



CITY COUNCIL TRANSMITTAL


Lisa Shaffer (Mar 23, 2021 12:44 MDT)

Lisa Shaffer, Chief Administrative Officer

Date Received: 03/23/2021

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TO: Salt Lake City Council
Amy Fowler, Chair

DATE: March 22, 2021

FROM: Blake Thomas, Director, Community & Neighborhoods



SUBJECT: 2020 Six Year Plan and Roadway Selection Committee Presentation

STAFF CONTACT: Matt Cassel, PE, City Engineer, 801-535-6140

DOCUMENT TYPE: Information Only

RECOMMENDATION: The information in the report should be helpful in upcoming discussions regarding ongoing pavement conditions and projects in the City. City Council has requested this report be provided once completed.

BUDGET IMPACT: The report is not a specific request for funds; however, Funding Our Future Funding budgets are discussed within the context of the Six Year Plan.

BACKGROUND/DISCUSSION: The goal of the Six Year Plan is to:

- Review previous pavement projects and successes;
- Summarize the findings from the 2017 pavement condition report review pavement condition ratings;
- Explore updated decision trees and suggested treatment types used for developing scenarios;
- Update budget plan scenarios for various roadway type and construction methods;
- Provide project lists including those identified within the \$87M Streets Bond which comprise part of Funding our Future project scope; and,
- Make recommendations to address preservation methods and scenarios.

PUBLIC PROCESS: Not applicable.

EXHIBITS:

2020 Roadway Selection Committee Presentation
2020 OCI Analysis as Requested by Council Staff
2020 Engineering Six Year Plan Executive Summary

Roadway Selection Committee



COMMUNITY AND NEIGHBORHOODS

ENGINEERING DIVISION

Agenda

- **Welcome and explain purpose of RSC working group**
- **Discuss and review upcoming CY 2021 FoF Bond Projects**
- **Briefly discuss status of current Engineering Division allocations for the 2021 FY**
- **Discuss Project Milestones List and revised Six Year Plan**
- **2022/2023 FY plans - Discuss upcoming projects and synergies**
- **Briefly discuss any budget considerations; impact fees and Class C**

CY 2021 FoF Bond Projects

[FoF Dashboard Website](#)

Street	From	To	Status
300 West - Phase 1	900 South	2100 South	2 Year
900 East	Hollywood Ave	2700 South	
900 South - Phase 1	900 West	Lincoln St	2 Year
100 South	University	900 East	
Local Streets Projects Listed on Page 5			

Bond Funded Roadway Projects – 2021 and 2022

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2021	1900 E	SUNNYSIDE AV	900 S	\$140,801	\$3,269,305
	200 N	400 W	W TERMINUS END	\$180,606	
	ALTA ST	2ND AV	3RD AV	\$108,932	
	ALTA ST	3RD AV	FEDERAL HEIGHTS DR	\$212,668	
	BLAINE AVE	NEVADA ST	FOOTHILL DR	\$514,874	
	CAMBRIDGE CIR (remove 2017 overlay)	CAMBRIDGE WY	N TERMINUS END	\$149,863	
	CAMBRIDGE WAY (change extents)	CHANDLER DR	TOMAHAWK DR	\$420,559	
	GREENWOOD TER	900 S	SUNNYSIDE AV	\$105,601	
	FOLSOM AVE (added)	900 W	1000 W	\$513,333	
	KENSINGTON AVE	KEN REY ST	2100 E	\$385,770	
	L ST	7TH AV	8TH AV	\$155,347	
	L ST	9TH AV	10TH AV	\$149,095	
	M ST	3RD AV	4TH AV	\$163,352	
2022	NEVADA ST	WILSON AV	BLAINE AV	\$111,276	\$3,342,173
	WALL ST	COLUMBUS ST	400 N	\$107,091	
	600 S (move to 2025)	900 W	800 W	\$746,984	
	800 W	ARAPAHOE AV	600 S	\$191,476	
	800 W	ARAPAHOE AV	700 S	\$218,109	
	900 S (remove - reconstructed in 2019)	1100 E	1200 E	\$501,825	
	BRYAN AVE	800 E	900 E	\$310,153	
	INDUSTRIAL RD	2100 S	ASSOCIATED AVE	\$401,643	
	JEFFERSON ST	S TERMINUS END	1400 S	\$80,300	
	KENSINGTON AVE	800 E	900 E	\$308,933	
	LIBERTY AVE	LAKE ST	800 E	\$81,454	
	PARAMOUNT AVE (ADDED)	300 W	TERMINUS	\$262,167	
	ROOSEVELT AVE	600 E	700 E	\$239,128	

Bond Funded Roadway Projects – 2023 and 2024

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2023	100 S	600 W	500 W	\$696,337	\$3,218,677
	1000 E	ATKIN AV	2700 S	\$327,363	
	1700 E (ADDED)	1300 S	SHERMAN AVE	\$176,000	
	640 S	IVERSON ST	CONWAY CT	\$49,804	
	ASHTON AVE (remove)	1100 E	HIGHLAND DR	\$228,845	
	DALLIN ST	COUNTRY CLUB DR	STRINGHAM AV	\$371,763	
	GREGSON AVE	900 E	LINCOLN ST	\$127,494	
	LINCOLN ST	ELM AV	2100 S	\$244,435	
	MEADOW LN	GREEN ST	700 E	\$61,644	
	PIERPONT AVE	400 W	300 W	\$182,269	
	RICHARDS ST	900 S	800 S	\$405,280	
	SIMPSON AVE (remove)	1100 E	HIGHLAND DR	\$164,211	
	UNIVERSITY ST	600 S	700 S	\$183,231	
2024	18TH AVE	LITTLE VALLEY RD	TERRACE HILLS DR	\$156,924	\$3,194,638
	BONNEVIEW DR (ADDED)	1500 E	MICHIGAN AVE	\$305,250	
	COUNTRY CLUB CIR (ADDED)	PARLEYS CANYON BLVD	TERMINUS	\$133,833	
	DE SOTO ST	GIRARD AV	N TERMINUS END	\$317,145	
	DEVONSHIRE DR	SUNSET OAKS DR	LANCASTER DR	\$623,231	
	KENSINGTON AVE	WASATCH DR	INDIAN HILLS CIR	\$274,482	
	KRISTIANNIA CIR	VIRGINIA ST	E CULD AC END	\$292,344	
	OQUIRRH DR	OAK HILLS WY	ST MARYS WY	\$581,727	
	PERRY AVE	TRAFFIC -Y-	SIGSBEE TRAF CIR	\$116,446	
	PERRY AVE	VIRGINIA ST	LAUREL ST	\$144,856	
	PERRYS HOLLOW RD	TOMAHAWK DR	NEW BONNEVILLE PL (PVT)	\$75,171	
	SIGSBEE AVE	SIGSBEE TRAF CIR	SIGSBEE TRAF CIR INCLUSIVE	\$112,534	
	WEST CAPITOL ST	ZANE AV	GIRARD AV	\$60,695	

Bond Funded Roadway Projects – 2025 and 2026

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2025	800 W (move to 2022 PU project)	800 S	700 S	\$399,162	\$2,220,335
	800 W (move to 2022 PU project)	900 S	800 S	\$423,512	
	EMILY CIR	S TERMINUS END	800 N	\$48,876	
	GARNETTE CIR	W CULDESAC END	GARNETTE ST	\$65,516	
	GOODWIN CIR	W CULDESAC END	GARNETTE ST	\$54,420	
	GREEN ST (remove - recon complete)	FULLER AVE (private)	500 S	\$146,682	
	IRVING ST	S CULDESAC END	800 N	\$96,787	
	NEBULA WAY	W TERMINUS END	SILVER STAR DR	\$70,430	
	PARK ST	BROWNING AV	SHERMAN AV	\$222,546	
	PRINCETON AVE	1100 E	DOUGLAS ST	\$389,756	
	REDONDO AVE	600 E	700 E	\$210,658	
	VAN NESS PL	400 E	E TERMINUS END	\$91,990	
2026	1100 W	HAYES AVE	AMERICAN AVE	\$200,000	\$200,000

- *If there are extra funds from 2025, funds will be applied to Ashton and Simpson from 2023

FoF Project Milestones

[illegible]






















Revised Six Year Plan
(will be provided for
internal review prior
to RSC meeting)

Engineering Six-Year Pavement Plan 2020

Proposal for Street Reconstruction and Pavement Preservation

Short Discussion of Current Estimated OCI Distribution

OCI Distribution updated
November 2020

Overall Condition Index (OCI) Range	Condition Description	Initial Percentage of Network (2017)	Estimated Percentage of Network (Current)	Legend
86 - 100	Good	 1.60%	 5.12%	
71 - 85	Satisfactory	 8.89%	 6.70%	
56 - 70	Fair	 25.84%	 9.32%	
41 - 55	Poor	 36.61%	 22.70%	
26 - 40	Very Poor	 21.31%	 26.30%	
11 - 25	Serious	 5.41%	 20.00%	
0 - 10	Failed	 0.34%	 8.83%	
	Total	100.00%	100.00%	

The table above presents the OCI distribution shift from 2017 to current estimates. The overall network estimates illustrates an overall shift of many roadway segments from the Fair category to the Poor category and from the Poor category and Very Poor category to the serious category. These are estimates, however, and when the roadway survey is performed again in 2021, these numbers can be fine-tuned.



