following:

- **Warrant 1: Eight-Hour Vehicular Volume**
- **Warrant 2: Four-Hour Vehicular Volume**
- **Warrant 3: Peak Hour**
- **Warrant 4: Pedestrian Volume**
- **Warrant 5: School Crossing**
- **Warrant 6: Coordinated Signal System**
- **Warrant 7: Crash Experience**
- **Warrant 8: Roadway Network**

4.4.3 Roundabout Intersections

Many communities in the United States are beginning to embrace the concept of roundabouts. A roundabout is an intersection control measure used successfully in Europe and Australia for many years. A roundabout is composed of a circular, raised, center island with deflecting islands on the intersecting streets to direct traffic movement around the circle. Traffic circulates in a counter-clockwise direction making right turns onto the intersecting streets. There are no traffic signals; rather, entering traffic yields to vehicles already in the roundabout.

Advantages of roundabouts include reduced traffic delays, increased safety and reduced right-of-way requirements. They can reduce delays compared to a signalized intersection due to the stop phase being eliminated. At the same time, roundabouts can improve safety because the number of potential impact points, and the number of conflict points the driver must monitor, are both substantially reduced over a conventional four-way intersection. Properly designed roundabouts can also accommodate emergency vehicles, trucks, and snow plowing equipment.

Unlike the typical New England "traffic circle" or "rotary," design standards for roundabouts are very specific and the Federal Highway Administration (FHWA) has prepared a design guide for modern roundabouts in the United States. Development of a roundabout will only occur as a result of an intersection study performed by a qualified Traffic Engineer and when the minimum capacity and design criteria are met. The FHWA has determined that the maximum flow rate that a roundabout can accommodate depends on the geometric elements (circle diameter, number of lanes, etc.), the circulating flow (vehicles going around the circle), and entry flow (vehicles entering the circle). A single lane roundabout can accommodate up to 1,800 vehicles per hour and a double lane roundabout can accommodate up to 3,400 vehicles per hour. **Figure 4-3** shows an example of a typical single lane roundabout design.

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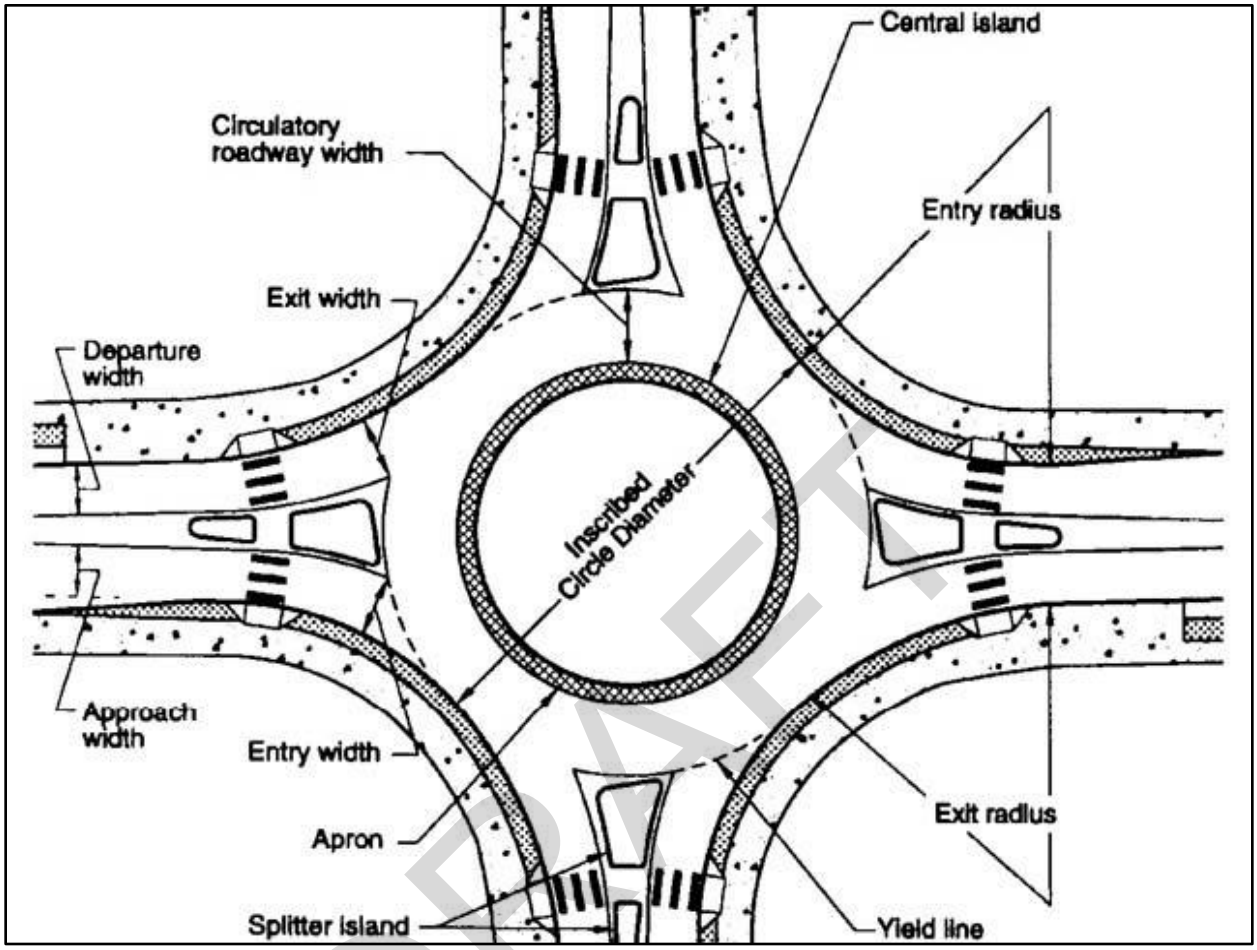

Figure 4-3 Typical Roundabout Design

The National Transportation Research Board examined traffic delays before and after roundabouts were installed at eight intersections in the United States. The study determined that delays (the time spent stopped and moving up to the intersection) decreased on average by 78 percent and 76 percent during the AM Peak Hour and PM Peak Hour, respectively. The results indicate that roundabouts can reduce congestion in certain circumstances. In addition, the FHWA studied safety characteristics of a sample of eleven roundabouts in the United States. The agency determined that the number of personal injury accidents and property damage-only accidents decreased 51 percent and 29 percent, respectively, after roundabouts replaced conventional intersections. Roundabouts are an appropriate solution for certain problem intersections in the region.

There are numerous reasons for selecting a roundabout as a preferred alternative, with each reason carrying its own considerations and trade-offs. Below are some potential applications or roundabouts[2]:

[2] Source: NCHRP Report 672, Roundabouts: An Informational Guide Second Edition

- **New Residential Subdivisions**

  Developers have begun to use roundabouts in residential subdivisions with increasing frequency. Roundabouts provide a variety of operational and aesthetic benefits and create a sense of place that is attractive to developers and homeowners.

- **Urban Centers**

  Roundabouts may be considered an optimal choice in situations where existing or planned access-management strategies along a corridor facilitate U-turn movements at nearby intersections.

- **Suburban Municipalities and Small Towns**

  Smaller municipalities are often ideal locations to consider roundabouts. Right-of-way is often less constrained, traffic volumes are lower, and the aesthetic opportunities for landscaping and gateway treatments are enticing. Existing operational and/or safety deficiencies can also often be addressed.

- **Rural Settings and Small Communities**

  Safety may often be the driving factor over capacity in making a roundabout an appealing choice. Within small communities along an extended highway, a roundabout is ideal for supporting speed reductions.

- **Schools**

  Roundabouts may be an optimal choice for intersection control in the vicinity of schools. One primary benefit is the reduction of vehicle speeds in and around the roundabout. Roundabouts improve pedestrian crossing opportunities, providing mid-block refuge and the ability for pedestrians to focus on one direction of traffic at a time.

- **Interchanges**

  Situations where an intersection ramp terminal has the potential for a high proportion of left-turn flows from the off-ramps and to the on-ramps may be ideal candidate for a roundabout.

- **Commercial Developments**

  Roundabouts in commercial developments provide for a central focus point for a development and enhance aesthetic qualities. They are also capable of processing high volumes of traffic.

- **Unusual Geometry**

  Intersections with unusual geometric configurations, intersection angles, or more than four legs are often difficult to manage operationally. Roundabouts are a proven traffic control device in such situations, effectively managing traffic flows without the need for costly expenditures on unique signal controller equipment or unusual signal timing.

- **Closely Spaced Intersections**

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Roundabouts balance traffic flows and manage queue lengths between closely spaced intersections.

The City of Saratoga Springs will consider roundabouts as an intersection alternative at specific locations pending more detailed traffic analysis as needs arise through the development process.

4.5 Traffic Calming

Street patterns are typically developed in response to the desires of the community at the time of construction. In Utah, the history of using a grid system for planning and development purposes started long ago and has proven efficient for moving people and goods throughout a network of surface streets. However, the nature of a grid system with wide and often long, straight roads can result in excessive speeds. For that reason, traffic calming measures (TCMs) can be implemented to reduce speeds on residential roadways. Saratoga Springs is an exception to the Utah grid system and as such has fewer problems with long, wide, straight street sections that can contribute to high speeds and unsafe conditions. Traffic Calming is however still applicable to many neighborhood or local streets and should be at least given consideration on the City's local and residential streets on a case by case basis where applicable.

4.6 Corridor Preservation

Corridor preservation is an important transportation planning tool that agencies should use and apply to all future transportation corridors. There are several new transportation facilities that have been identified in the TMP. In planning for these future facilities, corridor preservation techniques should be employed. The main purposes of corridor preservation are to:

- **Preserve the viability of future options,**
- **Reduce the cost of these options, and**
- **Minimize environmental and socio-economic impacts of future implementation.**

Corridor preservation seeks to preserve the right-of-way needed for future transportation facilities and prevent development which might be incompatible with these facilities. This is primarily accomplished by the community's ability to apply land use controls such as zoning and approval of developments. Adoption of the TMP by Saratoga Springs City is a commitment to citizens and future leaders in the community that the identified future corridors will be the ultimate location for transportation facilities.

Perhaps, the most important elements of corridor preservation are ensuring that the corridors are preserved in the correct location and that they meet the applicable design and right-of-way standards for the type of facility being preserved. As the master plan does not define the exact alignment of each future corridor, it becomes the responsibility of the City to make sure that the corridors are correctly preserved. This will have to be accomplished through the engineering and planning reviews done within the City as development and annexation requests are approved that involve properties within or adjacent to the future corridors.

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4.6.1 Corridor Preservation Techniques

Some examples of specific corridor preservation techniques that may be most beneficial and easily implemented include the following:

- **Developer Incentives and Agreements:** Public agencies can offer incentives in the form of tax abatements, density credits, or timely site plan approvals to developers who maintain property within proposed transportation corridors in an undeveloped state.
- **Exactions:** As development proposals are submitted to the City for review, efforts should be made to exact land identified within the future corridors. Exactions are similar to impact fees, except they are paid with land rather than cash.
- **Fee Simple Acquisitions:** This will most likely consist of hardship purchases or possible city acquisition of property identified within the corridors. Parcels obtained in fee title can later be sold at market value to the owner of the transportation facility when construction begins.
- **Transfer of Development Rights and Density Transfers:** Government entities can provide incentives for developers and landowners to participate in corridor preservation programs using the transfer of development rights and density transfers. This is a powerful tool in that there seldom is any capital cost to local governments.
- **Land Use Controls:** This method allows government entities to use police power to regulate intensity and types of land use. Zoning ordinances are the primary controls over land use and the most important land use tools available for use in corridor preservation programs.
- **Purchase of Options and Easements:** Options and easements allow government agencies to purchase interests in property that lies within highway corridors without obtaining full title of the land. Usually, easements are far less expensive than fee title acquisitions.

4.7 Traffic Impact Studies

As growth occurs throughout the City, the City will evaluate the impacts of proposed developments on the surrounding transportation networks prior to giving approval to build. This will be accomplished by requiring that a Traffic Impact Study (TIS) be performed for any development in the City based on City staff recommendations. A TIS will allow the City to determine the site specific impacts of a development including internal site circulation, access issues, and adjacent roadway and intersection impacts. In addition, a TIS will assist in defining possible impacts to the overall transportation system in the vicinity of the development. The area and items to be evaluated in a TIS include key intersections and roads as determined by the City Engineer on a case by case basis. Other items that should be included in a TIS include:

- **A description of the project site and study area boundaries including a site plan and study area map showing the proposed project access locations and connections to the adjacent road network.**
- **A description of existing and proposed land uses within the study area including a discussion of the project land use.**
- **A description of existing and proposed key roadways and intersections in the study area including lane configurations and traffic controls.**
- **A discussion of trip generation, distribution, and assignment methodologies and assumptions.**

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- **A level of service (LOS) and capacity analysis of existing traffic levels and conditions for key roadway segments and intersections.**
- **A LOS and capacity analysis of background traffic levels and conditions (existing traffic plus additional traffic projected from normal growth rates and from other known developments in the study area at the time of completion) for key roadway segments and intersections.**
- **A LOS and capacity analysis of background plus project traffic levels and conditions (background traffic plus projected traffic associated with the proposed project) for key roadway segments and intersections.**
- **A safety analysis for key roadways and intersections including applicable accident histories.**
- **Any applicable yield sign, stop sign, multi-way stop signs, and traffic signal warrant analyses.**
- **A determination of the street system's ability to accommodate projected traffic levels.**
- **An identification of impacts to the existing street system as a result of the project.**
- **A discussion of improvements to be implemented as part of the project to accommodate project traffic such as roadway and intersection widening to provide exclusive turn lanes or modifications to traffic controls.**
- **A discussion of mitigation measures to be implemented to restore or improve traffic operations to an acceptable LOS on any key roadway segments or at key intersections within the study area.**

Each TIS will be conducted by a qualified Traffic Engineer chosen by the City at the developer cost. The City Engineer will determine the scope of each TIS, based on the UDOT Traffic Impact Study Requirements found in the appendix of this report, and will review its contents once complete and provide comments. Upon receiving approval from the City Engineer, the TIS requirement related to the development will be satisfied. If a developer feels that his or her project does not meet the requirements to have a TIS completed, then the developer will need to provide documentation stating his or her case which will be reviewed by the City Engineer.

4.8 Agency Coordination

As many of the roads in Saratoga Springs City are either owned by or connect into roads that are owned by other agencies such as UDOT, neighboring cities, and Utah County, a close working relationship should be maintained between these different jurisdictions and the City to ensure that roadway projects are not only coordinated but consistent.

4.9 Planned Roadway and Intersection Improvements

A number of roadway and intersection improvements have been recommended to occur between now and the year 2040. These recommendations are based on travel demand volume predictions and available capacity of each roadway. Each of these improvements should be implemented as a result of increasing traffic volumes due to future development.

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Table 4-1 outlines these recommended improvements. This table will be regularly updated by the City as plans for development change and become adopted.

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Table 4-1 Saratoga Springs City Recommended Transportation Improvements

Type of Improvement	Roadway or Location	Jurisdiction(s)
Widen Arterial (7 Lanes)	Redwood Road (SR-68): Northern Border to Grandview Blvd	UDOT
Widen Arterial (5 Lanes)	Redwood Road (SR-68): Grandview Blvd to Southern Border	UDOT
Widen Arterial (5 Lanes)	Pony Express: Redwood Road to Western Boarder	Saratoga Springs
Widen to 6 Lane Freeway	Cedar Fort Road (SR-73): Mountain View Corridor Frontage to Western Border	UDOT
New 6 Lane Freeway	Mountain View Corridor: Northern Border to SR-73	UDOT
New 6 Lane Freeway	2100 North Connection: Eastern Border to Mountain View Corridor	UDOT
New Collector	Exchange Place: Crossroads Blvd to Market Street	Saratoga Springs
New Collector	Riverside Drive Extension: End of Existing to Pioneer Crossing (SR-145)	Saratoga Springs
Widen Arterial (5 Lanes)	Crossroads Blvd: Commerce Drive to Eastern Border	Saratoga Springs
Widen Arterial (5 Lanes)	Pony Express Extension: Redwood Road (SR-68) to Riverside Drive	Saratoga Springs
New Collector (Widen Existing)	Talus Ridge Drive: Foothill Drive to Mt. Saratoga Boulevard	Saratoga Springs
New Collector	Mt. Saratoga Boulevard: Cedar Fort Road (SR-73) to Pony Express Parkway	Saratoga Springs
New Collector	600 West: Pony Express to 1000 South	Saratoga Springs
New Minor Arterial	400 South: Redwood Road (SR-68) to Foothill Boulevard	Saratoga Springs
New Minor Arterial	800 South: Redwood Road (SR-68) to Foothill Boulevard	Saratoga Springs
New Traffic Signal	Signal: Crossroads Blvd & Riverside Drive	Saratoga Springs
New Traffic Signal	Signal: Market Street & Redwood Road (SR-68)	UDOT
New Traffic Signal	Signal: Market Street & Pioneer Crossing (SR-145)	UDOT
New Traffic Signal	Signal: Riverside Drive & Pioneer Crossing (SR-145)	UDOT
New Traffic Signal	Signal: 800 South & Redwood Road (SR-68)	UDOT
New Collector	Harvest Hills Blvd: Redwood Road (SR-68) Eastern Border	Saratoga Springs

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Type of Improvement	Roadway or Location	Jurisdiction(s)
New 4 Lane Freeway	Mountain View Corridor Extension: Cedar Fort Freeway (SR-73) to Pony Express Parkway	UDOT
New 4 Lane Freeway/Arterial	Foothill Boulevard: Pony Express to Redwood Road	UDOT
New Collector	New Roadway South of Harbor Park Way: Redwood Road to Bonneville Drive	Saratoga Springs
New Collector	Bonneville Drive: Pony Express Pkwy to 800 South	Saratoga Springs
New Local Road	Bonneville Drive: 800 South to Foothill Boulevard	Saratoga Springs
New Collector	Bonneville Drive: Foothill Boulevard to Redwood Road (SR-68)	Saratoga Springs
New Minor Arterial	400 South: Mountain View Corridor to Bonneville Drive	Saratoga Springs
New Collector	800 South: Mountain View Corridor to Bonneville Drive	Saratoga Springs
New Collector	200 West: Pony Express Pkwy to 1000 South	Saratoga Springs
New Collector	1000 South: 200 West to Mountain View Corridor	Saratoga Springs
New Minor Arterial	Market Street: Pioneer Crossing (SR-145) to Mountain View Corridor	Saratoga Springs
New Collector	Crossroads Blvd. Extension: Pioneer Crossing (SR-145) to Foothill Blvd.	Saratoga Springs
New Collector	400 West: Aspen Hills Blvd. to Crossroads Blvd.	Saratoga Springs
New Minor Arterial	Hidden Valley Highway: Foothill Boulevard to Western Border	UDOT
Widen Arterial (7 Lanes)	Pioneer Crossing (SR-145): Eastern Border to Cedar Fort Road (SR-73)	UDOT
New/Widen Arterial (5 Lanes)	Pony Express Extension: Riverside Drive to Eastern Border	Saratoga Springs
New Collector	900 East Extension: Pony Express to Pioneer Crossing (SR-175)	Saratoga Springs
Widen Collector	Saratoga Road: Pony Express to Pioneer Crossing (SR-175) (Saratoga Springs Portion)	Saratoga Springs
Widen Collector	7750 North: Saratoga Road to 1700 West	Saratoga Springs
New Collector	Grandview Blvd: Mountain View Corridor to Bonneville Drive	Saratoga Springs
Local Collector Connection	Ring Road: Finish loop roadway	Saratoga Springs

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Type of Improvement	Roadway or Location	Jurisdiction(s)
New Collector	Stillwater Drive: Foothill Boulevard to Bonneville Drive	Saratoga Springs
Collector Extension	Wildlife Blvd Extension to Village Parkway	Saratoga Springs
New Collector	400 North: Redwood Road (SR-68) to Riverside Drive	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and Bonneville Drive	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and Foothill Blvd.	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and 200 West	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and Riverside Drive	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and Mt. Saratoga Boulevard	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and Saratoga Road	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and 1700 West	Saratoga Springs
New Traffic Signal	Traffic Signal: Pony Express Pkwy and 1100 West	Saratoga Springs
New Traffic Signal	Traffic Signal: Redwood Road (SR-68) and Ring Road	UDOT
New Traffic Signal	Traffic Signal: Redwood Road (SR-68) and Village Pkwy	UDOT
New Traffic Signal	Traffic Signal: Redwood Road (SR-68) and Bonneville Drive	UDOT
New Traffic Signal	Traffic Signal: Foothill Boulevard and Harvest Hills Boulevard	Saratoga Springs
New Traffic Signal	Traffic Signal: Aspen Hills Boulevard and Redwood Road (SR-68)	UDOT
New Traffic Signal	Traffic Signal: Dalmore Drive and Redwood Road (SR-68)	UDOT
New Traffic Signal	Traffic Signal: Pioneer Crossing (SR-145) and Saratoga Road	UDOT
New Interchange	Interchange: Mountain View Corridor and Redwood Road (SR-68)	UDOT
New Collector	1500 North Extension: 3600 West and Redwood Road (SR-68)	Saratoga Springs/ Lehi
Widen Collector	1200 North: Foothill Boulevard and Hillside Drive	Saratoga Springs

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Type of Improvement	Roadway or Location	Jurisdiction(s)
New Road	Harvest Hills Boulevard Extension: Redwood Road (SR-68) to Eastern Border	Saratoga Springs/ Lehi
New Traffic Signal	Traffic Signal: Pony Express Parkway & 800 West	Saratoga Springs
New Road	Market Street: Redwood Road (SR-68) to Riverside Drive	Saratoga Springs
New Traffic Signal	Traffic Signal: Redwood Road (SR-68) and 2200 North (Questionable)	UDOT

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4.10 Special Considerations

A few specific locations on Saratoga Springs City's street network may require some unique improvements to resolve traffic issues at these sites. These areas are identified below along with the unique characteristics of each location.