Discuss Subcommittee Synergies – 6-Year Outlook

Roadway Selection Committee

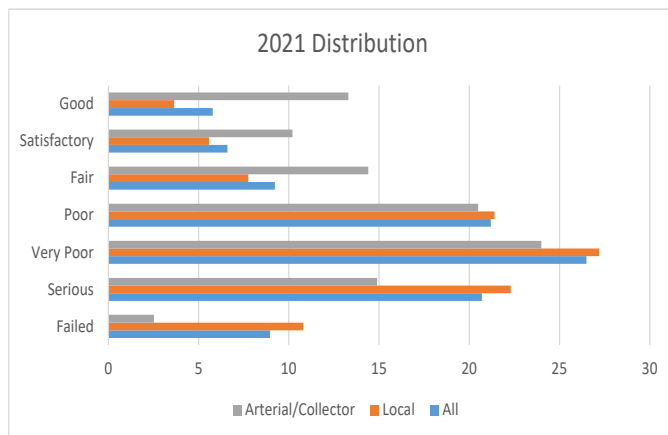


COMMUNITY AND NEIGHBORHOODS

ENGINEERING DIVISION

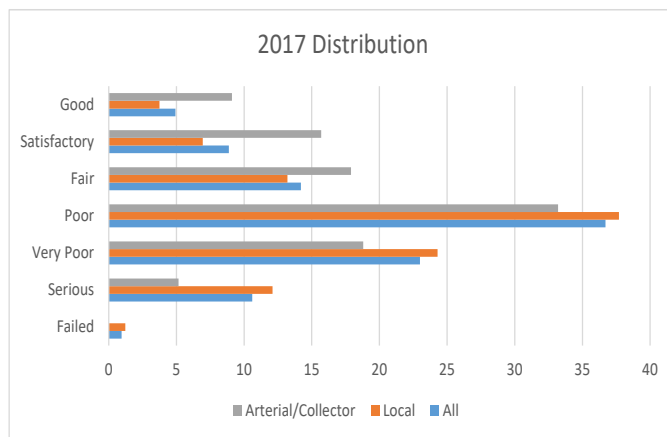
2021

OCI Range	Description	Percentage of Network		
		All	Local	Arterial/Collector
0-10	Failed	8.96	10.8	2.52
11-25	Serious	20.7	22.3	14.9
26-40	Very Poor	26.5	27.2	24
41-55	Poor	21.2	21.4	20.5
56-70	Fair	9.22	7.76	14.4
71-85	Satisfactory	6.6	5.58	10.2
86-100	Good	5.78	3.65	13.3



2017

OCI Range	Description	Percentage of Network		
		All	Local	Arterial/Collector
0-10	Failed	0.947	1.22	0
11-25	Serious	10.6	12.1	5.15
26-40	Very Poor	23	24.3	18.8
41-55	Poor	36.7	37.7	33.2
56-70	Fair	14.2	13.2	17.9
71-85	Satisfactory	8.88	6.95	15.7
86-100	Good	4.93	3.74	9.1





Engineering Six-Year Pavement Plan 2020

Proposal for Street Reconstruction and Pavement Preservation

**Engineering Division
Community and Neighborhoods
Salt Lake City Corporation**

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Executive Summary

Salt Lake City's transportation network includes 1830 lane miles of Class C streets. Class C streets are maintained by the City. Engineering is also currently surveying the extensive alleyway network throughout the City which include a vast network of public and privately-owned alleyways. The inventory will be complete in the latter portion of this year. These streets are a mix of asphalt, concrete, and unsurfaced pavement types. The network of streets is further classified as Local/Residential streets (Local) and Arterial/Collector (Arterial) streets.

The City's pavement assets are subdivided into administrative segments units comprising the City-wide network. A segment is a measurable portion of the roadway used for the analysis. The segments provide a means of tracking asset condition and work within the Cartegraph asset management system.

This plan's first iteration was produced in 2019. The 2020 plan will include updates to several areas including updating project lists: highlighting new strategies for pavement maintenance; providing an updated flowchart for decision making; and revising current ideas for prioritizing pavement management scenarios.

Management of a well-maintained street system requires a balanced program of pavement maintenance and preservation strategies. The objective of the ongoing six-year pavement management plan is to extend the functional life of the City's street network to the highest degree possible with available funds. This is accomplished through periodic pavement surface treatments (preservation and maintenance techniques) and major rehabilitation or reconstruction at appropriate times in the pavement life cycle. In summary, the goal of this management plan is to:

- Review previous pavement projects and successes;
- Summarize the findings from the 2017 pavement condition report review pavement condition ratings;
- Explore updated decision trees and suggested treatment types used for developing scenarios;
- Update budget plan scenarios for various roadway type and construction methods;
- Provide project lists including those identified within the \$87M Streets Bond which comprise part of Funding our Future project scope; and,
- Make recommendations to address preservation methods and scenarios.

Responsibilities

Engineering partners with the Transportation Division on the planning, design, reconstruction and day-to-day operations of the street and trail transportation system. The Streets Division, who are part of the Public Services Department, provide for the maintenance of the roadways through filling potholes, applying necessary preservation treatments, street sweeping and winter operational activities on City pavement assets.

Past Pavement Projects

The following is a list, by year, of pavement reconstruction projects completed by Salt Lake City Engineering. The funding over the past four years has allowed for reconstruction of 43 lane miles of roadway. A lane mile is a measurement of pavement area. It is calculated by multiplying the length of a road segment by lane width(s).

The list of these projects follows:

2016

Street	From	To	Treatment Type
1300 South (phase 2)	400 West	500 West	Concrete Reconstruction
Rose Park Ln.	2000 North	2200 North	Concrete Reconstruction
Regent St.	100 South	200 South	Concrete Reconstruction
Sunnyside Dr.	Guardsman Way	Foothill Dr.	Asphalt Reconstruction

2017

Street	From	To	Treatment Type
900 West	400 South	950 South	3" Asphalt Overlay
900 West	North Temple	400 South	3" Asphalt Overlay
Berkeley St.	2100 South	Wilmington Ave	Concrete Reconstruction
Normandie Cir.	Harvard Ave.	Terminus	Concrete Reconstruction
900 South/Indiana Ave.	Surplus Canal	3600 West	Concrete Reconstruction
East Capitol Blvd.	500 North	Ensign Vista Dr.	3" Asphalt Overlay

2018

Street	From	To	Treatment Type
S Gladiola St.	500 South	900 South	Concrete Reconstruction
2100 East	1700 South	2100 South	3" Asphalt Overlay
1500 East	900 South	1300 South	3" Asphalt Overlay
1200 East	600 South	800 South	Asphalt Reconstruction
Simpson Ave.	Wyoming St.	Broadmoor St.	Concrete Reconstruction
Wilmington Ave.	Highland Dr.	1300 East	Concrete Reconstruction
Wilmington Ave.	2000 East	2100 East	Concrete Reconstruction

2019

Street	From	To	Treatment Type
1700 South	1700 East	1900 East	Concrete Reconstruction
2500 East	Foothill Drive	2100 South	Concrete Reconstruction
Downington Avenue	2500 East	Foothill Drive	Concrete Reconstruction
2700 South	Highland Drive	1930 East	Asphalt Reconstruction
1000 West	700 South	800 South	Concrete Reconstruction
Post Street	700 South	800 South	Concrete Reconstruction
900 South	950 East	1300 East	Concrete Reconstruction

Pavement Condition Report Summary

A pavement condition report was funded by Salt Lake City Council and Administration in 2016 and completed in 2017. The next pavement survey is scheduled to be completed in 2022. The pavement condition survey employed a set of tools to rate existing pavement surface conditions for each roadway segment.

All Class C roadways were analyzed using a series of instruments which include images of all roadway segments. Pavement distress type, distress extent, and distress severity were quantified from these images. A pavement condition index (PCI) was assigned to each roadway segment.

International Roughness Index (IRI) values were also collected along the survey segments, as part of the analysis, utilizing a laser profiler.



Figure 1 - Laser Profiler and Van Survey Equipment

IRI indexes were obtained from measured longitudinal road profiles and provides a driver's perspective to the bumpiness and roughness of the ride.

The overall condition index (OCI) is calculated using the PCI and IRI values. This survey project used pavement management software for calculating the PCI and OCI value, as well as analyzing the network PCI and OCI ranges. An Overall Condition Index (OCI) was applied to all City-maintained roadway segments. The OCI measure is a classification of the overall pavement condition, on a scale of 0-100 with the highest numbers representing the best roadway segments in the City. The results of the survey are presented below. In summary, the City roadway network average, as of 2017, was rated as poor (48 OCI). This figure was obtained by averaging all street segments, regardless of type and length to obtain an overall network average.

Table 1 - Overall Condition Percentages from the 2017 inspection

Overall Condition Index (OCI) Range	Condition Description	Percentage of Network	Legend
86 - 100	Good	1.60%	
71 - 85	Satisfactory	8.89%	
56 - 70	Fair	25.84%	
41 - 55	Poor	36.61%	
26 - 40	Very Poor	21.31%	
11 - 25	Serious	5.41%	
0 - 10	Failed	0.34%	
	Total	100.00%	

The survey and report are available on the Funding Our Future website [here](#). The survey summary states that approximately 63% of the roadway segments within the City are rated in the poor or worse classifications. As the table depicts, more than half of local streets, arterials and collectors, in 2017, are no longer candidates for preservation or rehabilitation treatments. Many pavement segments have deteriorated below a level where preservation methods are effective. Most are candidates for reconstruction.

Salt Lake City Engineering newest estimates of pavement OCI are presented in Table 2. Methods developed by Engineering staff and implemented within Cartegraph provide up to date estimates of OCI. These estimates account for preservation, maintenance and reconstruction work conducted after the conclusion of the 2017 survey

Table 2 – Current Overall Condition Percentage Estimates

Overall Condition Index (OCI) Range	Condition Description	Percentage of Network	Legend
86 - 100	Good	5.27%	
71 - 85	Satisfactory	7.28%	
56 - 70	Fair	8.89%	
41 - 55	Poor	26.8%	
26 - 40	Very Poor	25.0%	
11 - 25	Serious	18.8%	
0 - 10	Failed	7.69%	
	Total	100.00%	

Table 3 - OCI Condition Distribution, Initial to Current

Overall Condition Index (OCI) Range	Condition Description	Initial Percentage of Network (2017)	Estimated Percentage of Network (Current)	Legend
86 - 100	Good	1.60%	5.12%	
71 - 85	Satisfactory	8.89%	6.70%	
56 - 70	Fair	25.84%	9.32%	
41 - 55	Poor	36.61%	22.70%	
26 - 40	Very Poor	21.31%	26.30%	
11 - 25	Serious	5.41%	20.00%	
0 - 10	Failed	0.34%	8.83%	
	Total	100.00%	100.00%	

Table 3 (updated November 2020) above presents the OCI distribution shift from 2017 to the current estimates. The overall network estimate illustrates an overall shift of many roadway segments from the Fair category to the Poor category and from the Poor and Very Poor category to the Serious category. These are estimates, however, and when the roadway survey is performed again in 2021¹, these numbers can be fine-tuned. The following section explains approaches to making decisions given the current conditions of the roadway network.

Decision Trees and Recommendations

Decision trees are a helpful mechanism to determine strategies for roadway maintenance on an overall street network scale. The Overall Condition Rating (OCI), previously mentioned, is a good guide, but final decisions and prioritizations should be done with human interaction, field verification, and sound engineering judgement.

The following chart is a refined decision tree used to determine the preservation and maintenance methods meant to be used alongside the Overall Condition Rating results. Engineering will create a decision tree, in cooperation with Streets, specific to Salt Lake City.

¹ After the 2020 Roadway Selection Committee, the decision to move the pavement survey to 2021 was decided. December 2020

Updated Decision Tree

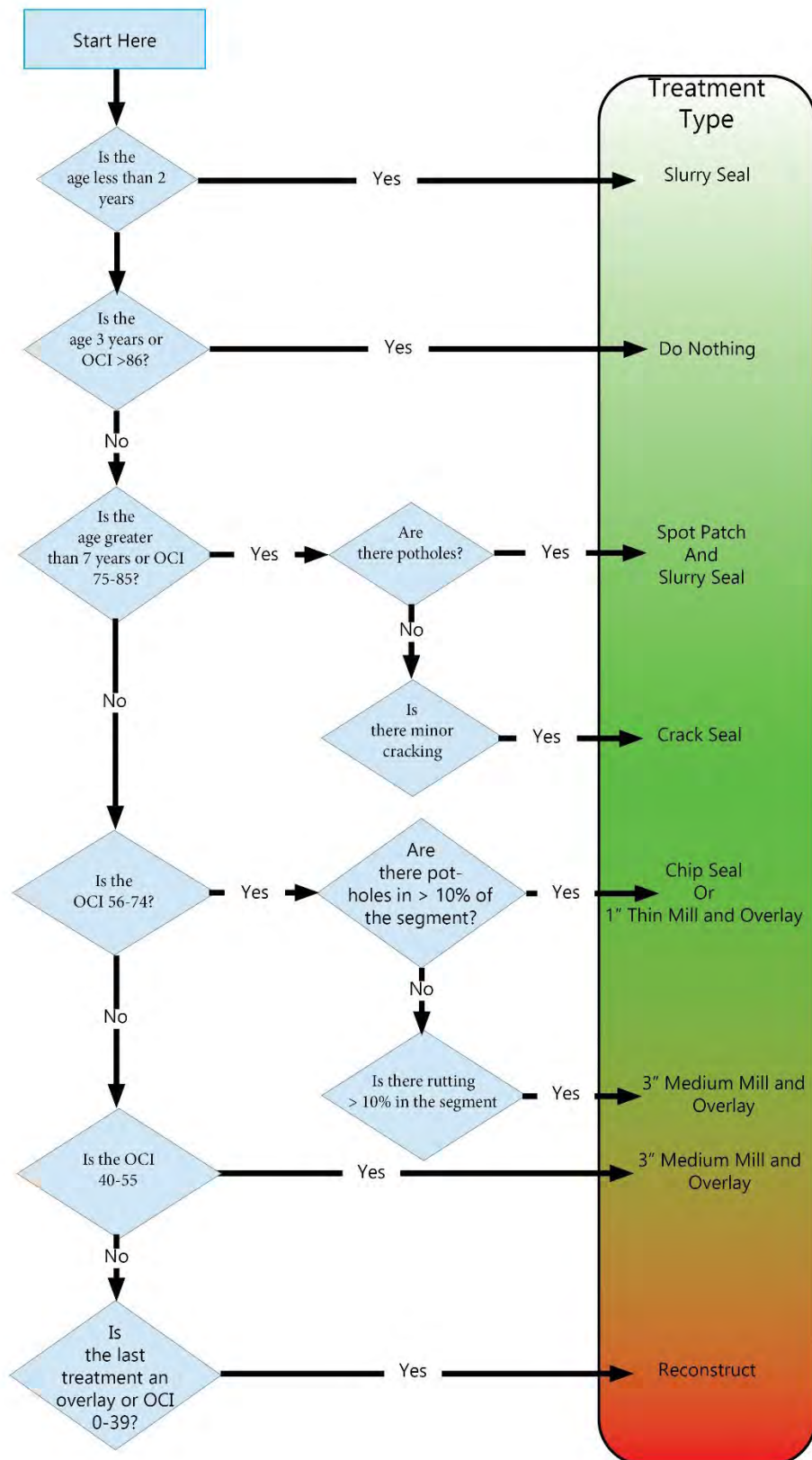


Figure 2 - Sample Preservation and Maintenance Tree

Remaining Service Life

Remaining Service Life (RSL) is another strategy the Engineering Division is evaluating as a measure of pavement maintenance and preservation. RSL is defined as the anticipated number of years that a pavement can remain structurally and functionally sound with expected scheduled maintenance. Ideally the service life proceeds in the following manner:

- The service life begins when the pavement has been constructed or reconstructed;
- Preservation techniques should be employed within the following two years to provide the new pavement surface with adequate protection;
- Next, rehabilitation treatments must be applied before the roadway has suffered too much damage. Therefore, the timing of rehabilitation techniques is crucial to make the properly leverage funding;
- Pavement segments in advanced states of degradation require reconstruction in order to restart the service life clock. Pavement in deteriorated condition are not suitable candidates for maintenance activities. Moreover, maintenance of deteriorated pavement is an inefficient use of funds and these activities are best used elsewhere.