4.10.1 Mountain View Corridor (2100 North to Pony Express Parkway)

Mountain View Corridor from 2100 North to Pony Express Parkway runs through a substantial portion of property managed by Suburban Land Reserve, Inc. (SLR). SLR has in place a development agreement for their property in the City and has been involved in the transportation planning process as it pertains to their property. The Mountain View Corridor extension is proposed on the MAG 2020-2040 metropolitan transportation plan as part of phase 3 (2031-2040). The facility is expected to be a full freeway facility with appropriate design guidelines and interchange spacing as recommended by UDOTs access management standards. This project will need extensive environmental clearance and the City will need to coordinate with UDOT when it comes time to begin that process. It is likely that the Mountain View Corridor extension will include six, 12' wide travel lanes, three in each direction with appropriate shoulders and clearance zones. The facility will probably be posted at 65 mph consistent with other freeway facilities in the valley and the northern portion of Mountain View Corridor. It is expected that Mountain View Corridor will carry 38,000 vehicles per day in 2040. This roadway has been studied multiple times over the past few years by MAG. Three of these studies are listed below and can be accessed online at the following locations:

- **MAG West Lake Vision Study**
  http://mountainland.org/site/articles/view/1232
- **Lake Mountain Transportation Study**
  http://mountainland.org/site/articles/view/1220
- **Utah County East-West Study**
  http://mountainland.org/site/articles/view/1231

As an option, one-way frontage roads with slip ramps providing freeway access may be considered as an alternative to traditional diamond interchanges. This alternative will provide greater exposure to commercial development along the freeway corridor and allow for commercial strips along the length of the freeway rather than large commercial nodes at just the freeway interchanges. Another advantage of this concept has been exhibited on the Salt Lake County portion of Mountain View Corridor. This section has been phased to build the frontage road system (currently under construction) before the freeway portion is constructed. The frontage roads provide enough capacity for the immediate needs and allow for development adjacent to the corridor while also reserving enough right-of-way for the freeway section to be constructed when traffic volumes justify it in the future. **Figure 4-4** gives an example of Mountain View Corridor in Salt Lake Count and represents an idea of how the MVC extension may look in Saratoga Springs. It is anticipates that this cross-section can be constructed within a 300 foot right-of-way. The initial construction phase could include only the one-way frontage roads show in the initial construction picture. These frontage roads will accommodate near term growth and move traffic up and down the

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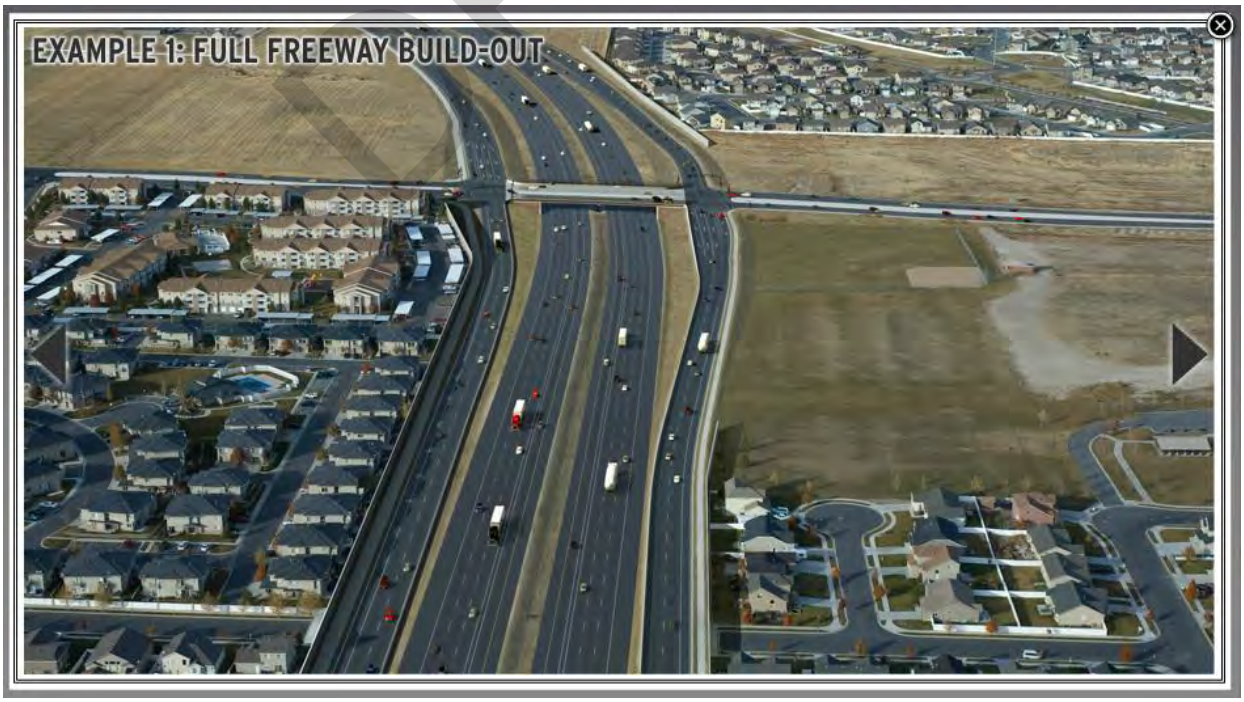
corridor for the short term. As development and population increases, the freeway section of the roadway could be completed in the preserved right-of-way between the frontage roads as shown in the full freeway build-out example. UDOT is investigating a study to evaluate the exact needs of this corridor.

Figure 4-4 Mountain View Corridor Extension Example



4.10.2 Foothill Boulevard (Pony Express Boulevard to Redwood Road)

Foothill Boulevard from 400 South to Redwood Road will be an extension of the UDOT Mountain View Corridor expected before 2040. The City has expressed a desire to build this facility as a 4 lane Boulevard similar in design and functionality to Legacy Parkway in Davis County. A recent study updated the proposed alignment of Foothill Boulevard and is shown in **Figure 3-3**. More analysis will be completed in a study funded by MAG in 2017. Any updates based on the results of the study will be updated in this TMP.

4.10.3 Hidden Valley Highway

As population increases in Saratoga Springs and also in Eagle Mountain, the need for greater east-west mobility through the area will increase rapidly. The Hidden Valley Highway is intended as a limited access highway facility connecting Eagle Mountain with Saratoga Springs. The Hidden Valley Highway will likely be posted at 55mph due to topographic restrictions but will be access controlled like other highway facilities in the county with appropriate interchange spacing in compliance with UDOT standards.

4.10.4 SR-73

SR-73 will eventually need to be converted to a six lane freeway facility. This improvement is a capacity improvement to east-west movement through the City. SR-73 is currently being widened from two lanes to four lanes in sections between Saratoga Springs and Eagle Mountain. Upgrading the section of roadway from the future Mountain View Corridor to approximately Ranches Parkway in Eagle Mountain is a long term planning project. Substantial environmental clearance will likely be required and it is recommended that this project be considered after the completion of the Hidden Valley Highway. It is expected that SR-73 will carry 85,000 vehicles per day in 2040.

SR-73 has not been rigorously access controlled in the past as it was classified as a two lane rural highway. The rapid population growth in the area in recent years has necessitated and will continue to demand stricter access control. As such, many of the access points that currently exist may need to be cut off from the roadway. A potential mitigation to the removal of these access points would be to again construct a frontage road system or Collector-Distributor (C-D) road system paralleling the freeway. This would, as in the other cases previously discussed, provide greater access to properties adjacent to SR-73, provide a buffer between the freeway and adjacent land uses, and eliminate the need for large footprint interchanges by providing access via slip ramps.

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5.0 Potential Funding Sources

Funding sources for transportation are essential if Saratoga Springs City recommended improvements are to be built. Presently there are four main sources of revenue available to Saratoga Springs City: federal funding, state funding, local general funding, and impact fees. The following paragraphs further describe these various transportation funding sources available to the City.

5.1 Federal Funding

Federal monies are available to cities and counties through the federal-aid program. The funds are administered by the Utah Department of Transportation (UDOT). In order to be eligible, a project must be listed on the five-year Statewide Transportation Improvement Program (STIP).

The Surface Transportation Program (STP) funds projects for any roadway with a functional classification of a collector street or higher as established on the Utah State Functional Classification Map (**Figure 5-1**). STP funds can be used for both rehabilitation and new construction. The Joint Highway Committee programs a portion of the STP funds for projects around the State in urban areas. Another portion of the STP funds can be used for projects in any area of the State at the discretion of the State Transportation Commission. Transportation Enhancement funds are allocated based on a competitive application process. The Transportation Enhancement Committee reviews the applications and then a portion of those are passed to the State Transportation Commission. Transportation enhancements include 12 categories ranging from historic preservation, bicycle and pedestrian facilities, and water runoff mitigation. Other federal and state trails funds are available from the Utah State Parks and Recreation Program.

MAG accepts applications for federal funds through local and regional government jurisdictions. Transportation related projects are selected for funding every two years by the MAG Technical Advisory and Regional Planning committees. The selected projects form the Transportation Improvement Program (TIP). In order to receive funding, projects should include one or more of the following aspects:

Congestion Relief – spot improvement projects intended to improve Levels of Service and/or reduce average delay along those corridors identified in the Regional Transportation Plan as high congestion areas.

- **Mode Choice –** projects improving the diversity and/or usefulness of travel mode other than single occupant vehicles.
- **Air Quality Improvements –** projects showing demonstrable air quality benefits.
- **Safety –** improvements to vehicular, pedestrian, and bicyclist safety.

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Since the adoption of the TMP in 2013, the City has had great success in procuring federal funding through the TIP selection process. The following lists the projects selected in the TIP process for 2014 and 2017.

- **Pony Express Parkway Widening**
- **Redwood Road Widening**
- **Redwood Road Trail**
- **Crossroads Boulevard Widening**
    - **New Bike and Pedestrian Bridge Access across the Jordan River**
- **Utah Lakeshore Trail: Saratoga Road to Loch Lohmond Subdivision**

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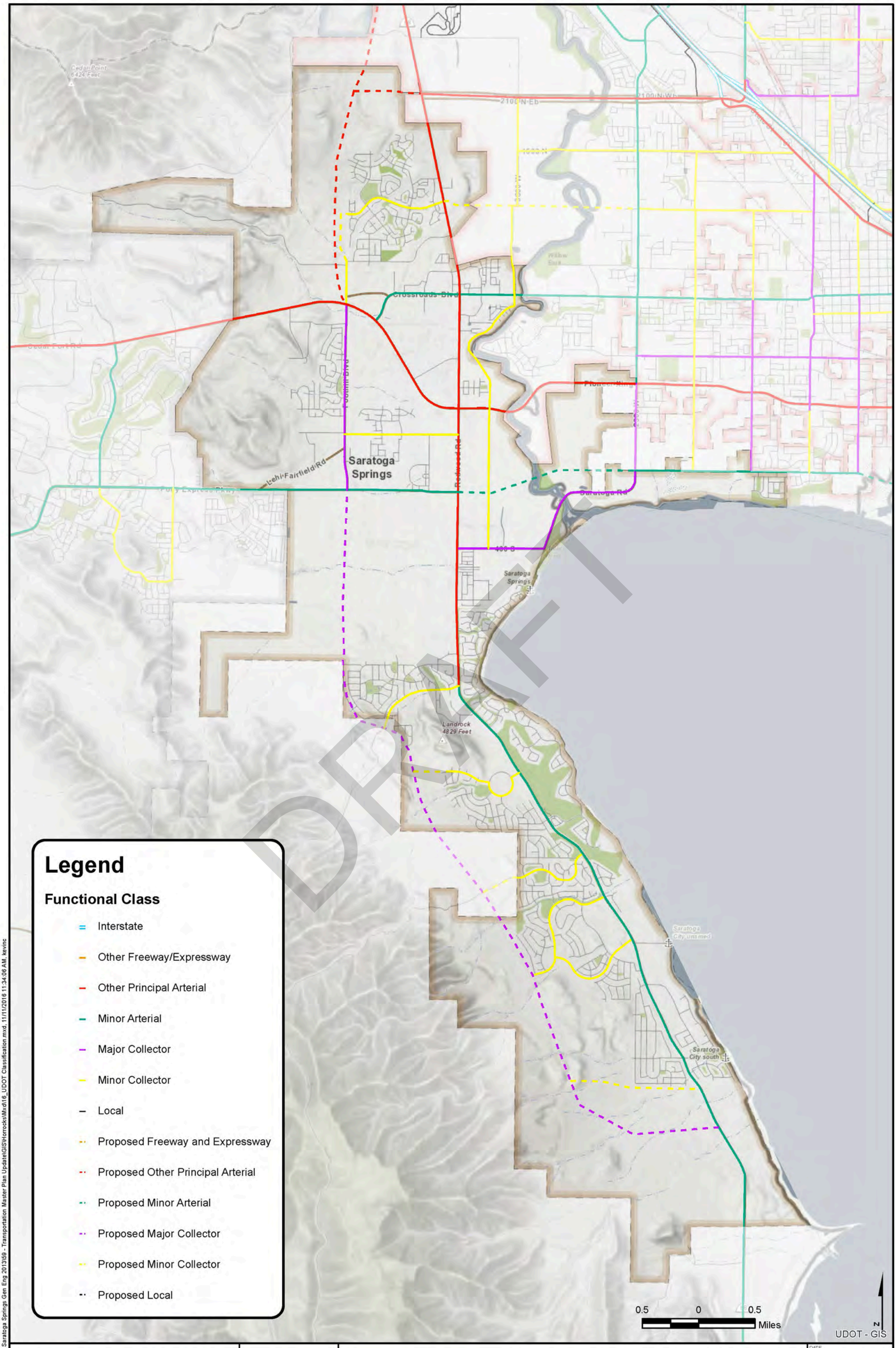

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O:\2013\PG-163-1301 Saratoga Springs Gen Eng 2013\59 - Transportation Master Plan Update\GIS\Horrocks\Mxd\16_UDOT Classification.mxd, 11/11/2016 11:34:06 AM, kevinc

HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

UDOT Functional Classification

Saratoga Springs Transportation Master Plan

DATE 11/11/2016

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Figure 5-1

5.2 State Funding

The distribution of State Class B and C Program monies is established by State Legislation and is administered by the State Department of Transportation. Revenues for the program are derived from State fuel taxes, registration fees, driver license fees, inspection fees, and transportation permits. Seventy-five percent of these funds are kept by UDOT for their construction and maintenance programs. The rest is made available to counties and cities. As many of the roads in Saratoga Springs, it is in the interests of the City that staff be aware of the procedures used by UDOT to allocate those funds and to be active in requesting the funds be made available for UDOT owned roadways in the City.

Class B and C funds are allocated to each city and county by a formula based on population, road mileage, and land area. Class B funds are given to counties, and Class C funds are given to cities and towns. Class B and C funds can be used for maintenance and construction projects; however, thirty percent of those funds must be used for construction or maintenance projects that exceed $40,000. The remainder of these funds can be used for matching federal funds or to pay the principal, interest, premiums, and reserves for issued bonds.

5.3 Local Funding

Most cities utilize general fund revenues for their transportation programs. Another option for transportation funding includes the creation of special improvement districts. These districts are organized for the purpose of funding a single specific project that benefits an identifiable group of properties. Another source of funding used by cities includes revenue bonding for projects felt to benefit the entire community.

Private interests often provide resources for transportation improvements. Developers construct the local streets within subdivisions and often dedicate right-of-way and participate in the construction of collector/arterial streets adjacent to their developments. Developers can also be considered a possible source of funds for projects through the use of impact fees. These fees are assessed as a result of the impacts a particular development will have on the surrounding roadway system, such as the need for traffic signals or street widening.

5.4 Impact Fees

Impact fees are a way for a community to obtain funds to assist in the construction of infrastructure improvements resulting from and needed to serve new growth. The premise behind impact fees is that if no new development occurred, the existing infrastructure would be adequate. Therefore, new developments should pay for the portion of required improvements that result from new growth. Impact fees are assessed for many types of infrastructure and facilities that are provided by a community, such as roadway facilities. According to state law, impact fees can only be used to fund growth related system improvements

To help fund needed roadway improvements, impact fees should be established. These fees are collected from new developments in the City to help pay for improvements that are needed to the roadway system

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due to growth. At the culmination of the Transportation Master Planning process, a citywide IFFP will be developed according to state law to determine the appropriate impact fee values for the City.

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6.0 Appendix

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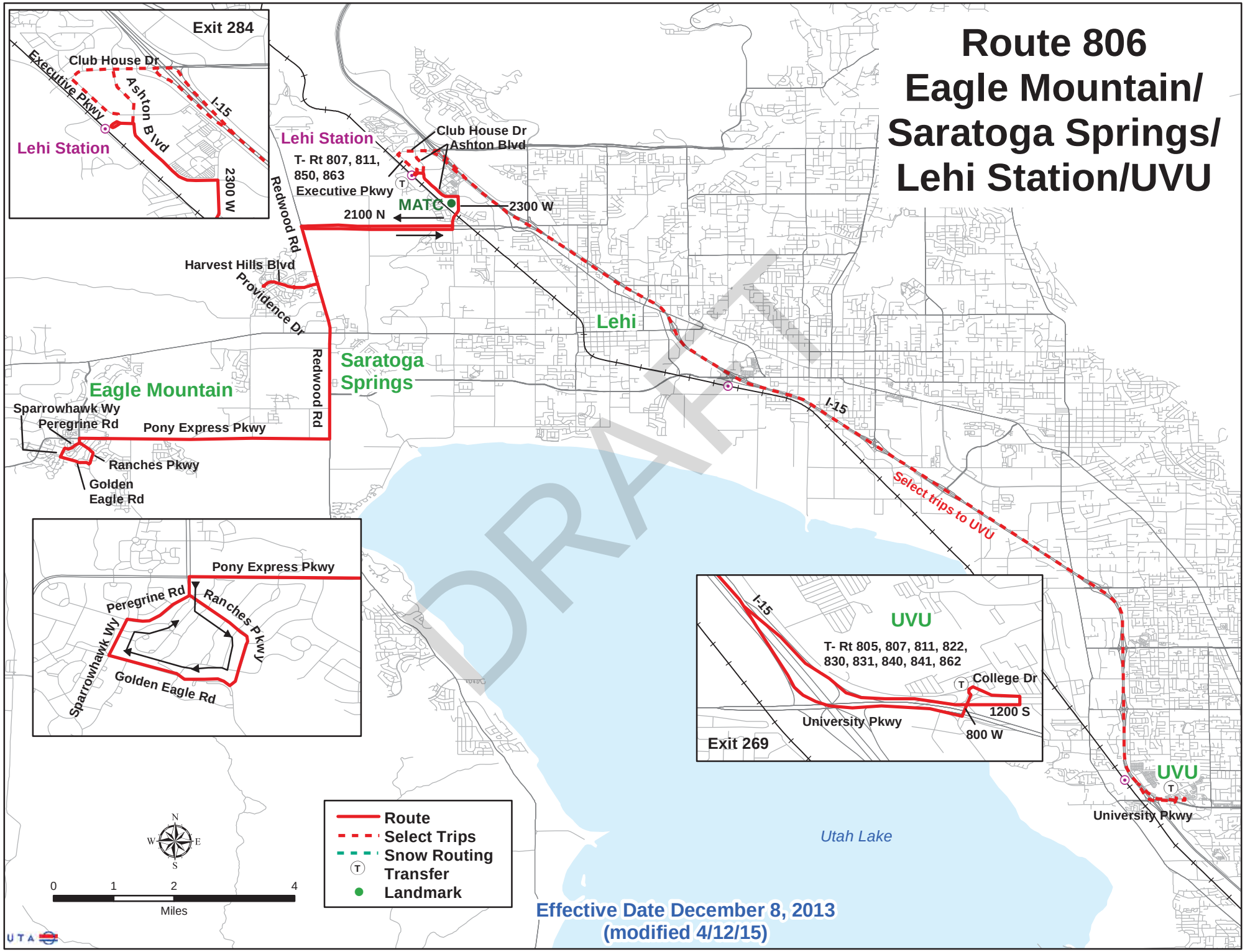
Route 806 Eagle Mountain/ Saratoga Springs/ Lehi Station/UVU



Effective Date December 8, 2013
(modified 4/12/15)

ADDENDUM #1 TO CORRIDOR AGREEMENTS 068007 AND 098477
SR-68 WITHIN THE LIMITS OF THE CITY OF SARATOGA SPRINGS

CITY OF SARATOGA SPRINGS
Federal ID No. 87-0575087

ADDENDUM #1

THIS ADDENDUM, made and entered into this ___ day of _____, 20 _____, by and between the **UTAH DEPARTMENT OF TRANSPORTATION**, hereinafter referred to as "**UDOT**" and the **CITY OF SARATOGA SPRINGS**, a municipal corporation in the State of Utah, hereinafter referred to as the "**CITY**".