Determining the optimal threshold for treatments is the key strategy to preserving and rehabilitating pavement assets. Those thresholds are set to correspond to the ideal conditions for preservation and maintenance activities while the life-cycle cost is within an optimal cost range. The graph below depicts the concept of applying the proper treatment at the proper time within the pavement's life cycle.

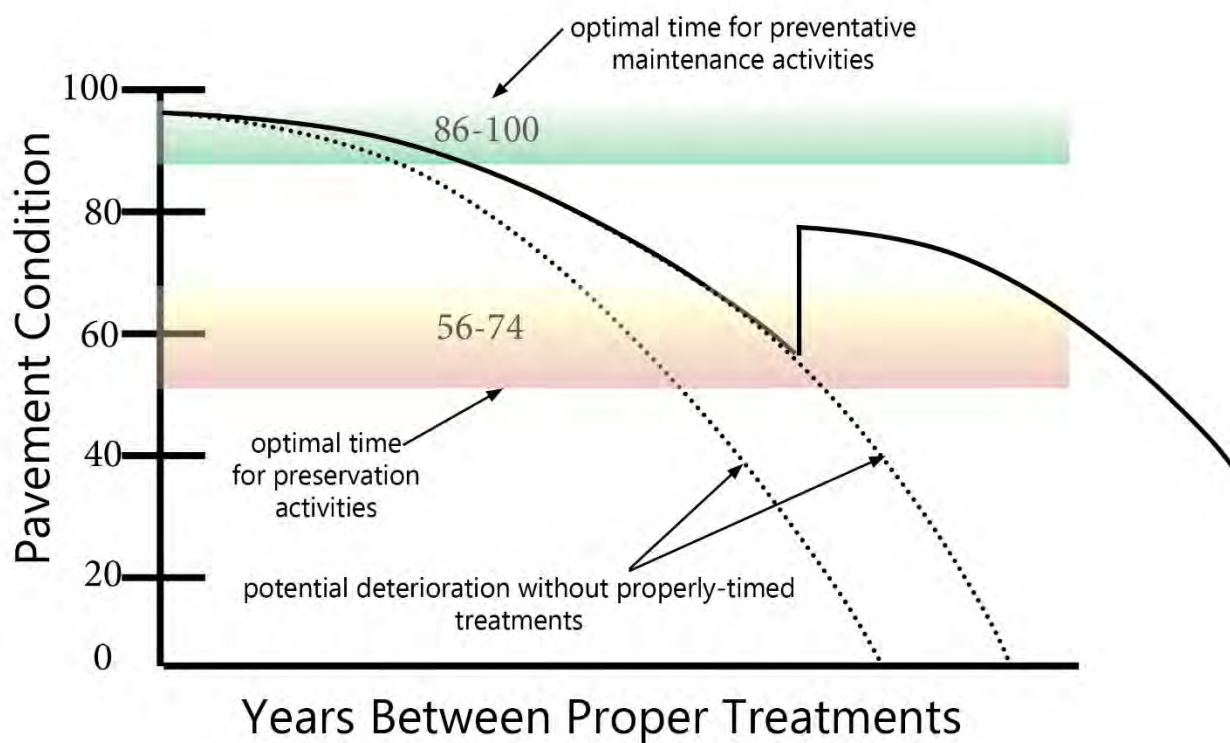


Figure 3- Optimal Pavement Treatment Timing

Two of the key components to an effective pavement management plan is to recognize the optimal timing for treatments and establishing acceptable thresholds for roadway performance. A balanced perspective of observing OCI, understanding the remaining service life, and knowing when the last maintenance activity occurred is fundamental to maintaining optimal pavement network health.

The use of Cartegraph by Streets and Engineering has led to further collaboration and alignment of preservation, rehabilitation, maintenance and construction activities. Using a balanced view of RSL and OCI to establishes a framework and will continue to refine our processes. Cartegraph will be used to track the asset condition and Engineering, in cooperation with Streets, will plan work accordingly. This is explained in further detail in the Project Prioritization section below.

Project Prioritization

Maintenance

The Streets Division began utilizing Cartegraph in 2019 to capture and plan streets maintenance activities. The Engineering Division and the Streets Division interact cooperatively to develop a 3-year fiscal plan for maintenance. The flow chart in Figure 2 provides the framework for the segment selection and Cartegraph is used to document and plan work. The schedule for maintenance roughly follows:

- A slurry seal is applied 2 years after a roadway reconstruction as a general maintenance strategy. As mentioned above, this provides a roadway section with protective sealant preventing oxidation and moisture intrusion.
- Another round of slurry seal is applied within 7 years of reconstruction or when the OCI is estimated to be within 75-85. Spot patching or pothole repair might also be required during this time. If there is minor cracking, crack-sealing can be utilized to prevent infiltration of water.
- Once the segment has deteriorated or when the OCI is estimated to be within 56-74, or if there are potholes in more than 10% of the roadway surface, a preliminary crack-seal is applied. Specific areas can be patched and filled to level the adjoining areas of deterioration, then the segment receives a chip-seal. Highly deteriorated sections may require a thin 1" overlay to further extend the roadway surface. A deeper overlay of 3" may be required for roadway surfaces which are significantly rutted but are still within this OCI range. Per the State Code, overlays of 2" or less in thickness are considered a maintenance activity while overlays over 2" are considered a construction project.
- Additional maintenance considerations:
 - Areas unusually impacted by traffic loads or construction may receive inlays to keep them passable until reconstruction funds are available.
 - Chip seal is sometimes used on poorer roads to keep them pothole free.
 - In-lays are also used to smooth out rutted roads caused by heavy traffic.

Figure 4 represents the preferred asphalt maintenance strategy with attention to best practices relating to properly timed treatments and ideal service life thresholds.

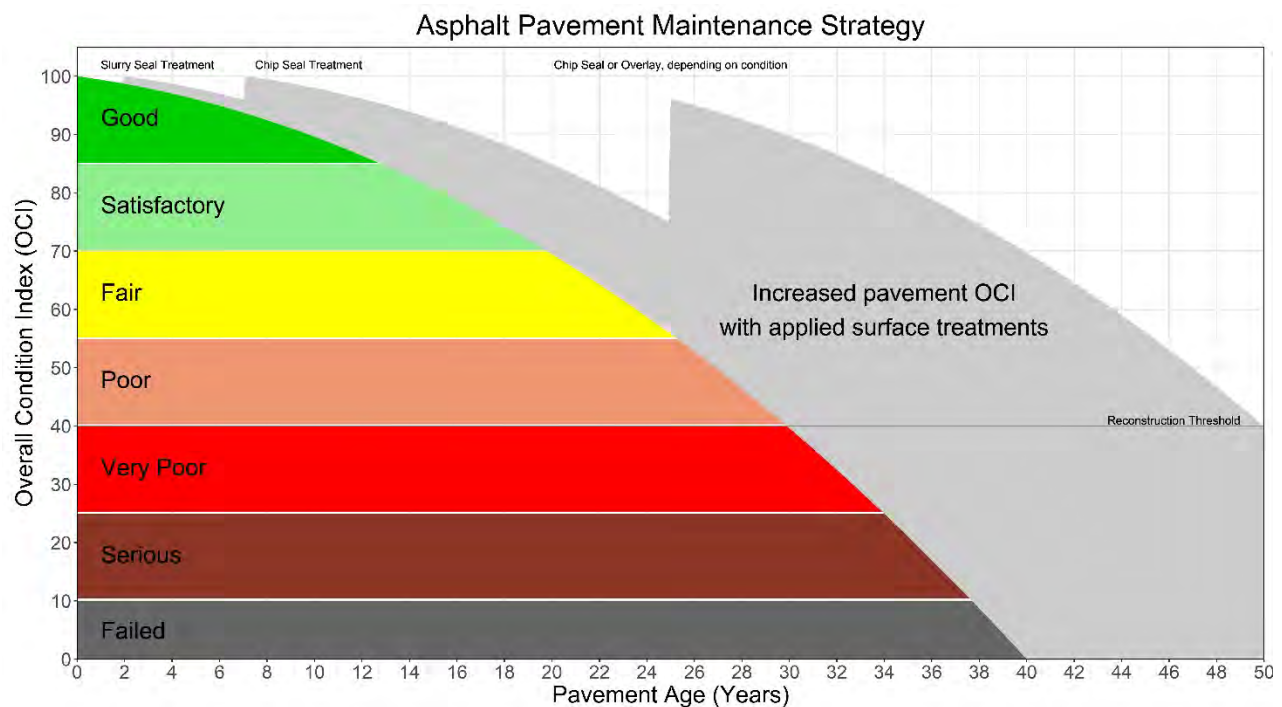


Figure 4 – Preferred Asphalt Pavement Maintenance Strategy

Rehabilitation and Reconstruction








The Engineering Division partnered with the Streets Division, Transportation Division, Public Utilities Department, and the Redevelopment Agency to produce a sound project prioritization plan. While primarily a pavement plan focused on street reconstruction needs, Engineering seeks input from many other affected groups to achieve more inclusive project prioritization results. Maintenance is a critical aspect of ensuring pavement longevity, therefore, this plan also includes recommendations for maintenance activities.

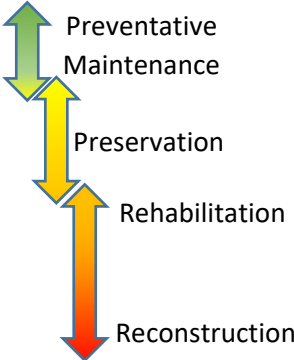
This plan helps collaborate efforts with Public Utilities and other private utility companies as they determine their utility needs. With a moratorium of 7 years on excavation within newly constructed streets, and 3 years on repaved (overlaid) streets, it is critical that projects are planned and prioritized with consideration of planned future utility improvements.

Engineering's goal is to improve overall condition of the roadway network to a Fair condition (minimum average OCI of 55 or greater).

In addition to the decision tree noted above, Engineering uses the general OCI guidelines and observes threshold timing in the service life to help provide a simple framework to help guide rehabilitation and reconstruction activities.

Table 4 – OCI Maintenance Method Framework

Overall Condition Index (OCI) Range	Condition Description	Method	Legend
86 - 100	Good	Do Nothing or Slurry Seal in First Two Years	
75 - 85	Satisfactory	Patch or Crack Seal	
56 - 74	Fair	Slurry or Chip Seal	
40- 55	Poor	Rehabilitate (Overlay)	
26 - 39	Very Poor	Reconstruct	
11 - 25	Serious	Reconstruct	
0 - 10	Failed	Reconstruct	



Visual examples of pavement conditions are included in Appendix A.

Review - Asphalt Pavement Management and Maintenance Strategies

A brief review of pavement management strategies is presented below as guidance of techniques employed by the City's Divisions. Pavement maintenance strategies are accomplished through the Streets Division. Asphalt overlay and reconstruction projects are funded by the City's Capital Improvement Program and administered by the Engineering Division.

Pothole Filling

This is an emergency type repair to fill holes in existing deteriorated roadways. Quality construction, timely maintenance activities, and proper utility cut restorations, are all components that significantly reduce the frequency of pothole repairs.

Patching and Crack Sealing

These maintenance strategies address specific distresses in the roadway surface. Localized patching addresses significant defects in the pavement surface. Crack sealing places specialized materials into asphalt pavement cracks to prevent infiltration of water. These repair types are generally followed by a roadway surface treatment within two years to provide a cost-effective program of roadway preservation.

Slurry Seal and Chip Seal Surface Treatments

Slurry seals and chip seals are thin surface treatments applied to the entire pavement surface of a roadway section to prevent oxidation and moisture intrusion. Slurry seals are applied to streets that are in good condition, and chip seals are applied to streets that have deteriorated to a satisfactory condition rating. Both treatments extend the pavement life and improve long-term performance.

Asphalt Pavement Mill and Overlay

Asphalt mill and overlay projects remove the top 1" to 3" of the existing pavement and replace it with a new asphalt overlay, which adds structural strength to the existing pavement. This pavement maintenance strategy is generally applied to roadways that have a poor condition rating. In accordance with City's commitment to the elimination of pedestrian barriers in the public way, ADA accessibility ramps are installed in conjunction with all overlay projects. Curb and gutter are also evaluated, and appropriate repairs are included in the overlay project to enhance safety and alleviate drainage problems. Per the State Code, overlays of 2" or less in thickness are considered a maintenance activity while overlays over 2" are considered a construction project. A 3" mill and overlay is advised for road which have deteriorated to a range of an OCI of 40-55. This is typically the bottom limit of refurbishment and per the State Code, is not considered a maintenance activity. The Streets Division coordinates with the Engineering Division when segments have deteriorated to this level. Spot activities can occur to preserve a segment or area along these routes, but overlays are required to rebuild substructures to prevent further degradation.

Pavement Reconstruction

Roadway pavements that have exceeded their functional life are designated for reconstruction through the City's Capital Improvement Program. Pavement reconstruction projects involve removal of the deteriorated roadway section and replacement with a new roadway structural system using new or recycled materials. Reconstruction projects address all necessary street repairs, including roadway base materials, asphalt or concrete pavement, curb and gutter, sidewalks, accessibility ramps, and drainage improvements.

To maximize our investment in road reconstruction, maintenance should be funded at a level that prevents further degradation, increase remaining service life, and delays the need for reconstruction. The most efficient maintenance strategy is to keep good roads in good condition. With proper and timely application of surface treatments on new roads, it is feasible that the pavement can be kept in good condition for a very long time – 25 to 35 years or longer. The current range of pavement conditions requires careful planning to select the best pavement treatment options.

As a comparison, for the cost of every lane mile that is reconstructed, roughly 50 miles can receive a surface treatment. Street maintenance is closely coordinated between the Engineering and Streets divisions utilizing the Cartegraph asset management system.

Project Plan and Budget Methodology

From the data collected, Engineering developed a six-year project list. This plan provides a framework for planning and budgeting purposes with the goal of improving pavement condition to a fair condition network wide. The plan, discussed in detail below, identifies and prioritizes the following:

- Selecting roadway reconstruction candidates
- Selecting roadway rehabilitation candidates
- Ranking candidates according to needs as identified by other City divisions
- Specifying roadway treatments to be performed by the Streets Division
- Developing an annual budget framework for decision-makers and stakeholders

Engineering created a proposed project list, as a first step in the planning process. The list utilized OCI data to identify the worst local/residential 200 roadway segments in the City. Engineering developed an in-house geospatial application to curate the list of 200 local/residential street segments. This application allowed other divisions and departments to rank, by degree of importance, these street segments. This refined list was combined with some of the worst arterial/collector roadway segments previously identified in a combined effort between Engineering, Streets, Public Utilities, and Transportation Divisions. The arterial/collector list includes some roadway segments that do not meet the “worst” criteria as determined by OCI. Instead, these segments met other critical needs as identified by other departments.

In addition, a subset of roadway candidates falling into a middle classification having an OCI of 50 to 51 was selected. This group comprises a list of roadways qualified to receive a mill/overlay rehabilitation.

Budget Strategy

Engineering in consultation and agreement with Transportation recommends that the funding sources for street reconstruction and overlays be distributed 80% for arterials/collectors and 20% for local streets. For the purposes of planning, the Engineering Division adopted this hierarchy as an approach to budgeting for future pavement construction. Salt Lake City Council agreed with this recommendation and supported the expenditure of street Bond funds in this way. Support for prioritizing arterials and collectors in this hierarchy follows:

- These are the primary emergency response routes to hospitals and snow removal routes and should be maintained at the highest level possible.
- Greatest value for the \$/mile – though the average cost to reconstruct an arterial/collector street is higher than a local street, a much larger segment of the community will benefit from the upgraded arterial/collector street. Most everyone in the community uses the arterial/collector streets on a daily basis whereas each local street serves a smaller segment of the community.
- Local roads have much less Average Annual Daily Trips (AADT of less than 2,000) versus arterial/collector streets (AADT of 5,000 – 15,000). The slower posted speeds and shorter

travel distances makes it much easier for drivers on local streets to tolerate pavement distresses such as potholes.

- Inclusion of the Transit Master Plan priorities, such as enhanced bus corridors, occurs along arterial and collector routes such as 200 S.
- Economic activity, movement of people, goods and services rely on a well-maintained transportation network with arterials and collectors as its core that connects population hubs and council districts.