WITNESSETH:

WHEREAS, UDOT and the **CITY** entered into agreement #068007 on 1 July 2005 and agreement #098477 on 29 October 2008 to preserve a corridor and establish a traffic signal plan and access control plan along the SR-68 within the limits of the **CITY**, to be in accordance with the **CITY's** current transportation master plan and to be in accordance with **UDOT's** current Access Management Standards and practices, and

WHEREAS, **UDOT** has a project under design which includes the installation of new traffic signals along SR-68, Project No. F-0068(92)26, and

WHEREAS, the **CITY** has grown in population and subdivisions have been constructed wherein local streets now connect to SR-68 since the execution of the aforementioned agreements, and

WHEREAS, this **ADDENDUM** is now written to define and update existing, warranted, and proposed traffic signal locations within the current **CITY** limits.

NOW THEREFORE, it is agreed by and between the parties as follows:

1. The following are identified as existing, warranted or proposed traffic signal installations along SR-68:

    - Foothill Boulevard (5200 South) (Proposed)
    - Bonneville Drive (4700 South) (Proposed)
    - Harbor Park Way (Proposed)
    - Wildlife Boulevard (Proposed)
    - Village Parkway (Proposed)
    - Stillwater Drive (Warranted, to be constructed with project)
    - Fairway Boulevard (Proposed)
    - Ring Road (Warranted, to be constructed with project)
    - Centennial Boulevard (Proposed)
    - Grandview Boulevard (Existing)
    - Parkway Boulevard (Warranted, to be constructed with project)

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- 400 South (Proposed)
- Pony Express Parkway (Existing)
- 400 North (Existing)
- Pioneer Crossing (SR-145) (Existing)
- Market Street (Proposed)
- South Commerce Drive (Proposed)
- Crossroads Boulevard (Existing)
- North Commerce Drive (Existing)
- Aspen Hills Boulevard (Proposed)
- Harvest Hills Boulevard (Proposed)
- 2400 North (Proposed)

2. It is understood by both parties that the current access management category remains in place, which in part states traffic signal spacing is at least 2,640 feet except for the segment between South Commerce Drive and North Commerce Drive, which is at least 1,320 feet.

3. It is further understood by both parties that even though traffic signal spacing is as noted in #2 above, it is reasonable to compromise and make exceptions to signalize some intersections based on the **CITY'S** master plan development and traffic patterns, and without impeding acceptable traffic flow.

4. All terms and conditions of the existing **UDOT** agreements 068007 and 098477 shall remain in effect. No part of this **ADDENDUM** shall relieve the **CITY** of any responsibility or liability associated with the original agreements.

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IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

ATTEST:

By: _____
Title: _____
Date: _____

(IMPRESS SEAL)

CITY OF SARATOGA SPRINGS
Municipal Corporation in the State of Utah

By: _____
Title: _____
Date: _____

ADDENDUM #1 TO CORRIDOR AGREEMENTS 068007 AND 098477
SR-68 WITHIN THE LIMITS OF THE CITY OF SARATOGA SPRINGS

CITY OF SARATOGA SPRINGS
Federal ID No. 87-0575087

****

RECOMMENDED FOR APPROVAL: UTAH DEPARTMENT OF TRANSPORTATION

By:_____
Region Three Traffic Operations Engineer

Date: _____

By: _____
Region Three Director

Date: _____

APPROVED AS TO FORM:

This Form Agreement has been previously approved as to form by the office of Legal Counsel for the Utah Department of Transportation.

COMPTROLLER OFFICE

By: _____
Contract Administrator

Date: _____

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Utah Department of Transportation
Traffic Impact Study Requirements

This memo and preceding information is prepared to assist an access permit applicant fulfilling the requirement of performing a traffic impact study when requesting access to a state highway. Each permit application is unique. The agreed requirements of traffic study and assessment may vary accordingly as agreed to by the Department and the applicant and/or their representative who will perform the traffic study.

Please refer to the Department document, *Accommodation of Utilities and the Control and Protection of State Highway Rights of Way: Section 7, State Highway Access* for full information concerning the grant of access application requirements. A downloadable copy of the document is available on the Department website at http://www.udot.utah.gov.

The following are taken from the Utah state rule 930-6, Accommodation of Utilities and the Control and protection of State Highway Rights of Way. Statements for this guideline are also added which do not appear in the Rule.

7.2.5 Preparing The Access Application

Pre-Application/Concept Meeting

Prior to submitting a permit application, contact the appropriate Department Region or District office for information about the application process and the type of information required. The applicant is advised to consult with the Region Permit Officer during a pre-application meeting to determine the appropriate access category, permit application level, and traffic impact study requirements, and scope for the project.

Permit Level

The level of application required is based upon the size and magnitude of the proposed project applying for a permit. Threshold criteria for different levels of projects have been developed to avoid placing an undue burden on applicants with small projects, while ensuring that large projects with significant impacts are thoroughly evaluated.

Four application levels have been developed based on site-generated traffic of AADT and or peak hour volumes. Each level defines specific threshold elements related to required applicant site plan elements, permitting process, permitting schedule, applicant fees, traffic study requirements, and other permit related issues. The information and level of detail required to review an application will vary according to the type and usage of the access connection requested and will be determined based on the thresholds outlines in, Table 7.2-2: Guidelines for Access Permit Levels. The Region Permit Officer, Traffic Engineer and/or designee will determine the Permit Application Level based on preliminary data supplied by the applicant.

A Traffic Impact Study (TIS) is required of all access permit applications. The purpose of the TIS is to identify system and immediate area impacts associated with the proposed connection(s). Identification of impacts and appropriate mitigation measures allows the Department to assess the existing and future system safety, performance, maintenance, and capacity needs.

Determination of the extent of the TIS study area is at the determination of the attending Region Traffic Engineer and /or other Department employees. The study area, depending on the size and

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intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary. An acceptable traffic study boundary, based on travel time, may be identified as a ten or twenty minute travel time or even by market area influence.

The TIS shall, at a minimum, incorporate traffic engineering principles and the standards as presented in this Rule. Additional requirements and investigation may be imposed upon the applicant as necessary.

Likely information presented in the TIS may include, but is not limited to, site location and proposed access point(s), phased and/or full development trip generation, connection point design elements, adjacent and relevant development, existing and future traffic volumes, assessment of the system impacts, and mitigation measures as appropriate.

The applicant will be responsible for performance and delivery of an acceptable traffic impact study. The TIS should be performed by an individual or entity demonstrating capability to analyze and report mobility, traffic engineering elements, and design elements as necessary for the application study area and site design. The TIS should be prepared directly, or by direct supervision by a State of Utah Licensed Professional Engineer. The Region Traffic Engineer may waive the licensing requirement for Permit Level I and II, and may also waive the Utah Licensure requirement.

7.2.6 Application Review

For an access permit, submit one complete application with attachments to the Region Permits Officer at the appropriate Department Region Office. The Region Permits Officer is the primary contact for the applicant with the Department throughout the process. Direct inquires regarding a permit application or review, are directed to the Region Permit Officer.

7.2.11 Traffic Impact Studies

Need for Traffic Impact Study

A traffic study is necessary to identify, review, and make recommendations for mitigation of the potential impacts a development may have on the roadway system. Physical characteristics and operational characteristics of the roadway are typically identified. The Region Permits Officer and/or Region Traffic Engineer determine the need for a traffic impact study.

An applicant may be required to submit a traffic study for any proposed access or connection within an area identified by the Department. Area definition may be defined by, but not limited to, an identified safety problem, accident review, congested locations, or as a result of a change in land use and/or access in accordance with an access permit application. The study area may also be defined by a travel time boundary, area of influence, physical boundaries, or political boundaries.

Purpose of the Traffic Impact Study

TIS are intended to:

- Document whether or not the access request can meet the standards and requirements of this Rule and other applicable regulations.
- Analyze appropriate location, spacing, and design of the access connection(s) necessary to mitigate the traffic.

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- Analyze operational impacts on the highway and permissible under the highway's assigned access category and in accordance with applicable requirements and standards of this Rule.
- Recommend the need for any improvements to the adjacent and nearby roadway system to maintain a satisfactory level of service and safety and to protect the function of the highway system while providing appropriate and necessary access to the proposed development.
- Assure that the internal traffic circulation of the proposed development is designed to provide safe and efficient access to and from the adjacent and nearby roadway system consistent with the purpose of this Rule.
- Analyze and recommend the means for land uses to minimize their external transportation costs to the traveling public through traffic improvements necessitated by that development as well as making the fullest use of alternative travel modes.

Traffic Impact Study Requirements

When a Traffic Impact Study is required (See Table 7.2-2), prepare the study according to the Department Traffic Impact Study Requirements. The appropriate Region Traffic Engineer in consultation with the permit applicant will determine the traffic study area limits.

All existing and proposed access points, driveways and streets, shall be identified for each site, including access on the opposite side of the site and within the influence area of the proposed site access. The influence area will be defined by the Region Traffic Engineer and/or designee. Each access will be labeled for proposed accesses as P1, P2, P3… and existing accesses as E1, E2, E3,…

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Accommodation of Utilities and the Control and Protection of State Highway Rights of Way
Table 7.2-2

Guidelines for Access Permit Levels

Permit Type App. Level	Thresholds	Typical Land Use Intensity Thresholds (ITE Trip Generation)		Traffic Impact Study Required
I	Projected site traffic < 100 ADT **and** No proposed modifications to traffic signals or elements of the roadway	Single Family Apartment Lodging General Office Retail	< 10 units < 15 units < 11 occupied rooms < 9,000 square feet < 2,500 square feet	YES Conditions Apply
II	Projected site traffic between 100 and 3,000 ADT **or** Projected peak hour traffic < 500 **and** Minor modifications to traffic signals or elements of the roadway	Single Family Apartment Lodging General Office Retail Gas Station Fast Food Restaurant	10 to 315 units 15 to 450 units 11 to 330 occupied rooms 9,000 to 270,000 sq. ft. 2,500 to 70,000 sq. ft. 1 to 18 fueling positions 1,000 to 6, 000 sq. ft. 1,000 to 26,000 sq. ft.	YES
III	Projected site traffic between 3,000 and 10,000 ADT **or** Projected peak hour traffic between 500 and 1,200 **or** Proposed installation or modification to traffic signals or elements of the roadway, regardless of project size	Single Family Apartment Lodging General Office Retail Fast Food	315 to 1,000 units 450 to 1,500 units 330 to 1,100 occupied rooms 270,000 to 900,000 sq. ft. 70,000 to 230,000 sq. ft. 6,000 to 20, 000 sq. ft.	YES
IV	Projected site traffic > 10,000 ADT **or** Proposed installation /modification of two or more traffic signals, addition of travel lanes to State Highway or proposed modification of freeway interchange, regardless of project size	Single Family Apartment Lodging General Office Retail	> 1,000 units > 1,500 units > 1,100 occupied rooms > 900,000 square feet > 230,000 square feet	YES

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Permit Level / Traffic Study level I

Project ADT < 100 trips.
No proposed modifications to traffic signals or roadway elements or geometry.

The traffic study shall, at a minimum, incorporate traffic engineering principles and standards as presented in the State Highway Access Management Rule, Department standards, and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Region Permits officer and/or the Region Traffic Engineer determine the need and requirements for a traffic impact study.

1. Study Area.
   Defined by Region Permits Officer and/or Region Traffic Engineer.
   The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.

   Study area may be limited to or include property frontage and include neighboring and adjacent parcels. Identify site, cross, and next adjacent up and down stream access points within access category distance of property boundaries.

2. Design year.
   Opening day of project.
3. Analysis Conditions and Period
   Identify site traffic volumes and characteristics.
   Identify adjacent street(s) traffic volume and characteristics.
4. Identify right-of-way, geometric boundaries and physical conflicts.
   Investigate existence of federal or state, no access or limited access control line.
5. Generate access point capacity analysis as necessary.
   Analyze site and adjacent road traffic for the following time periods: weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (per roadway peak and site peak).
6. Design and Mitigation.
   Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate state highway access category.

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Permit Level / Traffic Study Level II

The traffic study shall, at a minimum, incorporate traffic engineering principles and standards as presented in the State Highway Access Management Rule, Department standards, and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Region Permits officer and/or the Region Traffic Engineer determine the need and requirements for a traffic impact study.

Project ADT 100 to 500 trips.

1. Study Area.
   Defined by Region Permits Officer or Region Traffic Engineer.
   The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.

   Intersection of site access drives with state highways and any signalized and unsignalized intersection within access category distance of property line. Include any identified queuing distance at site and study intersections

2. Design Year.
   Opening day of project.
3. Analysis Period.
   Identify site and adjacent road traffic for weekday A.M. and P.M. peak hours.
4. Data Collection
   Identify site and adjacent street roadway and intersection geometries.
   Identify adjacent street(s) traffic volume and characteristics.
5. Conflict / Capacity Analysis
   Diagram flow of traffic at access point(s) for site and adjacent development.
   Perform capacity analysis as determined by Region Traffic Engineer.
6. Right-of-Way Access
   Identify right-of-way, geometric boundaries and physical conflicts. Investigate existence of federal or state, no access or limited access control line.
7. Design and Mitigation
   Determine and document safe and efficient operational design needs based on site and study area data. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate state highway access category.

Project ADT 500 to 3,000 trips or peak hour < 500 trips.

Any proposed modification to traffic signals or roadway elements or geometry.

1. Study Area.
   Defined by Region Permits Officer or Region Traffic Engineer.
   The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary. An acceptable traffic study boundary, based on travel time, may be identified as a ten or twenty minute travel time or even by market area influence.

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Intersection of site access drives with state highways and any signalized and unsignalized intersection within access category distance of property line. Include any identified queuing distance at site and study intersections.

2. Design Year.
   Opening day of project and five year after project completion. Document and include all phases of development (includes out pad parcels).
3. Analysis Period.
   Analyze site and adjacent road traffic for weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (adjacent roadway peak and site peak).
4. Data Collection
   a. Daily and Turning Movement counts.
   b. Identify site and adjacent street roadway and intersection geometries.
   c. Traffic control devices including traffic signals and regulatory signs.
   d. Traffic accident data
5. Trip Generation.
   Use equations or rates available in latest edition of ITE Trip Generation. Where developed equations are unavailable for intended land use, perform trip rate study and estimation following ITE procedures or develop justified trip rate agreed to by the Department.
6. Trip Distribution and Assignment
   Document distribution and assignment of existing, site, background, and future traffic volumes on surrounding network of study area.
7. Conflict / Capacity Analysis.
   Diagram flow of traffic at access point(s) for site and adjacent development.
   Perform capacity analysis for daily and peak hour volumes
8. Traffic Signal Impacts. For modified and proposed traffic signals:
   a. Traffic Signal Warrants as identified.
   b. Traffic Signal drawings as identified.
   c. Queuing Analysis
9. Right-of-Way Access
   Identify right-of-way, geometric boundaries and physical conflicts. Investigate existence of federal or state, no access or limited access control line.
10. Design and Mitigation.
    Determine and document safe and efficient operational design needs based on site and study area data. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate state highway access category.

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Permit Level / Traffic Study Level III

Project ADT 3,000 to10,000 trips or peak hour traffic 500 to 1,200 trips.
Proposed installation or modification to traffic signals or roadway elements or geometry, regardless of project size or trip generation.

The traffic study shall, at a minimum, incorporate traffic engineering principles and standards as presented in the State Highway Access Management Rule, Department standards, and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Region Permits officer and/or the Region Traffic Engineer determine the need and requirements for a traffic impact study.

1. Study Area.
   Defined by Region Permits Officer or Region Traffic Engineer
   The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary. An acceptable traffic study boundary, based on travel time, may be identified as a ten or twenty minute travel time or even by market area influence.

   Intersection of site access drives with state highways and any intersection within 1/2 mile of property line on each side of project site.

2. Design Year.
   Opening day of project, five years and twenty years after opening. Document and include all phases of development (includes out pad parcels).
3. Analysis period.
   For each design year analyze site and adjacent road traffic for weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (adjacent roadway peak and site peak).
4. Data Collection.
   a. Daily and Turning movement counts.
   b. Identify site and adjacent street roadway and intersection geometries.
   c. Traffic control devices including traffic signals and regulatory signs.
   d. Automatic continuous traffic counts for at least 48 hours.
   e. Traffic accident data.
5. Trip Generation.
   Use equations or rates available in latest edition of ITE Trip Generation. Where developed equations are unavailable for intended land use, perform trip rate study and estimation following ITE procedures or develop justified trip rate agreed to by the Department.
6. Trip Distributions and Assignment.
   Document distribution and assignment of existing, site, background, and future traffic volumes on surrounding network of study area.
7. Capacity Analysis.
   a. Level of Service (LOS) for all intersections.
   b. LOS for existing conditions, design year without project, design year with project.
8. Traffic Signal Impacts. For proposed Traffic Signals:
   a. Traffic Signal Warrants as identified.
   b. Traffic Signal drawings as identified.

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c. Queuing Analysis.
d. Traffic Systems Analysis. Includes acceleration, deceleration and weaving.
e. Traffic Coordination Analysis

9. Right-of-Way Access
   Identify right-of-way, geometric boundaries and physical conflicts. Investigate existence of federal or state, no access or limited access control line.
10. Accident and Traffic Safety Analysis. Existing vs. as proposed development.
11. Design and Mitigation.
    Determine and document safe and efficient operational design needs based on site and study area data. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate state highway access category.

Permit Level / Traffic Study Level IV

Project ADT greater than 10,000 trips or peak hour traffic > 1,200 vehicles per hour.
Proposed installation or modification of two or more traffic signals, addition of traffic lanes or modification of freeway interchange.

The traffic study shall, at a minimum, incorporate traffic engineering principles and standards as presented in the State Highway Access Management Rule, Department standards, and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Region Permits officer and/or the Region Traffic Engineer determine the need and requirements for a traffic impact study.

1. Study Area.
   Defined by Region Permits Officer or Region Traffic Engineer
   The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary. An acceptable traffic study boundary, based on travel time, may be identified as a ten or twenty minute travel time or even by market area influence.

   Intersection of site access drives with state highways and any intersection within 1/2 mile of property line of each side of project site and any intersection or freeway interchange impacted by more than 500 peak hour trips.

2. Design Year.
   Opening day of project, five years and twenty years after opening. Document and include all phases of development (includes out pad parcels).
3. Analysis period.
   For each design year analyze site and adjacent road traffic for weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (adjacent roadway peak and site peak).
4. Data Collection.
   a. Daily and Turning movement counts.
   b. Identify site and adjacent street roadway and intersection geometries.
   c. Traffic control devices including traffic signals and regulatory signs.

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d. Automatic continuous traffic counts for at least 48 hours.
e. Traffic accident data.