Based on the issuance of \$87 million in bonds over the next six years along with \$3.0 million of Class C funds received each year (\$18 million over 6 years), the 80/20 breakout is shown below.

80/20 Funding Scenario

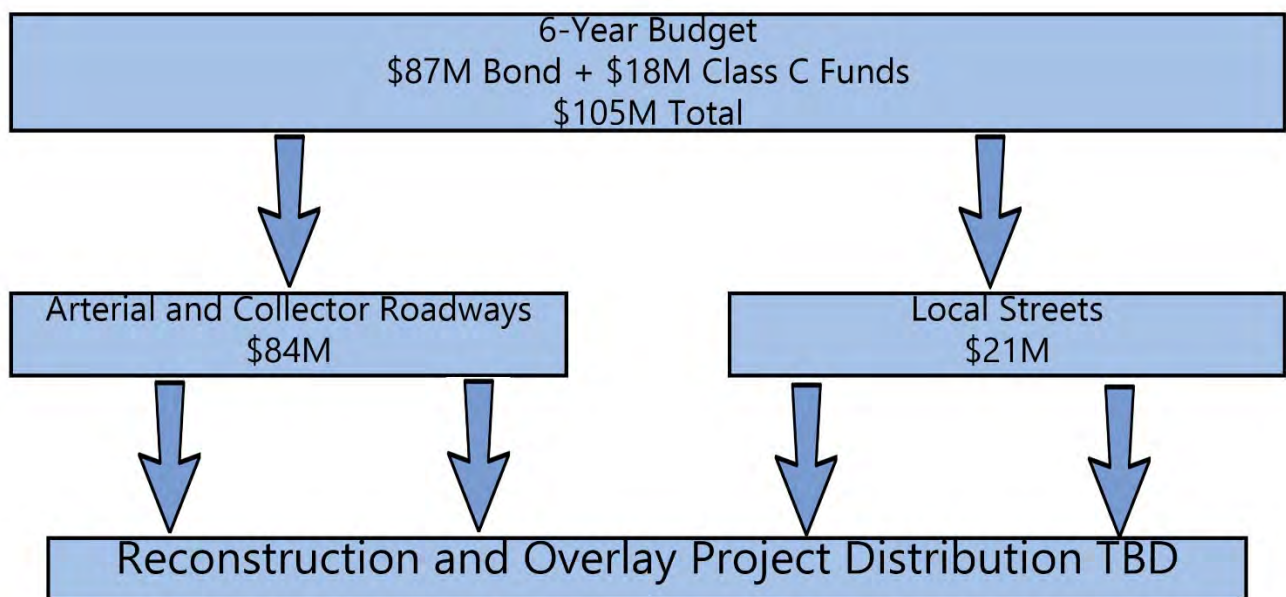


Figure 5 - Fund Distribution Scenario

The capital budget plan does not include City-wide roadway maintenance, which is funded through other programs.

Engineering also recommends continuing to fund the pavement condition survey every 5 years. A regular census of pavement condition provides detailed information from an independent source, allowing for Engineering to calibrate Cartegraph OCI estimates. The time period of five years balances the desire to regularly collect data on pavement condition with budgetary constraints. We will also reevaluate this plan annually based on funding received and new priorities.

Project Breakout

The following pages detail the planned project lists for the next six years. Items on this list include funding from the \$87 million Bond issuance and \$18 million Class C funds. The project priorities for these projects are listed below:

December 2020

- Worst First
 - Data driven
 - Based on OCI from pavement condition survey
- Transportation Priorities
 - Safety needs
 - Multimodal and Complete Streets needs
- Public Utilities Priorities
 - Curb/Gutter/Storm Drain study
 - Impacts to Public Utility project budgets
 - East West Aqueduct alignment
- Overlap with Current Plan where Available
 - Impact fees, capital facility plans
 - 9-line plans
 - The list does not include provisions for new roads in Northwest Quadrant

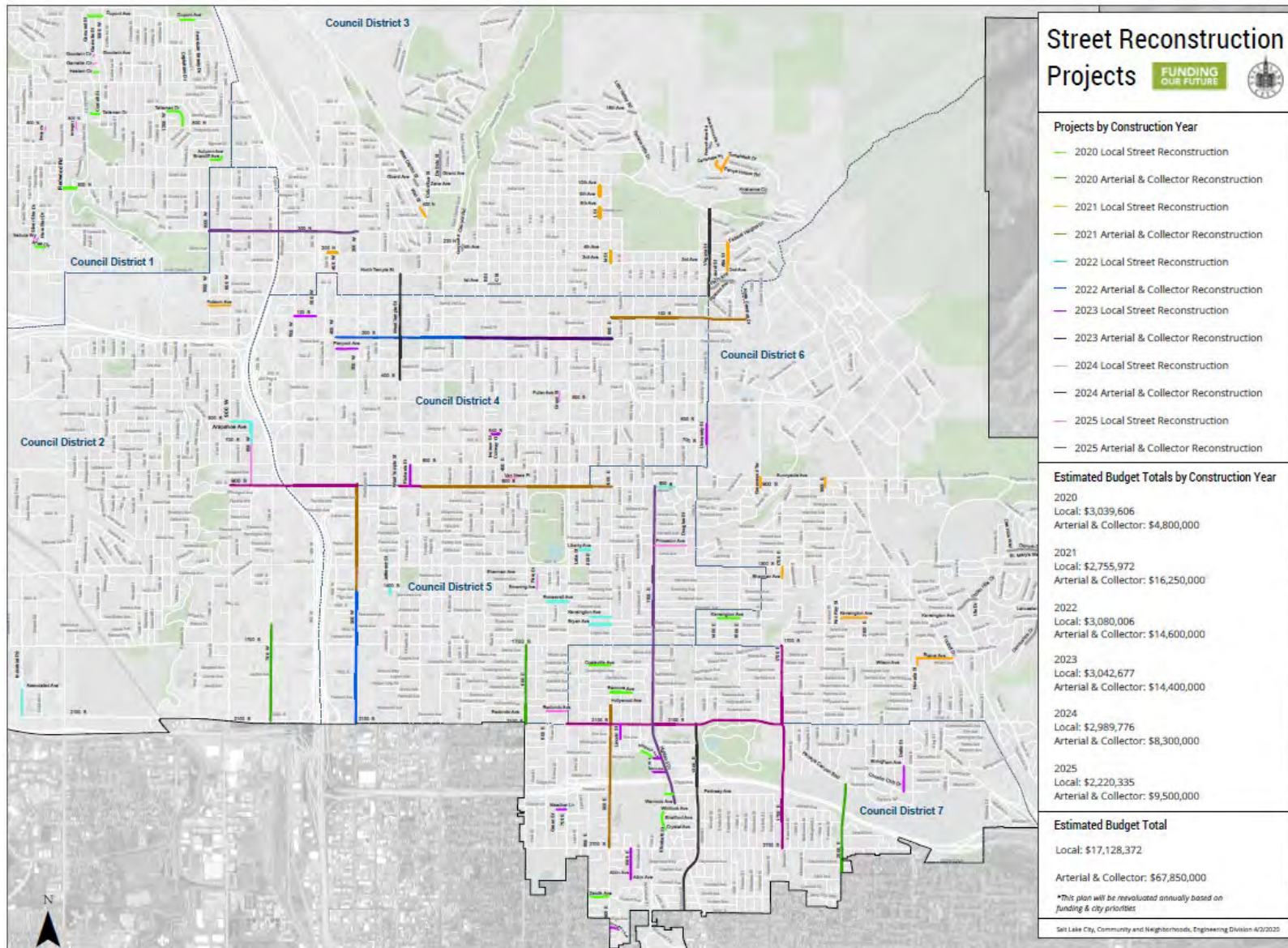
It should be noted that this list is only a current snapshot in time of the priorities at the time of the revision of this document. Roadways do not deteriorate at the same pace due to many competing factors. As mentioned, Engineering expects to revisit this list, and the priorities, annually during the Roadway Selection Committee to insure the current needs of the City are being addressed.

Plan Implementation

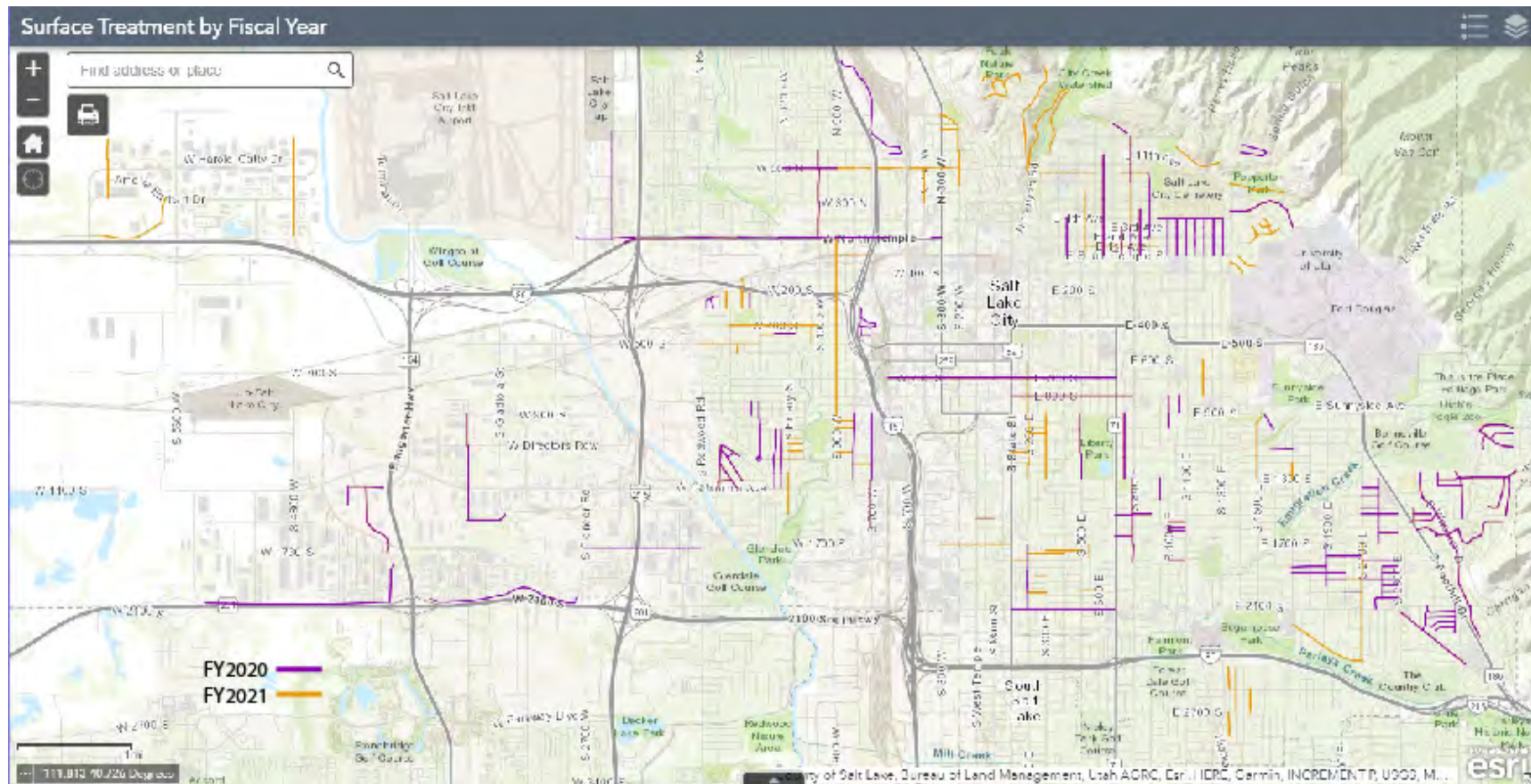
As the plan is executed, Engineering acknowledges that there are variables affecting the actual cost of projects. The following will help staff manage the expected differences between the actual project costs versus staff's estimated costs:

- Every fall, staff will revisit the plan with the Roadway Selection Committee. Based on the past summers actual cost of construction, adjustments to the plan will be made adding or deleting projects as necessary. In addition, another year of projects will be added to the plan, so it remains a 6 year look ahead.
- The current plan shows an estimated \$100 million to be spent. The Bond and Class C funds total \$109 million. The \$5 million contingency will be managed as follows:
 - If staff finds that final project costs exceed the estimated budgets, the contingency funds will be used to cover the overruns;
 - Once the contingency funds are spent, projects will need to be removed from the plan;
 - If final project costs are coming in lower than the estimated budget, staff will be adding projects to the list;
 - At the end of the six-years, all \$87 million plus earned interest of the bond funds will be spent.

Reconstruction Plan Map- [link to map here](#)



Current Proposed Streets Maintenance Plan [link to map here](#)



Proposed Street Listing by Year and Reconstruction Type

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Arterial & Collector Reconstruction Candidates

Year	Street	From	To	Cost	Impact Fee	Total for Year
2020	500 East*	1700 South	2100 South	\$1,500,000	\$124,500	\$4,800,000
	2000 East	Parley's Way	City Limit	\$1,300,000	\$107,900	
	700 West	1600 South	2100 South	\$2,000,000	\$150,600	
2021	300 West - Phase 1	900 South	1300 South	\$8,650,000	\$651,345	\$16,250,000
	900 East*	Hollywood Ave	2700 South	\$2,600,000	\$172,640	
	900 South	900 West	900 East	\$2,000,000	\$144,000	
	100 South	University St	900 East	\$3,000,000	\$282,000	
2022	300 West - Phase 2	1300 South	2100 South	\$8,600,000	\$651,345	\$14,600,000
	200 South - Phase 1	400 West	900 East	\$6,000,000	\$406,550	
2023	200 South - Phase 2	400 West	900 East	\$6,000,000	\$406,550	\$14,400,000
	1100 East / Highland Dr	Ramona Ave	Warnock Ave	\$2,900,000	\$192,560	
	1100 East	900 South	Ramona Ave	\$3,900,000	\$232,400	
	300 North	300 West	1000 West	\$1,600,000	\$133,480	
2024	Virginia St	South Temple St	11th Ave	\$1,300,000	\$122,200	\$8,300,000
	1300 East**	2100 South	City Limit	\$3,000,000	\$722,166	
	West Temple	North Temple	400 South	\$4,000,000	\$283,600	
2025	1700 East	1700 South	2700 South	\$2,000,000	\$132,800	\$9,500,000
	2100 South	700 East	1700 East	\$7,500,000	\$622,500	
2026	900 West***	North Temple	600 North	\$2,800,000		\$2,800,000
This plan will be reevaluated annually based on funding and City priorities. *Coordinate with Public Utilities **1300 East (2100 South to City Limit) is receiving federal funding. ***Dependent on funding and City priorities					Total	\$70,650,000

Arterial & Collector Overlay Candidates							
Year	Street	From	To	Impact Fee	Cost	Total for Year	
2020	1700 North	2200 West	I-215 Overpass	\$	-	\$202,600	\$526,560
	2200 West	470 North	600 North	\$	-	\$323,960	
2021	11th Ave	Terrace Hills Dr	Virginia St	\$	-	\$385,760	\$2,693,160
	200 East	200 South	400 South	\$	-	\$490,960	
	300 South	West Temple St	Main St	\$	-	\$91,160	
	400 East	200 South	400 South	\$	-	\$434,680	
	600 East	200 South	400 South	\$	-	\$321,240	
	800 South	600 West	500 West	\$	-	\$197,320	
	900 East	200 South	500 South	\$	-	\$628,400	
	1700 South	1100 East	1200 East	\$	-	\$143,640	
2022	Amelia Earhart Dr	5600 West	Admiral Byrd Rd	\$	-	\$184,200	\$1,491,040
	Harold Gatty Dr	Challenger Rd	Wright Brothers Dr	\$	-	\$251,600	
	Main St	2100 South	Hartwell Ave	\$	-	\$219,160	
	200 West	600 South	500 South	\$	-	\$137,120	
	2100 South	200 East	500 East	\$	-	\$416,560	
	2100 South	3480 West	3730 West	\$	-	\$282,400	
2023	Emigration Canyon Rd	Rotary Glen Park	City Limit	\$	-	\$473,080	\$1,645,240
	200 South	1500 West	Navajo St	\$	-	\$306,120	
	200 South	500 West	400 West	\$	-	\$328,320	
	400 South	1000 West	900 West	\$	-	\$206,680	
	700 East	South Temple St	100 South	\$	-	\$331,040	
2024	400 West	400 North	500 North	\$	-	\$220,080	\$1,259,960
	500 South	500 East	600 East	\$	-	\$303,880	
	900 West	400 North	500 North	\$	-	\$123,120	
	900 East	900 South	800 South	\$	-	\$194,520	
	1300 South	600 East	700 East	\$	-	\$174,200	
	2100 South	2100 East	Berkley St	\$	-	\$244,160	
This plan will be revaluated annually based on funding and City priorities.						Total	\$7,615,960