5. Trip Generation
   Use equations or rates available in latest edition of ITE Trip Generation. Where developed equations are unavailable for intended land use, perform trip rate study and estimation following ITE procedures or develop justified trip rate agreed to by the Department.
6. Trip Distributions and Assignment.
   Document distribution and assignment of existing, site, background, and future traffic volumes on surrounding network of study area.
7. Capacity Analysis.
   a. Level of Service (LOS) for all intersections.
   b. LOS for existing conditions, design year without project, design year with project.
8. Traffic Signal Impacts. For proposed traffic signals:
   a. Traffic Signal Warrants as identified.
   b. Traffic Signal drawings as identified.
   c. Queuing Analysis.
   d. Traffic Systems Analysis. Includes acceleration, deceleration and weaving.
   e. Traffic Coordination Analysis.
9. Right-of-Way Access
   Identify right-of-way, geometric boundaries and physical conflicts. Investigate existence of federal or state, no access or limited access control line.
10. Accident and Traffic Safety Analysis. Existing vs. as proposed develop.
11. Design and Mitigation.
    Determine and document safe and efficient operational design needs based on site and study area data. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate state highway access category.

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STUDY AND REPORT FORMAT

The Traffic impact study should follow the recommended format below. Traffic impact studies shall be presented by a firm or individual recognized by the Department of Transportation as capable of performing a traffic analysis and when necessary, include engineered drawings based on Department standards drawings and specifications.

(1) INTRODUCTION AND SUMMARY

(2) PROPOSED PROJECT

(3) STUDY AREA CONDITIONS

(4) ANALYSIS OF EXISTING CONDITIONS

(5) PROJECTED TRAFFIC

(6) TRAFFIC ANALYSIS

(7) CONCLUSIONS

(8) RECOMMENDATIONS

(9) APPENDICES

a) Traffic Counts
b) Traffic Capacity Analysis
c) Accident Summary
d) Request for change of access (if applicable)

(10) FIGURES AND TABLES

The following items shall be documented in the study:

a) Site location – showing area roadways
b) Site Plan
   Identify geometric / physical concerns relating to area, site and specific access points. Include adjacent street and access points.
c) Existing roadway and traffic control features (number of lanes, lane widths, alignment, location of traffic signals, signs) Include off-system features as related to site plan and access point(s).
d) Existing daily volumes (directional if possible) and peak hour turning volumes. Discuss traffic characteristics (vehicle mix, % make-up and any special vehicle requirements).
e) Collision diagram summary.
f) Site generated trip summary. Discuss trip/vehicle make-up and any special vehicle requirements. Discuss trip reduction strategies if applicable.
g) Directional distribution of site generated traffic.
h) Assignment of Non-site related traffic (existing, background and future). Document both existing and committed development, and when appropriate other background planned development traffic. Assignment of total future non-site traffic for design year.
i) Assignment of Site Traffic
j) Traffic Capacity Analysis
   Projected levels of service without the project – coincide with development phase years.
   Projected levels of service with the project (by development phase years)
   Recommended mitigation / improvement

(Scaled schematic drawings illustrating alignment, number of lanes, lane widths, signing, pavement markings. If traffic signal modifications are proposed, signal phasing, signal head locations, lane marking shall be shown.)

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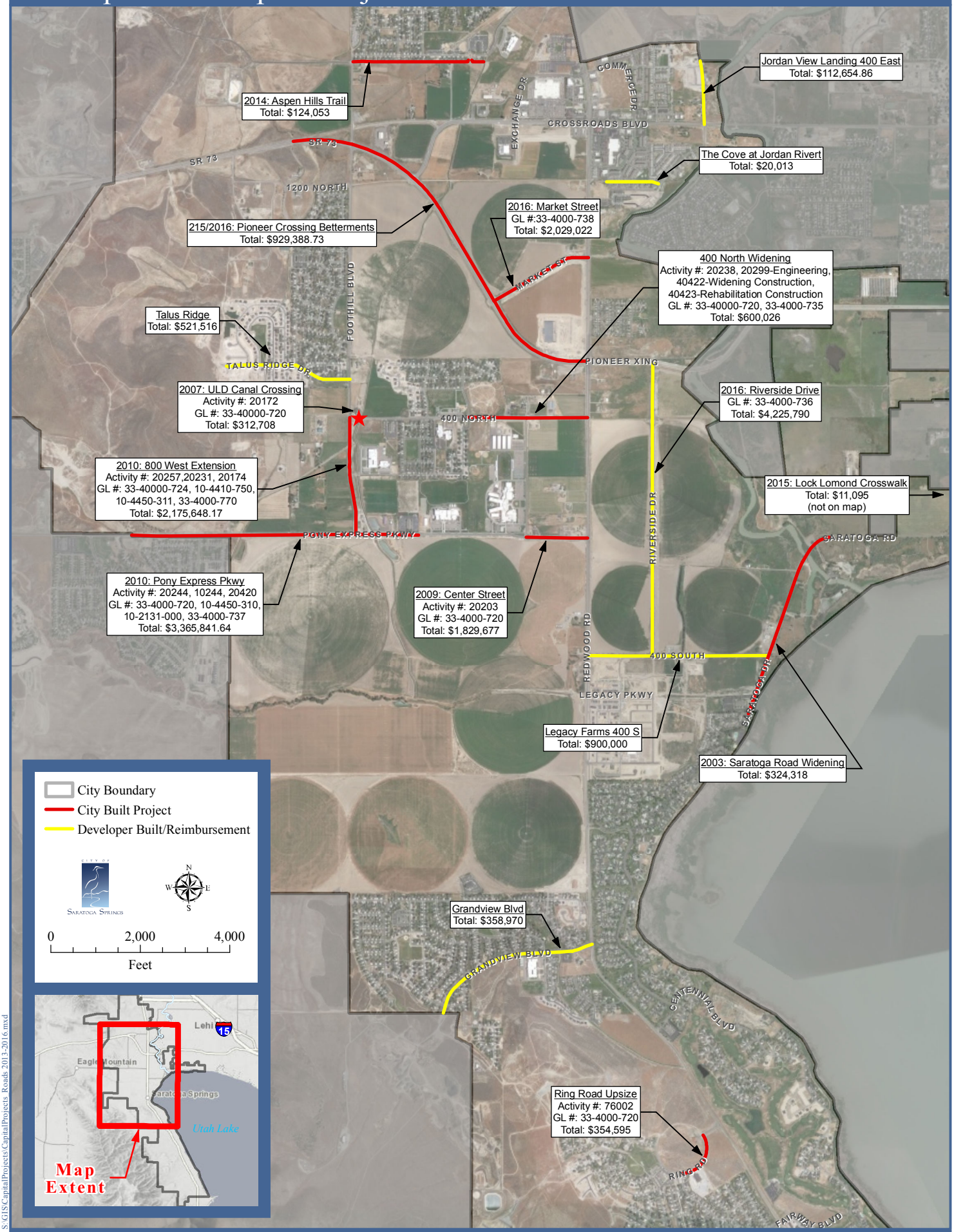
Transportation Capital Projects 2013-Present



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29 November 2016

ORDINANCE NO. 17-2 (1-3-17)

AN ORDINANCE OF THE CITY OF SARATOGA SPRINGS, UTAH, AMENDING THE TRANSPORTATION MASTER PLAN OF THE GENERAL PLAN; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, Utah Code Chapter 10-9-403 allows municipalities to update and amend elements of the general plan; and

WHEREAS, the City's Development Review Committee has found a need to update the Transportation Master Plan, an element of the General Plan, due to changes in the alignment of planned roadways throughout the City and the region; and

WHEREAS, the Planning Commission held a public hearing after proper notice and publication to consider the proposed update of the Transportation Master Plan and forwarded a positive recommendation; and

WHEREAS, on November 15, 2016, the City Council held a public hearing after proper notice and publication to consider the proposed amendments; and

WHEREAS, after due consideration, and after proper notice, and after conducting the requisite public hearings, the City Council has determined that it is in the best interests of the residents of the City of Saratoga Springs that amendments to the Transportation Master Plan, an element of the General Plan, be made.

NOW THEREFORE, the City Council hereby ordains as follows:

SECTION I – ENACTMENT

The City of Saratoga Springs does hereby adopt the attached amended Transportation Master Plan as part of the General Plan.

SECTION II – AMENDMENT OF CONFLICTING ORDINANCES

If any ordinances, resolutions, policies, or maps of the City of Saratoga Springs heretofore adopted are inconsistent herewith they are hereby amended to comply with the provisions hereof. If they cannot be amended to comply with the provisions hereof, they are hereby repealed.

SECTION III – EFFECTIVE DATE

This ordinance shall take effect upon its passage by a majority vote of the Saratoga Springs City Council and following notice and publication as required by the Utah Code.

SECTION IV – SEVERABILITY

If any section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance.

SECTION V – PUBLIC NOTICE

The Saratoga Springs Recorder is hereby ordered, in accordance with the requirements of Utah Code § 10-3-710—711, to do as follows:

a. deposit a copy of this ordinance in the office of the City Recorder; and
b. publish notice as follows:
   i. publish a short summary of this ordinance for at least one publication in a newspaper of general circulation in the City; or
   ii. post a complete copy of this ordinance in three public places within the City.

ADOPTED AND PASSED by the City Council of the City of Saratoga Springs, Utah, this ____ day of _____, 2016.

_____
Jim Miller, Mayor

Attest: _____
Cindy LoPiccolo, City Recorder

	VOTE
Shellie Baertsch	_____
Michael McOmber	_____
Bud Poduska	_____
Chris Porter	_____
Stephen Willden	_____

RESOLUTION NO. R17-07 (1-3-17)

A RESOLUTION APPOINTING KEN KILGORE TO THE CITY OF SARATOGA SPRINGS PLANNING COMMISSION; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the City of Saratoga Springs has established a municipal Planning Commission as required by Section 10-9a-301, Utah Municipal Code; and

WHEREAS, two Planning Commission vacancies have been created through term expiration; and

WHEREAS, the Mayor is authorized to fill vacancies in the Planning Commission with the advice and consent of the City Council. The purpose of this Resolution is to make recommendation for one appointment, with consideration of the other appointment to be scheduled following interviews; and

WHEREAS, the Mayor desires and believes it to be in the best interest of the health, safety, and welfare of the residents of the City of Saratoga Springs to reappoint Ken Kilgore to the Planning Commission.

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

1. Ken Kilgore is hereby appointed to the Planning Commission to complete a four-year term beginning January 1, 2017 and ending December 31, 2020.

2. This Resolution shall take effect immediately upon passage.

Current Regular Members	*Expiration of Term*
Ken Kilgore	December 31, 2020
_____	December 31, 2020
Troy Cunningham	December 31, 2019
Sandra Steele	December 31, 2019
Kirk Wilkins	December 31, 2017
Hayden Williamson	December 31, 2017
Dave Funk	December 31, 2018

Passed this 3rd day of January, 2017.

Signed: _____
Jim Miller, Mayor

Attest: _____
Cindy LoPiccolo, City Recorder

City Council
Staff Report

Author: Jeremy D. Lapin. P.E.
Subject: Change Order #1 for Marina Pump Station
Date: January 3, 2016
Type of Item: Resolution approving Change Order #1

Description:

A. **Topic:** This item is for the approval of a Change Order for the Marina Pump Station Project to relocate the intake structure to the shoreline of the marina.

B. **Background:** On December 13, 2016 the contractor for the Marina Pump Station project, COP Construction, presented a Value Engineering (VE) proposal to the City. The VE proposal was to move the intake screen structure to the shoreline. COP Construction believed the change would provide cost savings, diminish the risk exposure of installing the intake structure in the saturated marina bed, provide lower maintenance costs by improving access to the facility and decrease the project footprint thereby lessening the impact to the marina.
The City asked the project engineer, Hansen, Allen and Luce (HAL), to evaluate COP's VE proposal and provide the City a recommendation**.** Hal provided a response on December 23rd and recommended that the City approve the VE proposal. They concurred that moving the intake structure to the shoreline would reduce the risk of unknown foundation conditions in the lake bottom, reduce potential issues with maintaining the screens by improving access, improve safety by the addition of gratings and trash racks, improve operation by allowing the use of a water level transducer and allow the project schedule to be maintained. It is also estimated that the VE proposal will provide project savings of around $50,000 - $60,000 however complete designs of the shoreline intake structure are required to determine the final value of the savings.

C. **Analysis:** The VE proposal provided by COP construction is made possible by the complete dredging of the Marina providing sufficient depth to locate the intake structure at the Shoreline. COP construction has identified, and HAL confirmed, that the change will provide many improvements including reduced risk, improved maintenance, improved safety, improved operation, maintains the project 's schedule, and provide cost savings.

D. **Fiscal Impact:** There is no cost to the City for the proposed change order which in fact is a proposed contract deduction. Not approving this change order may delay the completion of the project and/or increase the project costs due to the risks of unknown

foundation conditions and potential change orders for stabilization of the foundation in areas inundated in water.

E. **Recommendation:** Staff recommends approval of the attached Resolution approving Change Order #1 for the Marina Pump Station Project

CHANGE ORDER No. 1

Project: **City of Saratoga Springs – Marina Pump Station**
Date of Issuance: December 28, 2016

Owner: City of Saratoga Springs

Contractor: COP Construction, LLC

Owner's Rep: Shane Bennett

Contact For: Mark Edwards, Contract Manager, Saratoga Springs Capital Facilities Manager

---

You are directed to make the following changes in the Contract Documents:

Description: Relocate redesigned Intake Structure to the shoreline, delete approximately 200 feet of 42" diameter and two 6" air pipes, delete the floating dock, change 42" HDPE pipe to DR 32.5.

Purpose of Change Order: Improve functionality, improve maintenance access, and reduce risk.

Attachments: Sketch of new intake structure and redlines of drawing C-1 and PP-1. Approved CPM Schedule for the project.

Change in Contract Price: $-66,000.00

Original Contract Price: $5,318,491.02

Prior Change Orders No. NA to No. NA .

Contract Price with all approved Change Orders: $5,252,491.02

Change to CONTRACT TIME: None

The CONTRACT TIME will be increased by 0 calendar days.

The date for completion of all work will be July 14, 2017 (Incentive Date April 28, 2017 and Substantial Completion May 19, 2017).

Approvals Required:
To be effective, this order must be approved by the Federal Agency if it changes the scope or objective of the PROJECT, or as may otherwise be required by the SUPPLEMENTAL GENERAL CONDITIONS.

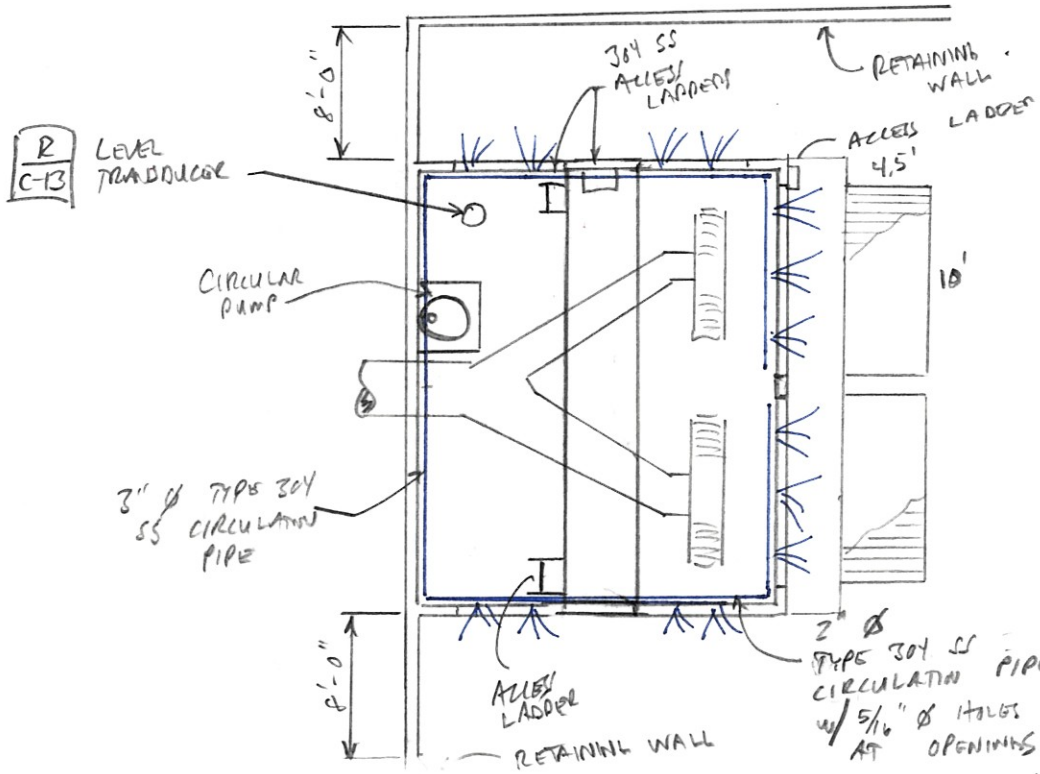
RECOMMENDED:	APPROVED:	ACCEPTED:
by_____	by_____	by_____
Project Manager	Owner	Contractor

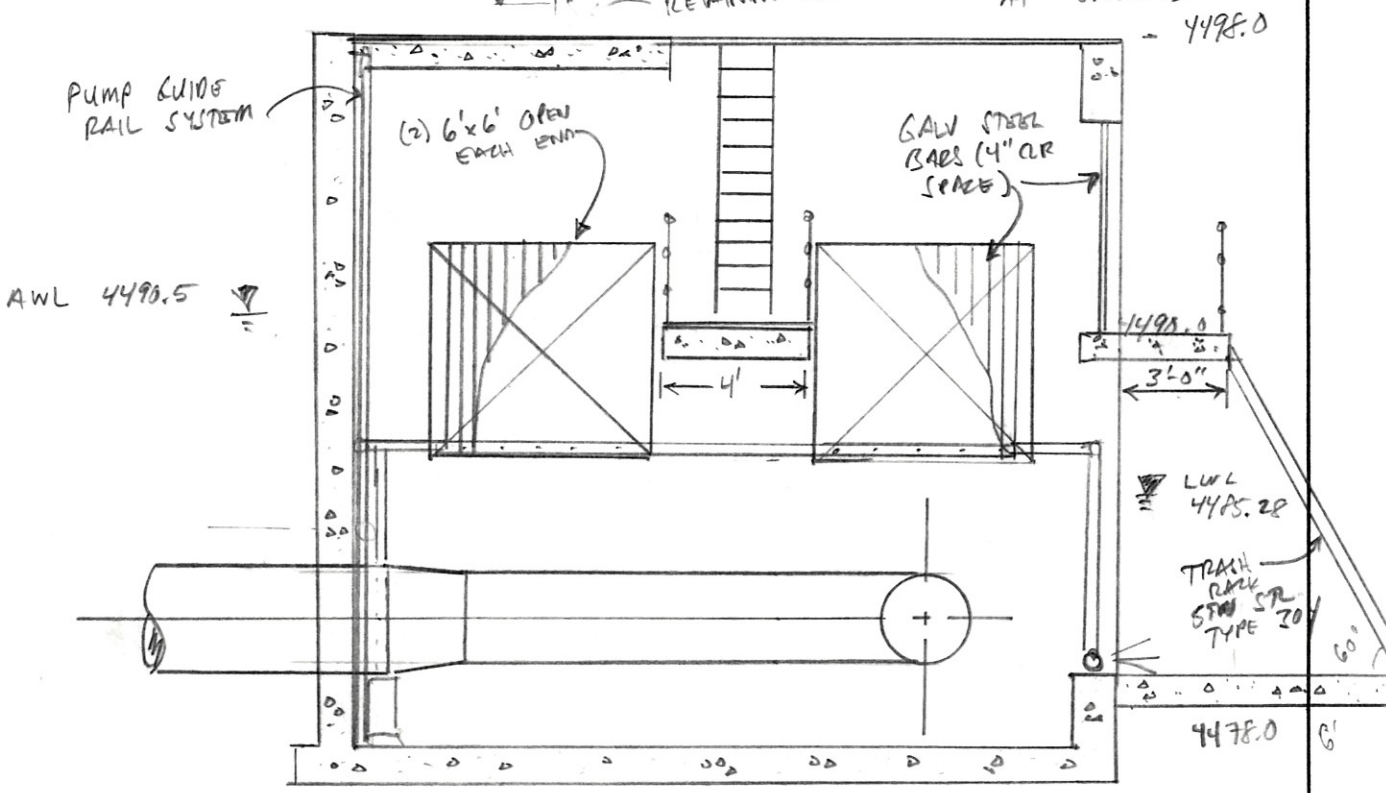
HANSEN ALLEN & LUCE inc

CLIENT: SARATOGA SPRINGS
PROJECT: MARINA PUMP STATION
FEATURE: INTAKE STRUCTURE
PROJECT NO.: 360.10.200

SHEET 1 OF 1
COMPUTED
CHECKED
DATE 12/15/16

-00034

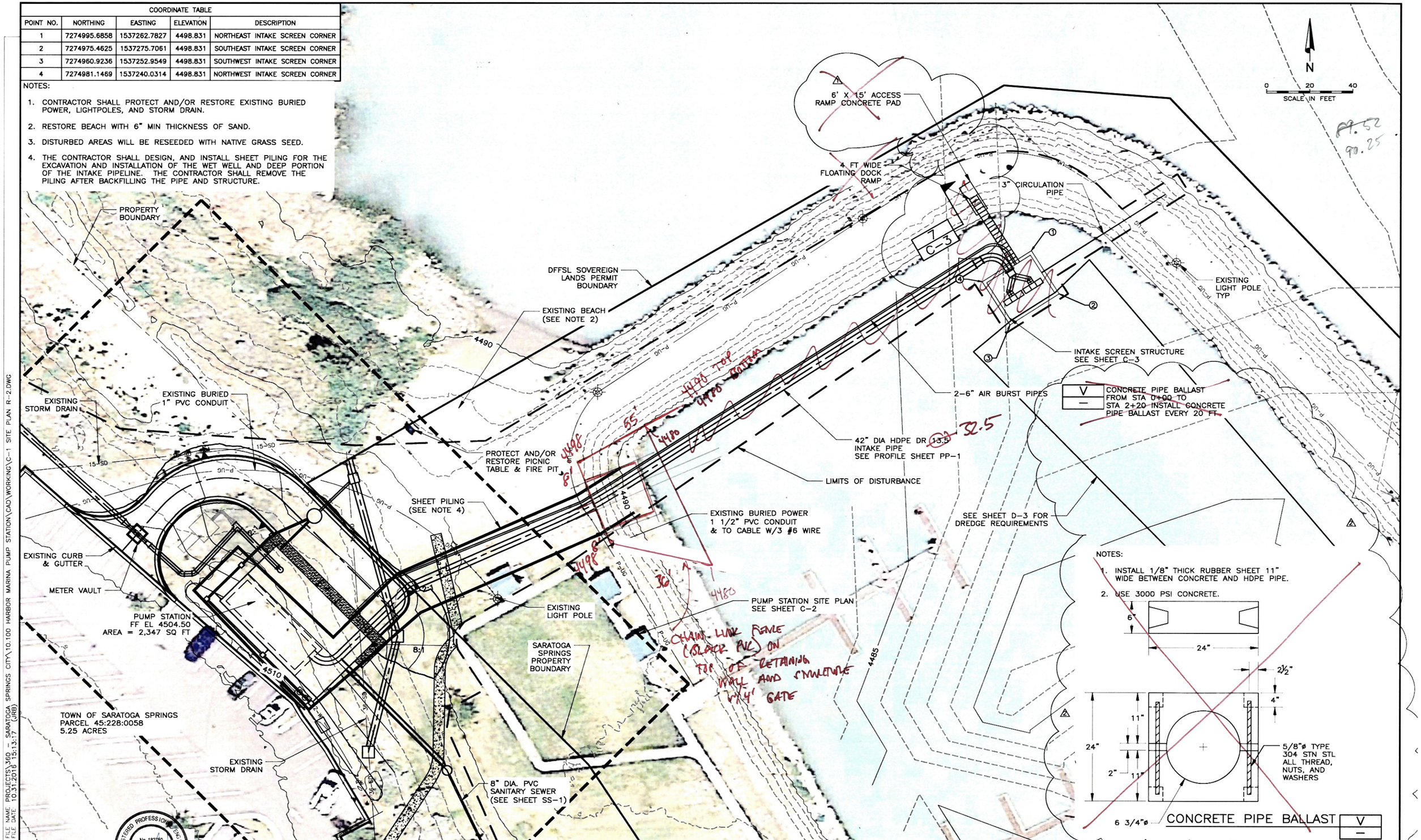




COORDINATE TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	7274995.6858	1537262.7827	4498.831	NORTHEAST INTAKE SCREEN CORNER
2	7274975.4625	1537275.7061	4498.831	SOUTHEAST INTAKE SCREEN CORNER
3	7274960.9236	1537252.9549	4498.831	SOUTHWEST INTAKE SCREEN CORNER
4	7274981.1469	1537240.0314	4498.831	NORTHWEST INTAKE SCREEN CORNER

NOTES:

1. CONTRACTOR SHALL PROTECT AND/OR RESTORE EXISTING BURIED POWER, LIGHTPOLES, AND STORM DRAIN.
2. RESTORE BEACH WITH 6" MIN THICKNESS OF SAND.
3. DISTURBED AREAS WILL BE RESEEDED WITH NATIVE GRASS SEED.
4. THE CONTRACTOR SHALL DESIGN, AND INSTALL SHEET PILING FOR THE EXCAVATION AND INSTALLATION OF THE WET WELL AND DEEP PORTION OF THE INTAKE PIPELINE. THE CONTRACTOR SHALL REMOVE THE PILING AFTER BACKFILLING THE PIPE AND STRUCTURE.



FILE NAME PROJECTS\360 - SARATOGA SPRINGS CITY\10.100 HARBOR MARINA PUMP STATION\CAD\WORKING\C-1 SITE PLAN R-2.DWG
FILE DATE 10.31.2016 15:13:17 (JRB)

HANSEN ALLEN & LUCE INC. ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS STATE OF UTAH

PROJECT ENGINEER

DESIGNED MMC	3				
DRAFTED BKC	2	10/4/16	ADDENDUM #3	JRB	MMC
CHECKED TBT	1	9/2016	ADDENDUM #1	BKC	MMC
DATE SEPTEMBER 2016	NO.	DATE	REVISIONS	BY	APVD.

SCALE AS SHOWN

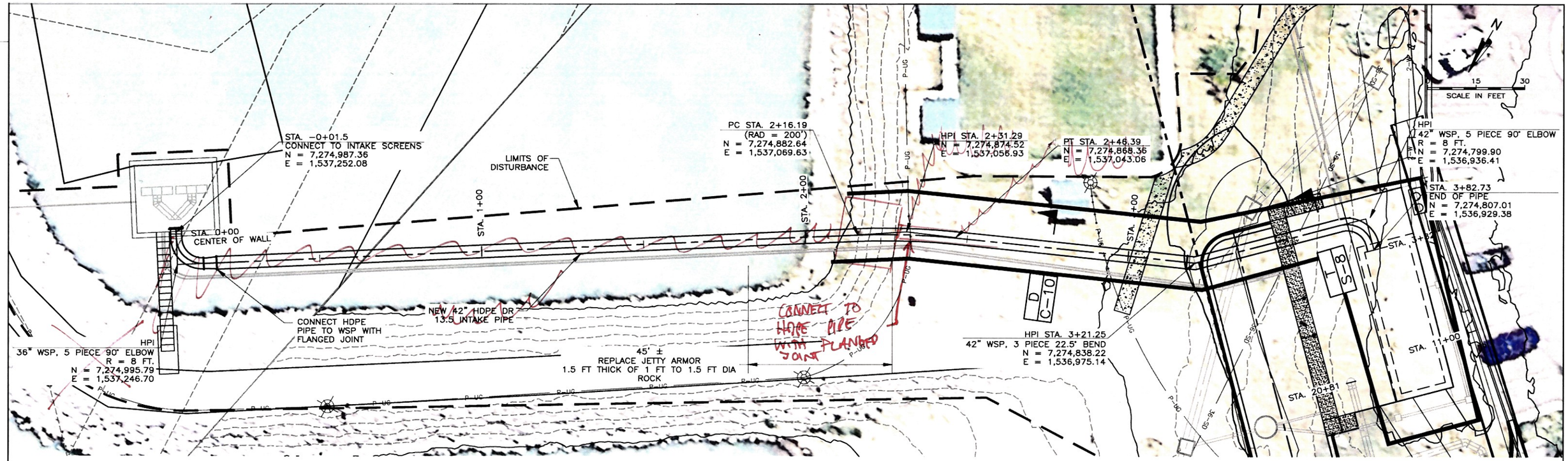
SARATOGA SPRINGS

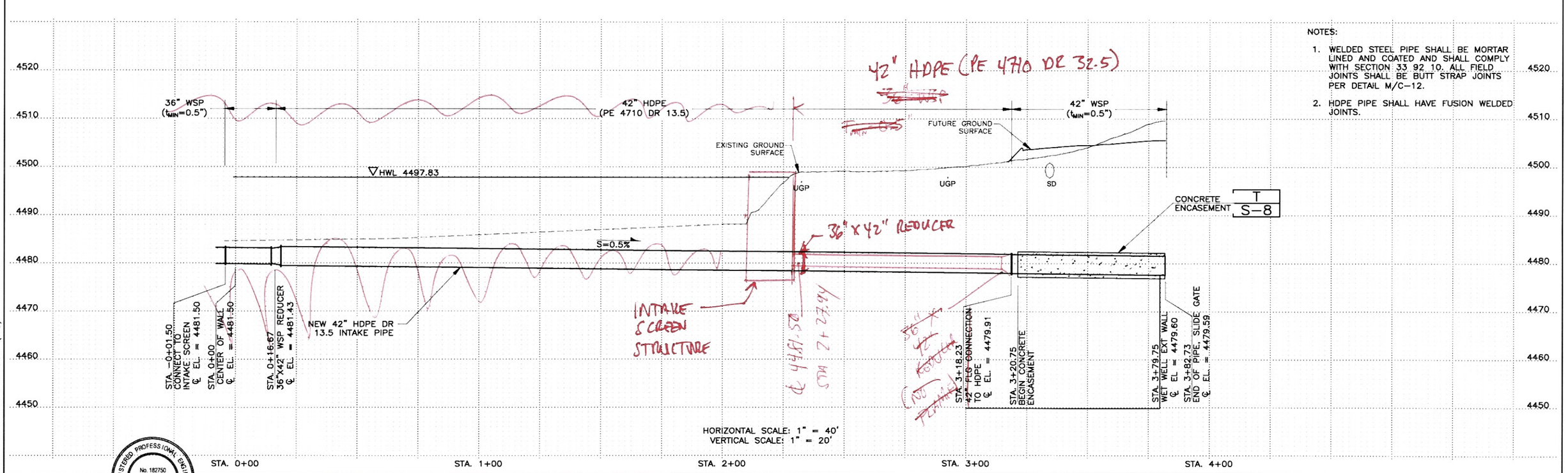
MARINA PUMP STATION
CIVIL
OVERALL SITE PLAN

SHEET C-1

360.10.100

7/04





NOTES:

1. WELDED STEEL PIPE SHALL BE MORTAR LINED AND COATED AND SHALL COMPLY WITH SECTION 33 92 10. ALL FIELD JOINTS SHALL BE BUTT STRAP JOINTS PER DETAIL M/C-12.
2. HDPE PIPE SHALL HAVE FUSION WELDED JOINTS.

FILE NAME: PROJECTS\360 - SARATOGA SPRINGS CITY\10.100 HARBOR MARINA PUMP STATION\CAD\WORKING\PP-1.DWG
FILE DATE: 11.4.2016 15:48:51 (JRB)

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M CHAMBERS STATE OF UTAH 11/4/16

HANSEN ALLEN & LUCE INC. ENGINEERS

DESIGNED JRB	3					
DRAFTED JRB	2					
CHECKED	1					
PROJECT ENGINEER	DATE AUG 2016	NO.	DATE	REVISIONS	BY	APVD.

SCALE AS SHOWN

SARATOGA SPRINGS

MARINA PUMP STATION
INTAKE PIPE PLAN AND PROFILE
STA. -0+01.5 TO STA. 3+82.73

SHEET PP-1

360.10.100

7/04

HANSEN ALLEN & LUCE inc
ENGINEERS

UTAH COUNTY OFFICE
1045 SOUTH 500 EAST, SUITE 110
AMERICAN FORK, UTAH 84003
PHONE: (801) 216-8890
FAX: (801) 216-8890
www.hansenallenluce.com

City of Saratoga Springs
Mark Christensen
1307 North Commerce Drive, Suite 200
Saratoga Springs, Utah 84005

December 23, 2016

Re: Marina Pump Station Intake Screen Structure Value Engineering Request from COP Construction

Dear Mark:

At the construction progress meeting held on 13 December 2016, COP Construction presented a Value Engineering (VE) proposal to the team. The VE proposal was to move the intake screen structure to the shoreline. COP Construction recommended the change "*because it will provide significant cost savings, diminish the risk exposure, provide lower maintenance costs, decrease the project footprint, and lessen the impact to the marina.*" (Email from Tim Maynes on 14 December 2016) In an email from Tim on 13 December, he indicated that the savings would be around $225,000.

HAL was asked to evaluate the option of moving the intake screen to the shoreline or other location. We evaluated three options which were 1) leaving the intake structure in the same location, 2) moving the structure closer to shore but still in the marina, and 3) moving the structure to the shoreline. The team met again on 15 December 2016 to discuss the options. At the meeting, HAL expressed some concerns with how the screens would function on the shoreline. We discuss some concepts that could be incorporated into the design to improve the functionality of the screens. HAL was then asked to evaluate these concepts for building the intake structure on the shoreline. We were given the direction to make a recommendation based on the following criteria and order of importance:

1) Will the screen operate the same or better
2) Will the new location and design improve maintenance
3) Will it save money

HAL developed a concept that would help improve flow into the screens and move debris away from the screens during the airburst cleaning process. The idea was presented to our internal Senior Engineers who provided feedback on the design and additional requirements to improve

maintenance access and safety around the structure. Sketches of the proposed structure and site plan were emailed to the team on 16 December 2016. COP Construction was asked to determine the approximate savings with the new design based on these sketches.

The proposed shoreline structure was discussed with the team at the progress meeting on 20 December 2016. Additional details and assumptions to be used for the cost estimate were provided to COP Construction. In an email on Wednesday afternoon (21 December 2016) from Tim Maynes, COP Construction identified that the costs savings for the proposed shoreline structure would be $46,141. In that email Tim stated his recommendation that, "*While this change does provide a costs savings, the greatest benefits to this project are the mitigation of risk in the marina, and it helps ensure the project completion within the contract dates. Additionally, it will benefit the owner in the future with maintenance, safety, and improved access in and around the marina for the boats.*"

After subsequent coordination with COP regarding the HDPE piping costs, another $18,000-$20,000 of cost savings would be realized per Tim Maynes email dated 23 December 2016. This would mean a total savings to the project of between $64,000 and $66,000.

HAL reaffirms our position that if COP Construction had started mobilization and construction activities on other portions of the project immediately after receiving the Notice to Proceed on 2 November 2016, the project could have been completed by the required completion dates. However, HAL recommends moving the intake screen structure to the shoreline for the following reasons:

1) Reduced Risk – Without the benefit of geotechnical investigations of the current intake structure site out in the marina, the design was based only on work completed near the shoreline and anecdotal reports about the foundation conditions in the lake. It appears that in the new location the structure will be constructed on a gravel layer. There is always a risk when constructing a structure without a geotechnical evaluations and this risk increases in an area inundated in water. Moving the structure reduces the risks of unknown foundation conditions and potential change orders for stabilization of the foundation.

2) Improved Maintenance – The new location will help reduce potential issues with maintaining the screens. Access to the structure with cranes and other equipment will be easier. The ability to remove and maintain the circulation pump will be improved.

3) Improved Safety – The existing structure only has a floating dock above the screens to prevent the screens from being damage by boats and other objects. The new structure allows for the use of gratings and trash racks to prevent access by the general public.

4) Improved Operation – The existing location does not allow for use of a water level transducer. It was determined that it would be subject to vandalism or not very accessible for maintenance. The new structure can incorporate a water level transducer which can be used to better manage the screens by optimizing the cleaning process based on actual headloss in the intake system. The improved water circulation system developed through this process will potentially provide better cleaning of the screens (although it could also be changed at the existing location).

5) Maintains Project Schedule – Based on the progress completed to date, we believe this item mainly benefits the contractor. However, with the reduction of risk, the potential for delays and change orders will be greatly reduced, which also benefits the City. The ability to complete the project by the agreement dates allows the City to provide secondary water to the south end of the system.

To date HAL has spent about $3,000 to evaluate this VE proposal and prepare preliminary designs for the new structure. We anticipate that it will require another $6,000 to revise the drawings for this proposed change.

Please contact me if you would like to discuss this recommendation further.

Respectfully,

HANSEN, ALLEN & LUCE, INC.

Tavis Timothy, P.E.
Principal

RESOLUTION NO. R17-08 (1-3-17)

RESOLUTION OF THE CITY OF SARATOGA SPRINGS, UTAH APPROVING CHANGE ORDER NO 1 FOR THE MARINA PUMP STATION PROJECT

WHEREAS, The City is building a secondary water pump station (Project) on the shoreline of the marina; and

WHEREAS, On December 13, 2016 the contractor for the Marina Pump Station project, COP Construction, presented a Value Engineering (VE) proposal (Change Order #1) to the City; and

WHEREAS, The project engineer, Hansen, Allen and Luce (HAL), has evaluated Change Order #1 and on December 23, 2016 recommended that the City approve the VE proposal; and

WHEREAS, The contractor has identified, and HAL confirmed, that the proposed change will provide many improvements to the project including reduced risk, improved maintenance, improved safety, improved operation, maintains the project ‘s schedule, and provide cost savings; and

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Saratoga Springs, Utah that the proposed Change Order attached as Exhibit A is approved and the Mayor is authorized to sign said Agreement. This resolution shall take effect immediately upon passage.

PASSED AND APPROVED this 3rd day of January, 2017.

City of Saratoga Springs

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

City Council
Staff Report

Author: Jeremy D. Lapin, P.E., City Engineer
Subject: 30-inch waterline upsize reimbursement with Patterson Homes
Date: January 3, 2017
Type of Item: Reimbursement Agreement

Description:

A. Topic: This item is for approval to reimburse Patterson Homes for upsizing a secondary waterline along Kern Ave in Sierra Estates Plat F from 6 inches to 30 inches.

B. Background: The City is under construction on a pump station along the Utah Lake Distributing Company (ULDC) Canal at the west end of 400 north to provide secondary water to zone 1 in the northern part of the City. A zone 1 waterline is needed to distribute water from this pump station (and future zone 1 reservoir) to zone 1 service areas. The City has evaluated several options for the alignment of this waterline and has identified a preferred alignment for the western-most portion running through Sierra Estates Plat F to get from the ULDC pump station to the church property north of Sierra Estates. Subsequent phases of this zone 1 waterline will extend this pipeline east through the Church property to connect to the existing secondary waterline at the intersection of Redwood Road and Pioneer Crossing.

C. Analysis: The upsize cost presented by Patterson's contractor is $306,150. The City also solicited a cost proposed from the ULDC pump station contractor, Vancon, which was received in the amount of $466,815.00. There will also need to be reimbursement to Patterson for the increased cost of service laterals for the remaining homes on Kern Ave which will now need to be sized for a 30-inch pipe instead of the 6-inch. This increased cost is estimated to be approximately $1,200 per service lateral for the 12 homes that will need secondary service laterals from the 30-in pipeline for an estimated total of $14,400. Therefore the total reimbursement cost will be $320,550.

D. Fiscal Impact: The reimbursement to Patterson in the amount of $306,150 is within the City's existing budget for this project which is $1,308,950 under GL # 56-4000-806.

E. Recommendation: Staff recommends that the City Council approved the attached resolution approving reimbursement with Patterson Homes in the amount of $320,550.