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2020	500 N	JORDAN RIVER	REDWOOD RD	\$186,274	\$2,794,181
	ARIES CIR	CULDESAC END	NEW STAR DR	\$193,975	
	BRIARCLIFF AVE	AMERICAN BEAUTY DR	AUTUMN AV	\$147,286	
	COATSVILLE AVE	800 E	900 E	\$251,049	
	DUPONT AVE	CAPISTRANO DR	AMERICAN BEAUTY DR	\$209,736	
	DUPONT AVE	CAROUSEL ST	1500 W	\$229,937	
	ELIZABETH ST	CRYSTAL AV	STRATFORD AV	\$122,209	
	ELIZABETH ST	STRATFORD AV	WHITLOCK AV	\$132,387	
	HASLAM CIR	CULDESAC END	GARNETTE ST	\$75,267	
	KENSINGTON AVE	1400 E	1500 E	\$223,691	
	PARKWAY AVE	ELIZABETH ST	HIGHLAND DR	\$121,678	
	RAMONA AVE	900 E	LINCOLN ST	\$86,240	
	RAMONA AVE	LINCOLN ST	1000 E	\$133,535	
	TALISMAN DR	800 N	1200 W	\$288,113	
	TALISMAN DR	CULDESAC END	CORNELL ST	\$139,477	
	ZENITH AVE	800 E	900 E	\$253,329	

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2021	1900 E	SUNNYSIDE AV	900 S	\$140,801	\$3,269,305
	200 N	400 W	W TERMINUS END	\$180,606	
	ALTA ST	2ND AV	3RD AV	\$108,932	
	ALTA ST	3RD AV	FEDERAL HEIGHTS DR	\$212,668	
	BLAINE AVE	NEVADA ST	FOOTHILL DR	\$514,874	
	CAMBRIDGE WAY	CHANDLER DRIVE	TOMAHAWK DR	\$420,559	
	GREENWOOD TER	900 S	SUNNYSIDE AV	\$105,601	
	FOLSOM AVE	900 W	1000 W	\$513,333	
	KENSINGTON AVE	KEN REY ST	2100 E	\$385,770	
	L ST	7TH AV	8TH AV	\$155,347	
	L ST	9TH AV	10TH AV	\$149,095	
	M ST	3RD AV	4TH AV	\$163,352	
	NEVADA ST	WILSON AV	BLAINE AV	\$111,276	
	WALL ST	COLUMBUS ST	400 N	\$107,091	

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2022	800 W	ARAPAHOE AV	600 S	\$191,476	\$2,916,038
	800 W	ARAPAHOE AV	700 S	\$218,109	
	800 W	700 S	800 S	\$423,512	
	800 W	800 S	900 S	\$399,162	
	BRYAN AVE	800 E	900 E	\$310,153	
	INDUSTRIAL RD	2100 S	ASSOCIATED AVE	\$401,643	
	JEFFERSON ST	S TERMINUS END	1400 S	\$80,300	
	KENSINGTON AVE	800 E	900 E	\$308,933	
	LIBERTY AVE	LAKE ST	800 E	\$81,454	
	PARAMOUNT AVE	300 W	TERMINUS	\$262,167	
	ROOSEVELT AVE	600 E	700 E	\$239,128	
2023	100 S	600 W	500 W	\$696,337	\$2,825,621
	1000 E	ATKIN AV	2700 S	\$327,363	
	1700 E	1300 S	SHERMAN AVE	\$176,000	
	640 S	IVERSON ST	CONWAY CT	\$49,804	
	DALLIN ST	COUNTRY CLUB DR	STRINGHAM AV	\$371,763	
	GREGSON AVE	900 E	LINCOLN ST	\$127,494	
	LINCOLN ST	ELM AV	2100 S	\$244,435	
	MEADOW LN	GREEN ST	700 E	\$61,644	
	PIERPONT AVE	400 W	300 W	\$182,269	
	RICHARDS ST	900 S	800 S	\$405,280	
	UNIVERSITY ST	600 S	700 S	\$183,231	

Local Street Reconstruction Candidates

Year	Street	From	To	Cost	Total for Year
2024	18TH AVE	LITTLE VALLEY RD	TERRACE HILLS DR	\$156,924	\$3,194,638
	BONNEVIEW DR	1500 E	MICHIGAN AVE	\$305,250	
	COUNTRY CLUB CIR	PARLEYS CANYON BLVD	TERMINUS	\$133,833	
	DE SOTO ST	GIRARD AV	N TERMINUS END	\$317,145	
	DEVONSHIRE DR	SUNSET OAKS DR	LANCASTER DR	\$623,231	
	KENSINGTON AVE	WASATCH DR	INDIAN HILLS CIR	\$274,482	
	KRISTIANNNA CIR	VIRGINIA ST	E CULD AC END	\$292,344	
	OQUIRRH DR	OAK HILLS WY	ST MARYS WY	\$581,727	
	PERRY AVE	TRAFFIC -Y-	SIGSBEE TRAF CIR	\$116,446	
	PERRY AVE	VIRGINIA ST	LAUREL ST	\$144,856	
	PERRYS HOLLOW RD	TOMAHAWK DR	NEW BONNEVILLE PL (PVT)	\$75,171	
	SIGSBEE AVE	SIGSBEE TRAF CIR	SIGSBEE TRAF CIR INCLUSIVE	\$112,534	
	WEST CAPITOL ST	ZANE AV	GIRARD AV	\$60,695	
2025	600 S	900 W	800 W	\$746,984	\$1,997,963
	EMILY CIR	S TERMINUS END	800 N	\$48,876	
	GARNETTE CIR	W CULDESAC END	GARNETTE ST	\$65,516	
	GOODWIN CIR	W CULDESAC END	GARNETTE ST	\$54,420	
	IRVING ST	S CULDESAC END	800 N	\$96,787	
	NEBULA WAY	W TERMINUS END	SILVER STAR DR	\$70,430	
	PARK ST	BROWNING AV	SHERMAN AV	\$222,546	
	PRINCETON AVE	1100 E	DOUGLAS ST	\$389,756	
	REDONDO AVE	600 E	700 E	\$210,658	
	VAN NESS PL	400 E	E TERMINUS END	\$91,990	
2026	1100 W	HAYES AVE	AMERICAN AVE	\$200,000	\$200,000
This plan will be revaluated annually based on funding and City priorities.				Total	\$17,197,747

Local Street Overlay Candidates

Year	Street	From	To	Cost	Total for Year
2020	12th Ave	J St	K St	\$55,680	\$1,790,680
	1300 East Frontage Rd	Stratford Ave	1300 East	\$68,240	
	1400 East	3000 South	Hudson Ave	\$42,320	
	1900 East	Parleys Canyon Blvd	Wilmington Ave	\$96,760	
	5th Ave	C St	E St	\$131,680	
	6th Ave	D St	E St	\$70,120	
	800 West	100 South	South Temple St	\$158,400	
	800 West	Paxton Ave	California Ave	\$124,200	
	8th Ave	E St	G St	\$134,480	
	Beverly St	Claybourne Ave	2700 South	\$58,280	
	C St	7th Ave	9th Ave	\$135,520	
	Crandall Ave	1400 East	1500 East	\$98,680	
	Driggs Ave	Highland Dr	1300 East	\$116,120	
	Glenmare St	2700 South	Stratford Ave	\$161,280	
	J St	13th Ave	Northcrest Dr	\$13,920	
	Jeremy St	600 South	500 South	\$119,920	
	Lynwood Dr	2500 East	Parleys Way	\$113,600	
	Mary Dott Way	Melbourne St	Preston St	\$91,480	
2021	1200 East	Gilmer Dr	900 South	\$50,960	\$1,120,320
	1400 East	1700 South	Kensington Ave	\$147,640	
	1600 East	Bryan Ave	Emerson Ave	\$130,520	
	1600 East	Harrison Ave	Sherman Ave	\$34,440	
	800 East	Harrison Ave	1300 South	\$95,920	
	Belmont Ave	900 East	1000 East	\$126,640	
	Bryan Ave	600 East	700 East	\$107,160	
	Glenmare St	Harrison Ave	Sherman Ave	\$45,640	
	Herbert Ave	1000 East	McClelland St	\$29,000	
	Kelsey Ave	200 East	300 East	\$112,480	
	Lake St	Belmont Ave	Princeton Ave	\$155,960	
	Westmoreland Dr	1500 East	Filmore St	\$83,960	

Local Street Overlay