BID SCHEDULE

1.01 PROJECT IDENTIFICATION

A. Name: **Saratoga Springs – Sierra Estates – 30" Secondary Replacement**

B. Submitted to: The City of Saratoga Springs
1307 North Commerce Drive, Suite 200
Saratoga Springs, Utah 84045

1.02 BID SCHEDULE: SIERRA ESTATES 30-INCH SECONDARY REPLACEMENT

A. Bidder provides costs for the following items:

ITEM	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL AMOUNT
1	Mobilization/Demobilization	1	L.S.		$24,800.00
2	30" Dia. DIP (PC 350) Secondary Waterline (Includes removal of existing 8" line and fittings)	900	L.F.	$310.70	$279,630.00
3	Additional Cost for 30" Restrained Joint Piping	900	L.F.	$44.85	$40,365.00
4	Loop Existing Water Service	5	EA	$2,460.00	$12,300.00
5	30" x 8" DIP MJ Tee and Connect to Existing 8" Line	2	EA	$7,710.00	$15,420.00
6	30" Butterfly Valve (MJ)	3	EA	$14,360.00	$43,080.00
7	Disconnect Existing Secondary Service from 8" Line and Reconnect to New 30" Line	4	EA	$3,600.00	$14,400.00
8	Remove Existing Air-Vac Manhole from 8" Line and Install on New 30" Line	1	LS		$10,860.00
9	Connect to Existing 8" Line with New 30" DIP MJ Tee and 30" x 8" DIP MJ Reducer	1	LS		$11,460.00
10	Install 4" Blowoff at End of New 30" Line	1	LS		$14,500.00
SIERRA ESTATES 30-INCH SECONDARY REPLACEMENT TOTAL					**$466,815.00**

- END OF SECTION -

BID SCHEDULE

1.01 PROJECT IDENTIFICATION

A. Name: **Saratoga Springs – Sierra Estates – 30" Secondary Replacement**

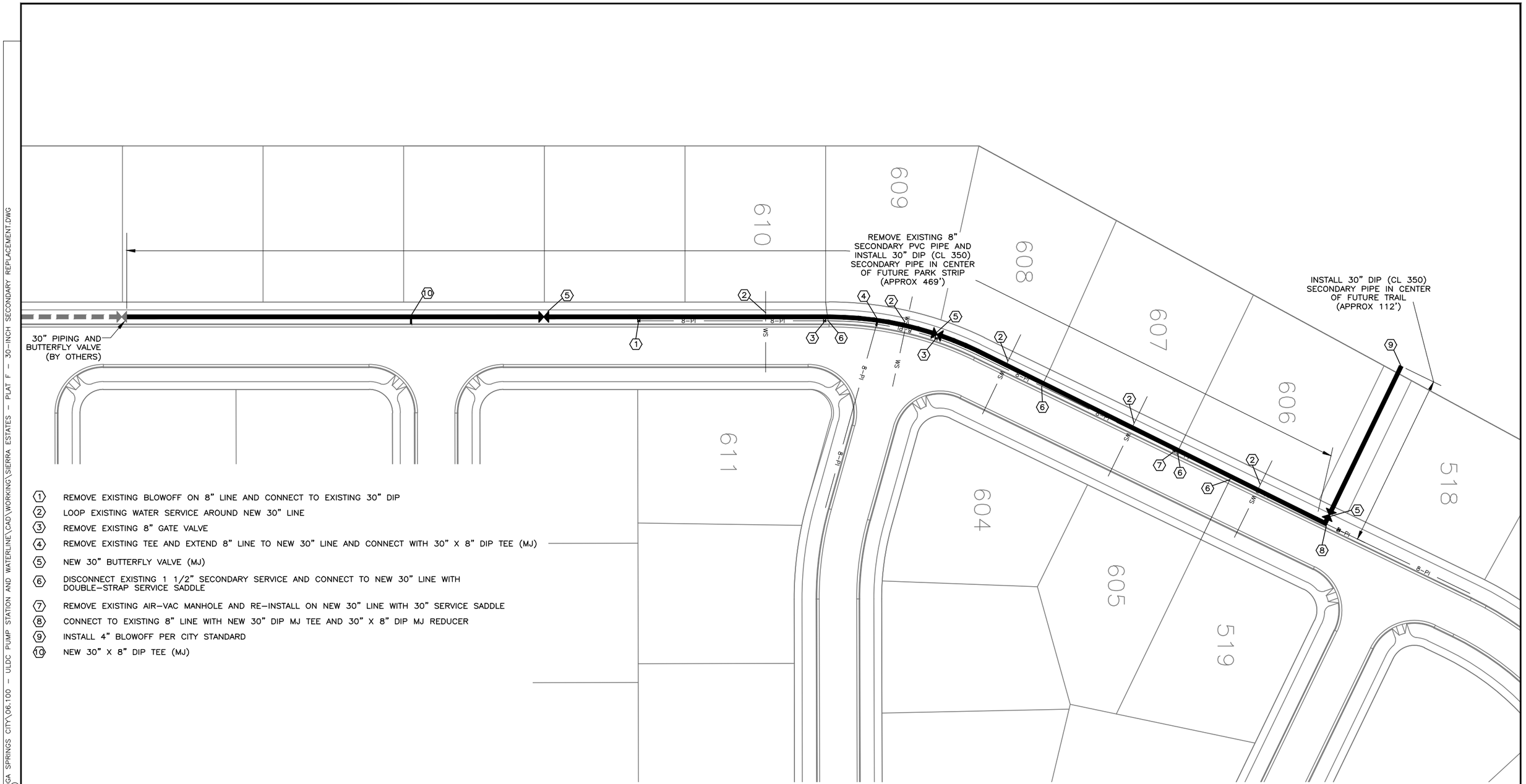
B. Submitted to: The City of Saratoga Springs
1307 North Commerce Drive, Suite 200
Saratoga Springs, Utah 84045

1.02 BID SCHEDULE: SIERRA ESTATES 30-INCH SECONDARY REPLACEMENT

A. Bidder provides costs for the following items:

ITEM	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL AMOUNT
1	Mobilization/Demobilization	1	L.S.		$5,000.00
2	30" Dia. DIP (PC 350) Secondary Waterline (Includes removal of existing 8" line and fittings)	900	L.F.	$186.00	$167,400.00
3	Additional Cost for 30" Restrained Joint Piping	900	L.F.	$20.00	$18,000.00
4	Loop Existing Water Service	5	EA	$550.00	$2,750.00
5	30" x 8" DIP MJ Tee and Connect to Existing 8" Line	2	EA	$15,000.00	$30,000.00
6	30" Butterfly Valve (MJ)	3	EA	$16,000.00	$48,000.00
7	Disconnect Existing Secondary Service from 8" Line and Reconnect to New 30" Line	4	EA	$2,000.00	$8,000.00
8	Remove Existing Air-Vac Manhole from 8" Line and Install on New 30" Line	1	LS		$3,000.00
9	Connect to Existing 8" Line with New 30" DIP MJ Tee and 30" x 8" DIP MJ Reducer	1	LS		$15,000.00
10	Install 4" Blowoff at End of New 30" Line	1	LS		$9,000.00
SIERRA ESTATES 30-INCH SECONDARY REPLACEMENT TOTAL					**$306,150.00**

- END OF SECTION -



1. REMOVE EXISTING BLOWOFF ON 8" LINE AND CONNECT TO EXISTING 30" DIP
2. LOOP EXISTING WATER SERVICE AROUND NEW 30" LINE
3. REMOVE EXISTING 8" GATE VALVE
4. REMOVE EXISTING TEE AND EXTEND 8" LINE TO NEW 30" LINE AND CONNECT WITH 30" X 8" DIP TEE (MJ)
5. NEW 30" BUTTERFLY VALVE (MJ)
6. DISCONNECT EXISTING 1 1/2" SECONDARY SERVICE AND CONNECT TO NEW 30" LINE WITH DOUBLE-STRAP SERVICE SADDLE
7. REMOVE EXISTING AIR-VAC MANHOLE AND RE-INSTALL ON NEW 30" LINE WITH 30" SERVICE SADDLE
8. CONNECT TO EXISTING 8" LINE WITH NEW 30" DIP MJ TEE AND 30" X 8" DIP MJ REDUCER
9. INSTALL 4" BLOWOFF PER CITY STANDARD
10. NEW 30" X 8" DIP TEE (MJ)

NOTES:

1. MINIMUM COVER OVER TOP OF PIPE SHALL BE 3', UNLESS INDICATED OTHERWISE.
2. THE MINIMUM SLOPE OF THE WATERLINE SHALL BE 0.3% WITH NO LOCAL HIGH POINTS EXCEPT AS INDICATED ON THE DRAWINGS.
3. CONTRACTOR SHALL POT HOLE UTILITIES AT ALL CROSSINGS SUFFICIENTLY IN ADVANCE OF LAYING PIPE TO ALLOW FOR ADJUSTMENTS OF NEW PIPELINE GRADE TO AVOID CONFLICTS.
4. DEFLECTIONS IN DIP JOINTS SHALL NOT EXCEED 3.0 DEGREES, PVC JOINTS SHALL NOT EXCEED 1.0 DEGREE, OR MANUFACTURER'S PUBLISHED DEFLECTION.

PROGRESS PRINT
1.3.2017
DATE
Not to be used for construction.
Hansen, Allen, & Luce, Inc.
Consultants/Engineers

HANSEN ALLEN & LUCE inc ENGINEERS

PROJECT ENGINEER

DESIGNED JEB	3				
DRAFTED JEB	2				
CHECKED TBT	1				
DATE DECEMBER 2016	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

CITY OF SARATOGA SPRINGS

SIERRA ESTATES

30" SECONDARY REPLACEMENT

SHEET 1

360.06.300

FILE NAME: PROJECTS\360 - SARATOGA SPRINGS CITY\06.100 - ULDC PUMP STATION AND WATERLINE\CAD\WORKING\SIERRA ESTATES - PLAT F - 30-INCH SECONDARY REPLACEMENT.DWG
FILE DATE: 1.3.2017 09:39:31 (JEB)

7/04

RESOLUTION NO. R17-09 (1-3-17)

RESOLUTION OF THE CITY OF SARATOGA SPRINGS, UTAH APPROVING REIMBURSEMENT TO PATTERSON HOMES FOR THE UPSIZE OF THE SECONDARY WATERLINE IN SIERRA ESTATES PLAT F FOR THE CITY'S NORTH ZONE 1 WATERLINE

WHEREAS, The City is building a secondary water pump station (Project) on the shoreline of the marina; and

WHEREAS, A Zone 1 waterline is needed to distribute water from this pump station (and a future zone 1 reservoir) to zone 1 service areas in the northern part of the City; and

WHEREAS, The City has evaluated several options for the alignment of this waterline and has identified a preferred alignment for the western-most portion running through Sierra Estates Plat F to get from the ULDC pump station to the church property north of Sierra Estates; and

WHEREAS, Patterson Homes has agreed to upsize the secondary waterline in Sierra Estates Plat F in Kern Avenue contingent upon the City's agreement to reimburse them for the increase cost; and

WHEREAS, The City has also solicited bids for this portion of waterline from other contractors and found the cost provided by Patterson Homes to be competitive and reasonable;

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Saratoga Springs, Utah that the proposed Reimbursement is approved and the City Manager is authorized to sign and enter into said Agreement. This resolution shall take effect immediately upon passage.

PASSED AND APPROVED this 3rd day of January, 2017.

City of Saratoga Springs

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

City Council
Staff Report

Author: Jeremy D. Lapin. P.E.
Subject: Change Order #1 for ULDC Pump Station
Date: January 3, 2016
Type of Item: Resolution approving Change Order #1

Description:

A. **Topic:** This item is for the approval of a Change Order with for the Utah Lake Distributing Canal Pump Station Project to increase the size of the secondary waterline to 30-inches.

B. **Background:** The City is under construction on a pump station along the Utah Lake Distributing Company (ULDC) Canal at the west end of 400 north to provide secondary water to zone 1 in the northern part of the City. A zone 1 waterline is needed to distribute water from this pump station (and future zone 1 reservoir) to zone 1 service areas. The City has evaluated several options for the alignment of this waterline and has identified a preferred alignment for the western-most portion running through Sierra Estates to get from the ULDC pump station to the church property north of Sierra Estates. Subsequent phases of this zone 1 waterline will extend this pipeline east through the Church property to connect to the existing secondary waterline at the intersection of Redwood Road and Pioneer Crossing.

C. **Analysis:** The upsize cost presented by the ULDC pump station contractor, Vancon, is $218,545.78

D. **Fiscal Impact:** The proposed Change Order is within the City's existing budget for this project which is $1,308,950 under GL # 56-4000-806.

E. **Recommendation:** Staff recommends that the City Council approved the attached resolution approving Change Order #1 in the amount of $218,545.78

BID SCHEDULE

1.01 PROJECT IDENTIFICATION

A. Name: **Saratoga Springs – ULDC Pond, Pump Station and Waterline**

B. Submitted to: The City of Saratoga Springs
1307 North Commerce Drive, Suite 200
Saratoga Springs, Utah 84045

1.02 BID SCHEDULE: 30-INCH WATERLINE UPSIZE

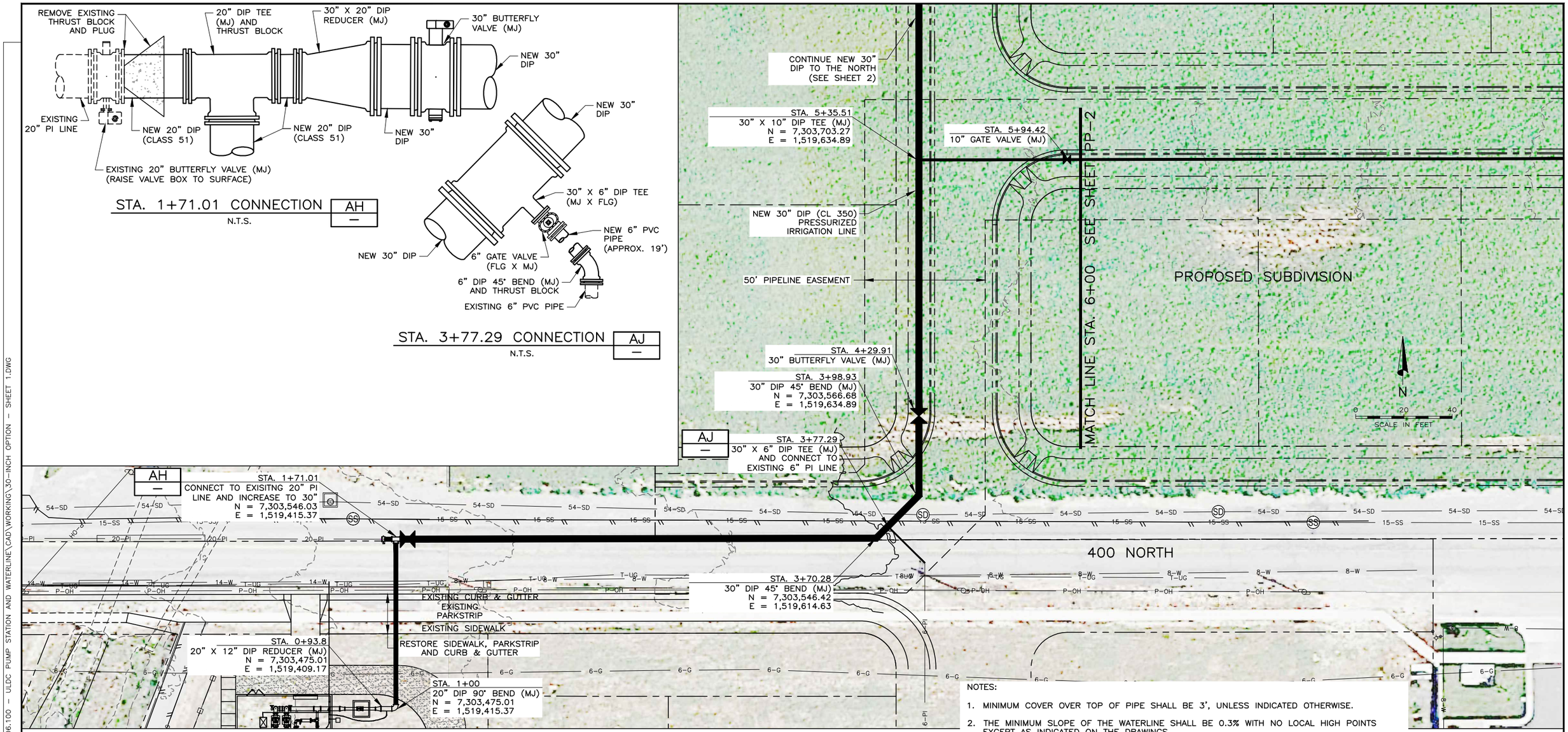
A. Bidder provides costs for the following items: Vancon

ITEM	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL AMOUNT
1	Increase to Mobilization/Demobilization	1	L.S.		$ 25700.00
2	30" Dia. DIP (PC 350) Secondary Waterline	750	L.F.	$ 299.12	$ 224,340.00
3	Additional Cost for 30" Restrained Joint Piping	300	L.F.	$ 44.70	$ 13410.00
4	Revised Sta. 1+71.01 Connection	1	L.S.		$ 16050.00
5	Revised Sta. 3+77.29 Connection	1	L.S.		$ 11810.00
6	30" x 10" MJ Tee at Sta. 5+35.51	1	L.S.		$ 13,710.00
7	30" Butterfly Valve (MJ)	4 ~~3~~	EA	$ 13,600.00	$ 54,400.00
8	30" x 8" DIP MJ Tee w/ 8" Plug	1	EA.	$ 7,180.00	$ 7,180.00
9	30" DIP 45-Deg MJ Bends	2	EA.	$ 5000.00	$ 10,000.00
10	Credit for 10" DIP 45-Deg MJ Bends	2	EA	($ 954.00)	($ 1,908.00)
11	Credit for 10" MJ Tee at Sta. 5+35	1	L.S.		($ 2270.00)
12	Credit for 10" Piping (Bid Item 24)	359	L.F.	($55)	($19,745)
13	Credit for Sta. 1+71 Connection (Bid Item 25)	1	L.S.		($10,000)
14	Credit for Sta. 3+77 Connection (Bid Item 25)	1	L.S.		($5,400)
	30-INCH WATERLINE UPSIZE TOTAL				$ 336,757.00

- END OF SECTION -

STA. 1+71.01 CONNECTION AH
N.T.S.

STA. 3+77.29 CONNECTION AJ
N.T.S.



NOTES:

1. MINIMUM COVER OVER TOP OF PIPE SHALL BE 3', UNLESS INDICATED OTHERWISE.
2. THE MINIMUM SLOPE OF THE WATERLINE SHALL BE 0.3% WITH NO LOCAL HIGH POINTS EXCEPT AS INDICATED ON THE DRAWINGS.
3. CONTRACTOR SHALL POT HOLE UTILITIES AT ALL CROSSINGS SUFFICIENTLY IN ADVANCE OF LAYING PIPE TO ALLOW FOR ADJUSTMENTS OF NEW PIPELINE GRADE TO AVOID CONFLICTS.
4. DEFLECTIONS IN DIP JOINTS SHALL NOT EXCEED 3.0 DEGREES, PVC JOINTS SHALL NOT EXCEED 1.0 DEGREE, OR MANUFACTURER'S PUBLISHED DEFLECTION.

UPSIZE TO 30" DIP
(FOR COST ESTIMATING PURPOSES ONLY)

PROGRESS PRINT
12.13.2016
DATE
Not to be used for construction.
Hansen, Allen, & Luce, Inc.
Consultants/Engineers

FILE NAME: PROJECTS\360 - SARATOGA SPRINGS CITY\06.100 - ULDC PUMP STATION AND WATERLINE\CAD\WORKING\30-INCH OPTION - SHEET 1.DWG
FILE DATE: 12.13.2016 15:26:36 (JEB)

HANSEN ALLEN & LUCE inc ENGINEERS

PROJECT ENGINEER

DESIGNED JEB	3				
DRAFTED JRB	2				
CHECKED TBT	1				
DATE OCTOBER 2016	NO.	DATE	REVISIONS	BY	APVD.

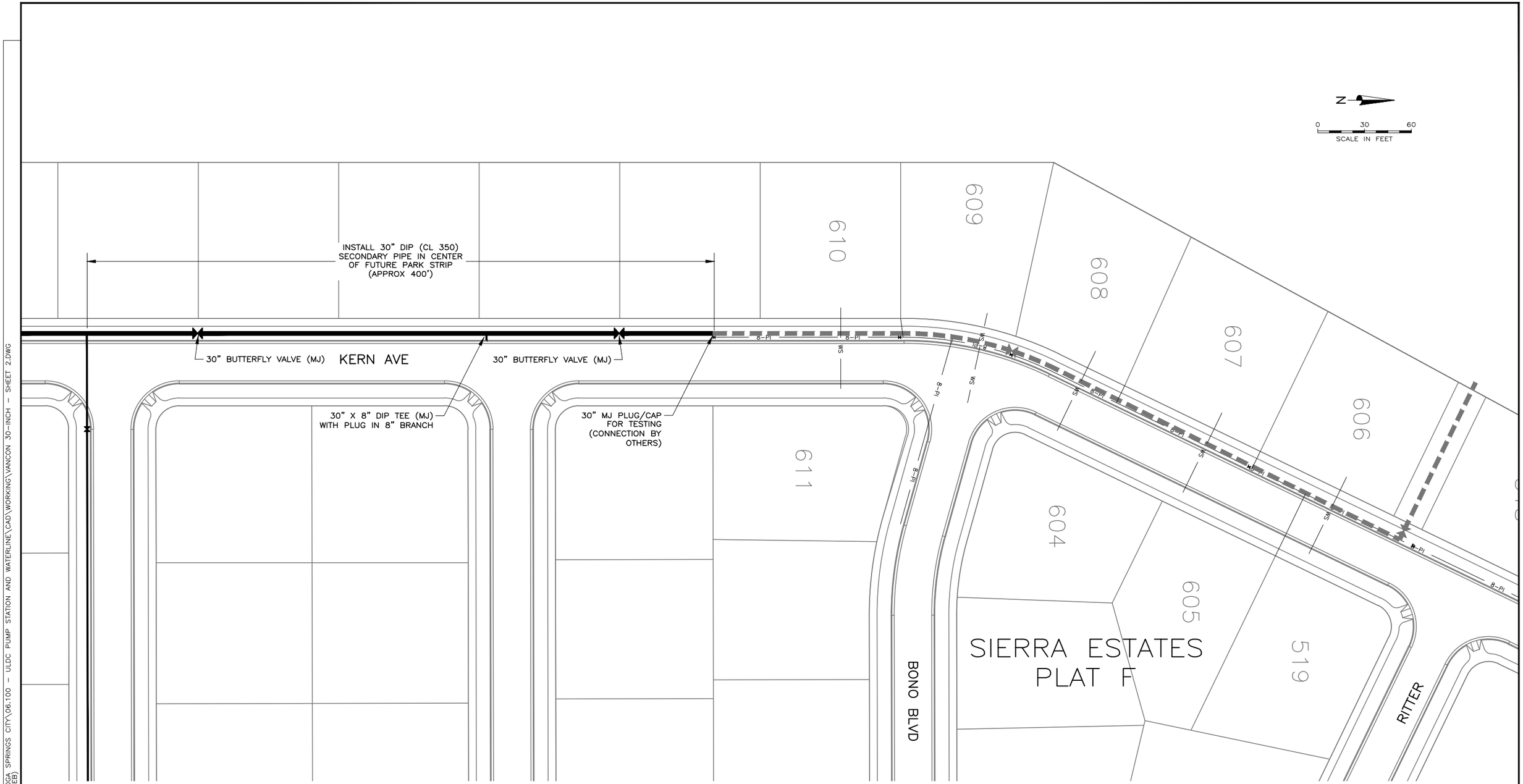
SCALE AS SHOWN

CITY OF SARATOGA SPRINGS

ULDC POND, PUMP STATION AND WATERLINE
PLAN AND PROFILE
STA. 1+00 TO STA. 6+00

SHEET PP-1
360.06.300

7/04



NOTES:

1. MINIMUM COVER OVER TOP OF PIPE SHALL BE 3', UNLESS INDICATED OTHERWISE.
2. THE MINIMUM SLOPE OF THE WATERLINE SHALL BE 0.3% WITH NO LOCAL HIGH POINTS EXCEPT AS INDICATED ON THE DRAWINGS.
3. CONTRACTOR SHALL POT HOLE UTILITIES AT ALL CROSSINGS SUFFICIENTLY IN ADVANCE OF LAYING PIPE TO ALLOW FOR ADJUSTMENTS OF NEW PIPELINE GRADE TO AVOID CONFLICTS.
4. DEFLECTIONS IN DIP JOINTS SHALL NOT EXCEED 3.0 DEGREES, PVC JOINTS SHALL NOT EXCEED 1.0 DEGREE, OR MANUFACTURER'S PUBLISHED DEFLECTION.

PROGRESS PRINT
12.14.2016
DATE
Not to be used for construction.
Hansen, Allen, & Luce, Inc.
Consultants/Engineers

FILE NAME: PROJECTS\360 - SARATOGA SPRINGS CITY\06.100 - ULDC PUMP STATION AND WATERLINE\CAD\WORKING\VANCON 30-INCH - SHEET 2.DWG
FILE DATE: 12.14.2016 08:51:47 (JEB)

HANSEN ALLEN & LUCE inc ENGINEERS

PROJECT ENGINEER

DESIGNED	JEB
DRAFTED	JRB
CHECKED	TBT
DATE	OCTOBER 2016

NO.	DATE	REVISIONS	BY	APVD.
3				
2				
1				

SCALE AS SHOWN

CITY OF SARATOGA SPRINGS

ULDC POND, PUMP STATION AND WATERLINE
SIERRA ESTATES
30" SECONDARY EXTENSION

SHEET 2

360.06.300

7/04

CHANGE ORDER No. 1

Project: **City of Saratoga Springs – ULDC Pond, Pump Station and Waterline**

Date of Issuance: 1/3/17

Owner: City of Saratoga Springs

Contractor: Vancon, Inc.

Owner's Rep: Jeremy Lapin, PE, City Engineer

You are directed to make the following changes in the Contract Documents:

Description: Upsize the 10" waterline to 30"

Purpose of Change Order: For future Zone 1 transmission line to the north

Attachments: Bid Schedule and Revised Sheet PP-1

Change in Contract Price: $218,545.78

Original Contract Price: $1,695,214.41

Prior Change Orders No. N/A to No. N/A .

Contract Price with all approved Change Orders: $1,913,760.19

Change to CONTRACT TIME: Substantial Completion on August 15, 2015

The date for completion of all work will be **June 15, 2017 (May 15, 2017 for Incentive Bonus)**
(Date)

Approvals Required:

RECOMMENDED:	APPROVED:	ACCEPTED:
by Jason Bradford	by_____	by_____
Engineer	Owner	Contractor

BID SCHEDULE

1.01 PROJECT IDENTIFICATION

A. Name: **Saratoga Springs – ULDC Pond, Pump Station and Waterline**

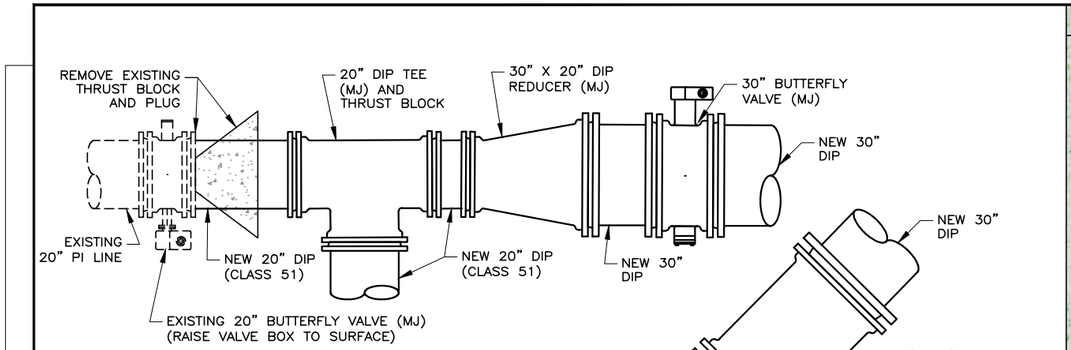
B. Submitted to: The City of Saratoga Springs
1307 North Commerce Drive, Suite 200
Saratoga Springs, Utah 84045

1.02 BID SCHEDULE: 30-INCH WATERLINE UPSIZE

A. Bidder provides costs for the following items:

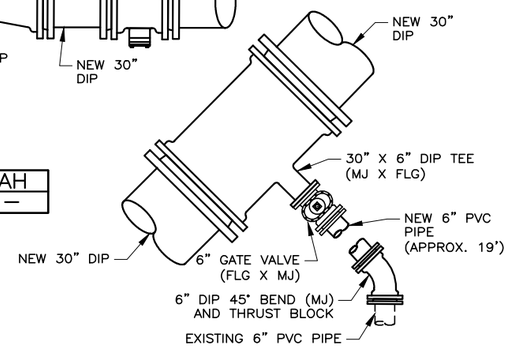
ITEM	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL AMOUNT
1	Increase to Mobilization/Demobilization	1	L.S.		$18,000.00
2	30” Dia. DIP (PC 350) Secondary Waterline	429	L.F.	$299.12	$128,322.48
3	Additional Cost for 30” Restrained Joint Piping	429	L.F.	$44.70	$19,176.30
4	Revised Sta. 1+71.01 Connection	1	L.S.		$16,050.00
5	Revised Sta. 3+77.29 Connection	1	L.S.		$11,810.00
6	30” x 10” MJ Tee at Sta. 5+35.51	1	L.S.		$13,710.00
7	30” Butterfly Valve (MJ)	3	EA	$13,600.00	$40,800.00
8	30” DIP 45-Deg MJ Bends	2	EA.	$5000.00	$10,000.00
9	Credit for 10” DIP 45-Deg MJ Bends	2	EA	($ 954.00)	($ 1,908.00)
10	Credit for 10” MJ Tee at Sta. 5+35	1	L.S.		($ 2,270.00)
11	Credit for 10” Piping (Bid Item 24)	359	L.F.	($55)	($19,745)
12	Credit for Sta. 1+71 Connection (Bid Item 25)	1	L.S.		($10,000)
13	Credit for Sta. 3+77 Connection (Bid Item 25)	1	L.S.		($5,400)
				30-INCH WATERLINE UPSIZE TOTAL	**$218,545.78**

- END OF SECTION -



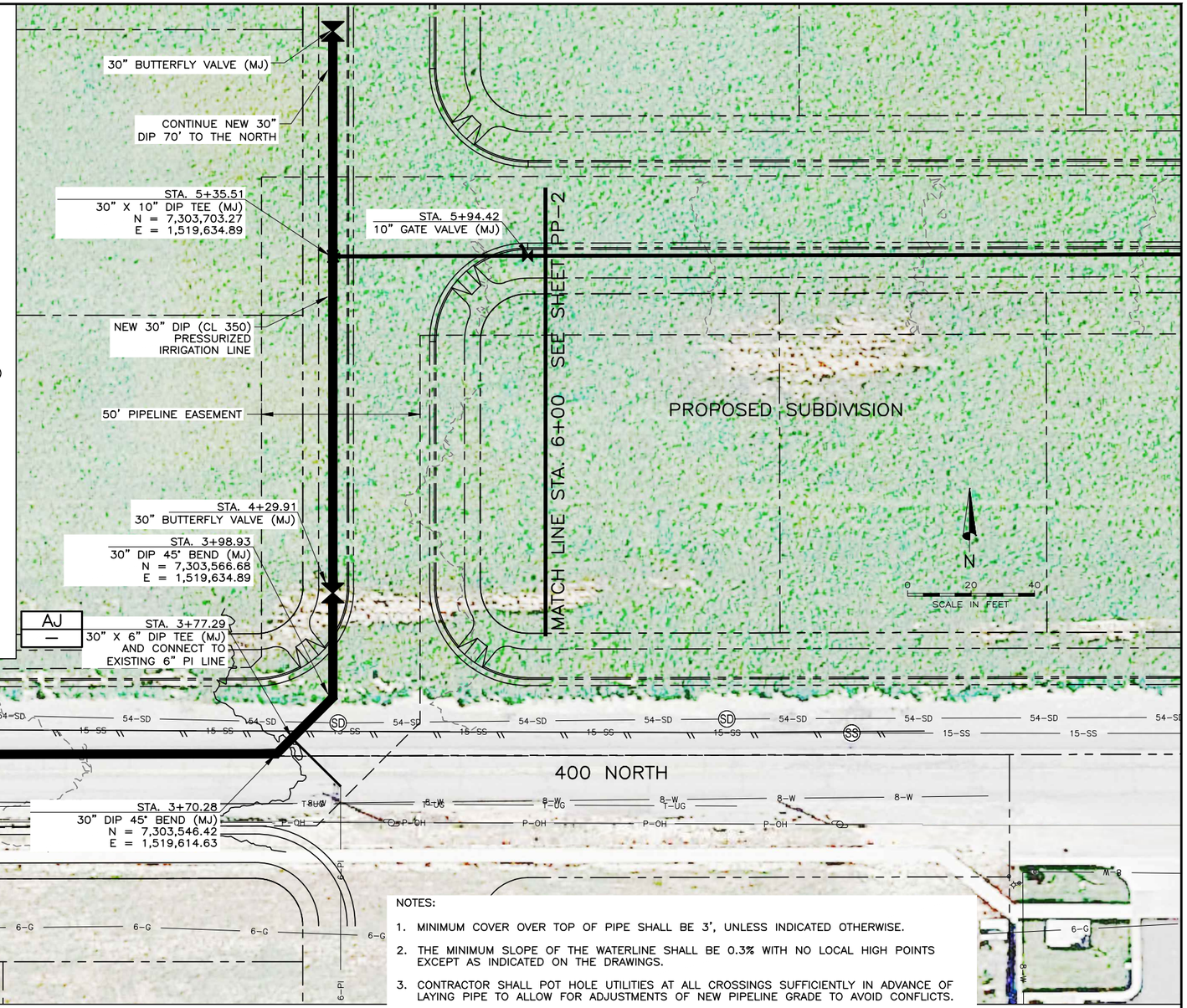
STA. 1+71.01 CONNECTION AH —

N.T.S.



STA. 3+77.29 CONNECTION AJ —

N.T.S.



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UPSIZE TO 30" DIP
(FOR COST ESTIMATING PURPOSES ONLY)

PROGRESS PRINT
1.3.2017
DATE
Not to be used for construction.
Hansen, Allen, & Luce, Inc.
Consultants/Engineers

FILE NAME: PROJECTS\360 - SARATOGA SPRINGS CITY\06.100 - ULDC PUMP STATION AND WATERLINE\CAD\WORKING\30-INCH OPTION - SHEET 1.DWG
FILE DATE: 1.3.2017 09:07:34 (JEB)

HANSEN ALLEN & LUCE inc ENGINEERS

PROJECT ENGINEER

DESIGNED JEB	3				
DRAFTED JRB	2				
CHECKED TBT	1				
DATE OCTOBER 2016	NO.	DATE	REVISIONS	BY	APVD.

SCALE AS SHOWN

CITY OF SARATOGA SPRINGS

ULDC POND, PUMP STATION AND WATERLINE
PLAN AND PROFILE
STA. 1+00 TO STA. 6+00

SHEET PP-1

360.06.300

7/04

RESOLUTION NO. R17-10 (1-3-17)

RESOLUTION OF THE CITY OF SARATOGA SPRINGS, UTAH APPROVING CHANGE ORDER NO 1 FOR THE ULDC PUMP STATION FOR THE UPSIZE OF THE SECONDARY WATERLINE IN SIERRA ESTATES FOR THE CITY'S NORTH ZONE 1 WATERLINE

WHEREAS, The City is building a secondary water pump station (Project) on the shoreline of the marina; and

WHEREAS, A Zone 1 waterline is needed to distribute water from this pump station (and a future zone 1 reservoir) to zone 1 service areas in the northern part of the City; and

WHEREAS, The City has evaluated several options for the alignment of this waterline and has identified a preferred alignment for the western-most portion running through Sierra Estates to get from the ULDC pump station to the church property north of Sierra Estates; and

WHEREAS, the Contractor has provided a Change Order cost proposal for the upsize of the secondary waterline; and

WHEREAS, The City has also solicited bids for this portion of waterline from other contractors and found the cost provided by the contractor to be competitive and reasonable;

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Saratoga Springs, Utah that the proposed Change Order attached as Exhibit A is approved and the Mayor is authorized to sign said Agreement. This resolution shall take effect immediately upon passage.

PASSED AND APPROVED this 3rd day of January, 2017.

City of Saratoga Springs

_____

Mayor Jim Miller

ATTEST:

_____

Cindy LoPiccolo, City Recorder

CITY OF SARATOGA SPRINGS
CITY COUNCIL MEETING MINUTES
Tuesday, December 6, 2016
City of Saratoga Springs City Offices
1307 North Commerce Drive, Suite 200, Saratoga Springs, Utah 84045

City Council Work Session

Present — Council Members Chris Porter, Shellie Baertsch, Michael McOmber, Stephen Willden, and Bud Poduska; Mayor Jim Miller attended via teleconference, arrived 6:25 p.m.

Staff — City Manager Mark Christensen, City Attorney Kevin Thurman, Assistant City Manager Spencer Kyle, City Recorder Cindy LoPiccolo

CLOSED SESSION:

Motion by Council Member Porter to enter into closed session 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, was seconded by Council Member McOmber
Motion carried unanimously.

Closed Session Adjourned at 6:54 p.m.

City Council Policy Meeting

Call to Order: Mayor Jim Miller called the Policy Session to order at 7:00 p.m.

Roll Call:
Present — Council Members Shellie Baertsch, Bud Poduska, Michael McOmber, Stephen Willden, and Chris Porter

Staff Present — City Manager Mark Christensen, City Attorney Kevin Thurman, Assistant City Manager Spencer Kyle, Public Relations and Economic Development Manager Owen Jackson, Police Chief Andrew Burton, Fire Chief Jess Campbell, Planning Director Kimber Gabryszak, City Engineer Gordon Miner, Public Works Director Jeremy Lapin, City Recorder Cindy LoPiccolo.

Invocation by Council Member Porter.
Pledge of Allegiance led by Council Member McOmber.

Presentation: Saratoga Springs Police Department Victim Services Program Annual Report.

Victim Services Coordinator Holly Johnson introduced Victim Services Advocate Andrea Sims, and Victims Services Grants Coordinator Detective Zach Beglarian, and reviewed grant funding revenues and program services. Detective Beglarian presented an update of the year's programs, services, and grants. Coordinator Johnson reported regarding services performed by Victims Services volunteers and staff as advocates/providers. Advocates assist victims of crime with emotional comfort, paperwork, court attendance with the victim, and obtaining necessary services for the victim, also provide information on victim rights, crime prevention, the criminal justice system, safety planning, shelter and transportation, and work to educate, raise awareness and publicize what the program offers. A victim advocate can help victims of violence with funds for counseling, medical bills and travel expenses through the Utah Office for Victims of Crime, set up to help those recover who have suffered financial loss, physical injuries and emotional trauma as a result of violent crime. All services the

program offers are confidential and free of charge. Advocate Sims reported the program currently has a team of seven volunteers and is growing; volunteer advocates help with the on call crisis phone/Domestic Violence Hotline over the weekend, at various events/booths, and noted the Library assists with promotion during Domestic Violence Awareness Week. Zach Beglarian reported task forces focusing on domestic violence are grant funded, grants are applied for and have been received with a portion going toward the Utah County domestic special victims task force involving many meetings with discussion and trainings. In response to Council Member Poduska, Chief Burton reported the year 2014 – 2015 had the largest increase in domestic violence incidents since the Police force was formed.

Mayor Miller and Council thanked the representatives for the information and their valuable service.

Public Input:

Mayor Miller invited public input.

Beth Connelly, Gables HOA Board, commented in regard to the City's notification of increased street light fees,, noted the association owns and maintains its street lights and streets and questioned what the fee would be applied to.

Rod Turner, Gables HOA President, concurred with Ms. Connelly, noted tremendous problems over the last few years in regard to water billing, they receive no City services except for water, when their development was constructed they set up to provide their own street and street light maintenance. Mayor Miller requested staff meet and provide information to the association representatives.

Matt Bunker, W. Bono Blvd., commented concerning the City of Lehi's advisement they will be discontinuing allowing non-Lehi residents participation in their sports programs, recommended working with Lehi until fields are built and teams functioning with non-resident signups following Lehi residents. Mr. Bunker reported a parking problem on Bono Blvd. in conjunction with summer youth football at Neptune Park, recommended no parking signs on Bono Blvd between 5-8 pm on weekdays during the summer. Mr. Bunker reported skaters use the stage area late nights during summer, recommended a railing to deter skaters from jumping the edge of the stage into the little kids playground. Mayor Miller requested staff follow up with signage and enforcement, and review for railing solutions incorporating nobs to deter skaters.

Reports:

Council Member Baertsch reported she attended the Lake Commission meeting and presented information to the Commission concerning the City's water project and dredging; reported she inquired about possible transfer of $250,000 grant from the future jetty to this project, and the Commission's response was they do not have a problem with that, however, follow up is needed. Council Member Baertsch reported frag mining removal was also discussed in coordination with the land team from Forestry, Fire and State Lands and there was agreement it would be a good thing to do. In response to Council Member Baertsch inquiry, Planning Director Gabryszak advised she sent an email concerning the temporary sign subcommittee meeting. Council Member Baertsch reported she attended the developers Harvest Village meeting, primary concerns were blocked views, traffic and adding another second access point onto Harvest Moon, noted there are other options, however, not as easy, pros and cons. Reported she attended the Utah Transportation Commission meeting that included tour of Eagle Mountain and Saratoga Springs, members were surprised to see the City's growth and understand what the City is dealing with, also discussed the Redwood Road and Pony Express widening projects and she thanked them for moving forward with the timetable. In response to Council Member Baertsch inquiry concerning Riverbend water lines follow up, Public Works Director Lapin reported staff met with the HOA with discussions concerning metering and billing.

City Manager Christensen reported staff will review calendar with Council to determine retreat timing.

Assistant City Manager Spencer Kyle presented an update on Timpanogo Sanitary Sewer District (TSSD) budget development and increase that was needed for bond coverage; reported several board members have asked for

budget re-review to determine rate reduction. Council Member Baertsch inquired if it would be helpful to send an official Council letter stating the City's desire to have rates reduced or be accurate; Council concurred that a letter be sent from the City Council signed by the Mayor.

Assistant City Manager Kyle clarified procedure in regard to Library calendar invitations, will adjust as Council mostly interested in community wide invites and descriptive title

BUSINESS ITEMS:

1. **Consideration for Adoption of a Resolution of the City Council of the City of Saratoga Springs, Utah, Authorizing the Issuance and Sale of Not More Than $10,000,000 Aggregate Principal Amount of Sales Tax Revenue Bonds, Series 2017, and Related Matters; Resolution R16-68 (12-6-16)**.

RESOLUTION NO. R16-68 (12-6-16)
A Resolution of the City Council of the City of Saratoga Springs, Utah (the "Issuer"), Authorizing the Issuance and Sale of Not More Than $10,000,000 Aggregate Principal Amount of Sales Tax Revenue Bonds, Series 2017, Fixing the Maximum Aggregate Principal Amount of the Bonds, the Maximum Number of Years Over Which the Bonds May Mature, the Maximum Interest Rate Which the Bonds May Bear, and the Maximum Discount from Par At Which the Bonds May Be Sold; Providing for the Publication of Notice of Public Hearing and Bonds to Be Issued; Providing for the Running of a Contest Period; and Related Matters.

City Manager Christensen introduced the parameters resolution concerning Sales Tax Revenue Bonds, Series 2017, reported the City has successfully used one of these bonds in the past and park impact fees would be the designated repayment source.

Jonathan Ward, Vice-President, Zions Public Finance, noted interest rates are moving up, reviewed the Resolution establishing broad parameters, setting the public hearing on January 3, 2017 for public comment and discussion of this matter and setting the contest period for concerns in regard to the Sales Tax Revenue Bonds.

Council Member Poduska clarified this item gives Council a direction that can be considered, however, Council may approve or disapprove. Mr. Ward responded that is correct, this is the informal starting point, and the matter will come back for public hearing giving the public the chance to voice their comments along with a resolution for consideration of authorizing the issuance and sale of the bonds, and noted the schedule is flexible if more time is needed.

In response to Council Member Baertsch's inquiry concerning the call date of 2026 and pre-payment restriction, Mr. Ward explained the intent of that call date is to limit the City's ability to prepay for ten years, however, allowing prepayment of bonds after 2026, this allows investors to buy and know they are going to keep their investment for ten years, in essence that is the intent of the call protection. He advised there are ways to refinance what has matured after 2026 by setting up escrow accounts that would make the payments until that date and then technically the bonds could come off the books, noted Council Member Willden's mention at a previous meeting the City could if there was a windfall of cash buy those bonds out of the market and then the City can determine to cancel them as the new bond holder. Council Member Baertsch inquired concerning the reason the City cannot make payment of principal and interest every six months instead of only once a year; Mr. Ward responded investors do not want their bonds paid back on a frequent basis, in some cases a City can make principal payments more often, however, this would limit your audience of interested investors and increase interest rates if there is deviation from convention. Council Member Baertsch inquired in regard to updating park impact fees and their use; City Manager Christensen responded the City has not updated its park impact fees yet, however, is moving forward with that, this will be discussed at the retreat, and noted the City needs to update all of the City's impact fees for the future.

Council Member Porter inquired if the City is using park impact fees to repay this bond inquired what funding will be available for other projects, and advised he does not want to stop building parks for twelve years to be able to pay for this. City Manager Christensen responded the City could make the payment with sales tax or

general fund revenues, and can continue to use park impact fees for projects. If there were a substantial number of park projects or the City wanted to purchase park property, that could probably be done through a General Obligation bond or something similar. He noted this got sped up because of the City being unable to participate in Lehi sports programs and there is not enough time to wait for the next GO bond cycle next November, this will be a fairly large project and there will be other funding opportunities, the City would be pledging the sales tax bond revenue, however, may not utilize those revenues if we are using park impact fees, in addition Council has the option of taking general fund reserves and using how Council sees fit. Council Member Porter commented essentially we want to continue building parks out of the remainder of the budget, he has made himself clear on several occasions how he feels about this, has spent a lot of time working on this park in favor of having something like this in the City, however, does not feel this is the right method in achieving it, he has always been a proponent of putting the matter on the ballot and letting the voters decide, he made strong commitments when running for office that he would put any recreational bond on the ballot and he will not be supporting this tonight as he feels obligated to fulfill that commitment.

Council Member Willden readvised his past disclosure of working for a subsidiary of Zions Public Finance, Inc., the Indenture of Trust document mentions ZB National Association as Trustee, noted Council is only approving the bond parameters at this meeting, and asked if this can come back to allow for separate discussions and motions, having one part be specific to the bond and the other part address the bank payment; he stated he is not compensated from Zions Public Finance or anything related to that. City Attorney Thurman advised consulting administration was put out to bid a few years ago, however, would look into this. Council Member Willden commented this is a good time to do a bond because of the increase in interest, and noted the City has the ability to go out on the market; reported he spent time evaluating a general obligation bond versus a sales tax bond, had a conversation with a Libertarian group and their opinion was a sales tax bond is best as it allows people the choise to support or not to support it; he is in favor of approving these parameters in order to move forward with discussion.

Council Member McOmber commented he appreciates the discussion, believes as we move forward as a City this is the obvious next step, and noted even before hearing from the City of Lehi we were moving in this direction from a recreational perspective. He also noted with this the City has the ability to design sports programs that may host tournaments which will provide revenue toward maintenance and possibly repayment of the bonds. Suggested placement of a KOA or something similar near Inland Park for tournament RV hookups and Splash carnival operators. Concurs with comment concerning GO bonds vs Sales Tax Revenue bonds, has seen GO bonds fracture communities noting all residents may not be supportive. He feels comfortable going forward with the Sales Tax Revenue bonds at this point and public hearing, noted the City must be transparent in regard to the payback, sales tax should pay the obligation and future Council also has the ability to determine revenue for future parks and refunding.

Mayor Miller commented he believes this is a great thing, reported residents in support have begun going door to door and passing the parameters resolution allows them the opportunity to do that work, they are concerned what opportunities will be available for sports, and believes team sports teaches youth to work as a team and creates character.

<u>Amended Motion by Council Member McOmber to approve adoption of parameters Resolution R16-68 (12-6-16) authorizing the issuance of sale of not more than $10,000,000 aggregate principal amount of Sales Tax Revenue Bonds, Series 2017, with all the details outlined in the Resolution, was seconded by Council Member Willden</u>
<u>Roll Call Vote: Council Members Baertsch, Poduska, McOmber, and Willden – Aye; Council Member Porter – Nay</u>
<u>Motion carried 4-1</u>.

City Manager Christensen noted the City of Lehi has given the City substantial notice and have been good neighbors hosting Saratoga Springs residents for a number of years. He is very appreciative of the opportunity to participate in their programs, and if okay with Council would like to continue with the focus and take into consideration the recommendations made by Mr. Bunker earlier concerning the recreational programs which

appears consistent with the tone of the Council. Understands the City is growing nearing 30,000 population, this is an opportunity at this time for the City to plan to move forward. Council Member McOmber concurred this is the reality of growth, and noted the City programs may be able to obsorb Eagle Mountain or other surrounding communities that would like to be in a multi-jurisdictional program.

3. **Easement Acquisition Agreement for the North Foothill Waterline from James F. Jr. & Margaret J. Stoddard and the Calvin K. Jacob Family Partnership ("Property Owners"); Resolution R16-69 (12-6-16)**.

City Manager Christensen reported this agreement will allow the City to purchase easements for the North Foothill waterline, a critical project that is under design. Public Works Director Jeremy Lapin presented the staff report and recommendation for approval to negotiate and acquire easements upon receipt of appraisal for a waterline as part of the North Foothill Pipeline project that will provide transmission of water from Israel Canyon to the top of the Benches Development via Grandview Blvd.. Noted this will improve water pressure swings in most of the area while providing much needed capacity for future area development. The City needs to acquire an easement for the Project from the Property Owners to finalize designs and begin construction on the project. City Attorney Thuman advised this is an approving Resolution delgating negotiation of terms to City staff.

Motion by Council Member Baertsch to adopt Resolution R16-69 (12-6-16) authorizing subsequent negotiation and acquisition of easements for the North Foothill Pipeline project waterline, was seconded by Council Member Porter
Roll Call Vote: Council Members Poduska, Baertsch, Porter, Willden, and McOmber – Aye
Motion carried unanimously.

4. **Water Rights Purchase and Pending Change Application for 107 Water Shares from Welby Jacob Water Users Company (WJWUC); Resolution R16-70 (12-6-16)**.

Public Works Director Lapin presented the staff report and recommendation for purchase 107 shares of stock in the Welby Jacob Water Users Company (WJWUC), Stock Certificate 3395, from Stephen and Bette Gibson representing 48.364 acre feet of water. This amount is based on the depletion value identified in the Office of the State Engineer, Utah Division of Water Rights (DWRi), of 0.452 acre- feet per share, and these water rights are currently approved for diversion from the WJWUC canal system. The report noted the City is currently working with COP Construction LLC to build a new pump station on Utah Lake and desires to work with the State Engineers Office to move sufficient water shares to this facility to meet the City's long term irrigation water needs. The City intends to file an Application for Permanent Change of Water based on these Water Shares to change the nature of use to municipal and add a point of diversion to divert the water directly from Utah Lake via the new pump station.

The report further advised these water rights are valuable to the City because they are already approved for diversion from the WJWUC within the City and could potentially be approved for diversion from the City's new Utah Lake Pump Station. The proposed purchase price is a fair and reasonable value based on the depletion value which is what the State Engineer considers for approval when reviewing change applications.

Amended Motion by Council Member Porter to adopt Resolution R16-70 (12-6-16) authorizing purchase of water rights and pending Change Application for 107 water shares from Welby Jacob Water Users Company, and authorize staff to file the Change Application, was seconded by Council Member Poduska
Roll Call Vote: Council Members Willden, McOmber, Poduska, Baertsch, and Porter – Aye
Motion carried unanimously.

5. **Marina Pump Station Underground Power Easement with Rocky Mountain Power; Resolution R16-71 (12-6-16)**.

Public Works Director Lapin presented the staff report and recommendation to approve a non-exclusive easement for an underground power line thru the City's marina property. The report noted Rocky Mountain Power has identified a power source for the new marina pump station at the intersection of Harbor Parkway and McGregor Lane. The City has no Public Utility Easements to install power lines from McGregor Lane to the new structure, as a result an easement alignment was identified parallel to the marina entry road and then along the edges of the north parking lot to the pump station. Hansen Allen and Luce, Inc. has drafted the easement documents and Rocky Mountain Power has agreed to the alignment. The report further advised this alignment is the least expensive route for the installation of the conduit, power lines and necessary switch gears. Since this is the only viable power source for the pump station few alignment options are available, other alignments may be in areas where future improvements are built, however, would necessitate a future relocation. City Attorney Thurman noted this is a non-exclusive easement through negotiation.

Motion by Council Member Willden to adopt Resolution R16-71 (12-6-16) approving an underground power easement with Rocky Mountain Power for the Marina Pump Station, was seconded by Council Member McOmber
Roll Call Vote: Council Members Porter, Willden, McOmber, Poduska, and Baertsch – Aye
Motion carried unanimously.

6. **Marina and ULDC Pump Station Projects – Amendments #4 and #5 to Engineering Services Contract for Additional Services and Special Inspections, Hansen, Allen and Luce; Resolution R16-72 (12-6-16)**.

Public Works Director Lapin presented the staff report and recommendation to approve a scope and fee modification for additional engineering services from Hansen Allen and Luce, Inc. related to the 2014 Culinary and Secondary Water Project contract for the Utah Lake Distribution Canal (ULDC) Pump Station and Marina Pump Station projects. Both approved secondary water pump stations and associated improvements are large and complex and will hopefully be completed in a relatively short period of time. In order to provide the needed professional engineering and contract administration services, more coverage is needed from outside resources. Hansen Allen and Luce was asked to provide fees for Project Management which will include contract administration and special inspections for structural and electrical, pump and piping construction. The additional Scope of Work and associated costs are based on estimated time spent on each activity for the duration of the projects. All daily construction activities will be monitored by City Staff. The combined efforts of City Staff, including the Building Department, the City's electrician, GIS Data Collector, and the City inspectors will provide the bulk of Construction Standards and Code compliance inspections and project oversite, and the services outlined in the attached documents will augment Staff with manpower and construction engineering services as these are complicated projects and it is necessary to keep the projects on track, on time and ensure quality projects.

Motion by Council Member Baertsch to adopt Resolution R16-72 (12-6-16) approving Amendments #4 and #5 to Engineering Services Contract with Hansen, Allen and Luce, LLC, for additional services and special inspections, was seconded by Council Member Porter
Roll Call Vote: Council Members Willden, Porter, Baertsch, Poduska, and McOmber – Aye
Motion carried unanimously.

7. **UDOT Redwood Road Widening and Pioneer Crossing Continuous Flow Interchange (CFI) Projects – Betterment Agreement #2 for Fiber Optic Conduit from Grandview Boulevard to 400 South; Resolution R16-73 (12-6-16)**.

Public Works Director Lapin presented the staff report and recommendation concerning the Betterment Agreement with UDOT for fiver optic conduit from Grandview Boulevard to 400 South as part of the CFI Projects. Explained within the report that UDOT's Redwood Road Widening Project is already funded by the State and includes everything needed to accomplish UDOT's goals for the project. There are oftentimes other improvements needed by the City within the project area that can be installed as part of the project more economically than they could if they were installed separately. Such improvements are called

"betterments" and UDOT is willing to install these betterments under a contract with the City that expands the original scope of the UDOT Contract within the project area. UDOT and other agencies try to do Betterment Agreements because the entities generally receive the benefit of economy of scale and elimination of difficult coordination issues with multiple contractors trying to do multiple projects pieces independently. Since most contracts have critical timeline components, Betterment Agreements are critical for overall project cohesion and general success.

He reported this agreement is for the installation of a fiber optic conduit from Grandview Boulevard to 400 South, a critical section because the City already has fiber optic conduit from Harbor Parkway to Grandview Boulevard, bringing the City one step closer to accomplishing its goal of connecting all City facilitates. Installing the conduit at this time will be substantially more affordable and easier than having to do it in the future after the road is widened. This will also save the City the time and expense of bidding this as a separate project including the preparation of contract documents and drawings, contract and construction management, and permitting.

City Manager Christensen reported there will be street lighting upgrades as part of this project. Council Member McOmber noted the grade on Grandview Blvd. coming onto Redwood Road will be reduced.

Council Member Baertsch clarified staff will review and report concerning the gap from 400 S to Pioneer Crossing noting that section is going to be widened, and have discussion with UDOT concerning a by-pass right hand turn to Pioneer.

Motion by Council Member Poduska to adopt Resolution R16-73 (12-6-16) approving Betterment Agreement #2 with UDOT for Fiber Optic Conduit from Grandview Boulevard to 400 South, and delegate staff to look into additional fiber optic conduit extension for remainder of Redwood Road and authorize that expansion if at same cost per lineal foot to fill the gap to Pioneer Crossing, was seconded by Council Member Baertsch
Roll Call Vote: Council Members Baertsch, Poduska, McOmber, Willden, and Porter – Aye
Motion carried unanimously.

8. **Video Streaming Policy, City Council and Planning Commission Meetings; Resolution R16-74 (12-6-16)**.

Public Relations Manager Owen Jackson presented the staff report and recommendation for a Video Streaming Policy for City Council and Planning Commission public meetings and the purpose of this policy is to formalize the use of the camera for these meetings. He reported staff has tested live streaming to YouTube and recording video and posting to YouTube later for public meetings and it was determined the easiest and most cost effective method is to live stream the meetings via YouTube. The live stream is preferred to recording video due to technical difficulties in uploading the video afterwards, file storage both during and after the meeting, and the video recording was not as reliable. Providing video allows members of the public to follow the public meetings meetings and the City is able to provide the service with no ongoing costs, automatic archiving and storage is provided via YouTube.

Council Member Willden inquired concerning YouTube security protocols if it would be difficult to get in and modify the archived live feed video content; Public Relations Manager Jackson responded someone would need to know the log in code to reach the City's video stream. Council Member Willden commented he would just ask that we have a very long complex code, that would be his concern.

City Manager Christensen advised the City's formal meeting record is the written minutes, the audio recording is the official electronic copy and in the future Council may want to consider shorter summary action minutes as live video feed is available to the public, this will take us forward a step and in the future can consider how to utilize it further as a record.

In response to Council Member Baertsch, City Manager Christensen reported the camera is off during closed session. Public Relations Manager Jackson advised he turns the camera off during a break or closed session in the middle of the longer meetings, then turns it on again, at the end of the meeting the two sessions are labeled part 1 and part 2. Council Member Baertsch noted some YouTube channels have advertising and some do not. Public Relations Manager Jackson commented as far as he can tell there is no advertising on the City's videos, if there is advertising at the start Google controls that as part of the free service, outside organizations may not advertise on the City's stream unless Google places it, however, the City may decide to do City advertising.

In response to Council Member McOmber concerning closed captioning, City Attorney Thurman reported he researched extensively and could not find anything where accessibility closed captioning was reviewed; noted this requirement would trigger if someone asked for that reasonable accommodation and the City would be required to provide it unless it is an undue hardship to the City. He explained the City must then look at how much it will cost the City to provide closed caption, staff was trying to narrow the scope of that so the City would not have to provide it for every single Council meeting.

Council Member McOmber inquired if an RFP would be beneficial to determine cost, and then have the closed caption provider available when someone requests it, knows the deaf community is proactive and they are going to request it every time. City Attorney Thurman advised certain standards could be established and included in the policy, such as how much advanced notice is required. Public Relations Manager Jackson reported staff was aware of this issue and researched what other cities were doing in regard to accessibility, it was a sticky issue as he spoke with collegues from other cities, we are actually the only City that will have a policy on it and the Public Relations Association requested a copy; noted Provo's response was they looked into it and decided if you are a non-profit or make less than $300,000 annually, you are not required to provide it. He knows there are some services starting to auto-closed caption for you, YouTube is experimenting with this for people to order for their videos, hopes the technology will catch up to the demand and can certainly do an RFP to see what cost would be for the City and look at options. Council Member McOmber suggested a similar arrangement to the Court's provision of Spanish translators that are available if needed, does not want to open the City up. City Manager Christensen advised this is something staff will look into, noted written minutes as the official meeting record are available within a few days.

Amended Motion by Council Member Porter to adopt Resolution R16-74 approving the Video Streaming Policy for City Council and Planning Commission public meetings, and direct staff to look into an RFP for closed caption, was seconded by Council Member Poduska
Roll Call Vote: Council Members Baertsch, Porter, Poduska, McOmber, and Willden – Aye
Motion carried unanimously.

9. **2017 Annual City Council Meeting Schedule; Resolution R16-75 (12-6-16)**.

City Manager Christensen presented the proposed 2017 City Council Meeting Schedule. Council Member Baertsch noted Spring Break and ULCT are scheduled the week of April 4 instead of March, and June 6 is during Splash Days; Council concurred the schedule to be amended for those dates.

Motion by Council Member Baertsch to adopt Resolution R16-75 (12-6-16) approving the 2017 City Council meeting schedule as modifieded, was seconded by Council Member McOmber
Roll Call Vote: Council Members Porter, Willden, McOmber, Poduska, and Baertsch – Aye
Motion carried unanimously.

APPROVAL OF MINUTES:

November 1, 2016.
November 15, 2016.

Motion by Council Member Porter to approve the minutes of November 1, 2016, and November 15, 2016, with changes submitted by email and posted, and inclusion that the Mayor was excused to work with community scouts at start of meeting, was seconded by Council Member Baertsch
Roll Call Vote: Council Members Willden, McOmber, Poduska, Baertsch, and Porter - Aye
Motion carried unanimously.

BUSINESS ITEMS CONTINUED:

2. **Transportation Master Plan, December 2016 Update; Ordinance 16-25 (12-6-16)**.

Council Member Baertsch recommended continuing this matter to the next meeting as the City Engineer only recently sent the updated version to Council and there are some problems with some of the changes.

Motion by Council Member Baertsch to table this item to the next meeting, was seconded by Council Member Porter
Roll Call Vote: Council Members Porter, Willden, McOmber, Poduska, and Baertsch – Aye
Motion carried unanimously.

ADJOURNMENT:

There being no further business, Mayor Miller adjourned the meeting at 8:35 p.m.

_____
Jim Miller, Mayor

Attest:

_____
Cindy LoPiccolo, City Recorder

Approved: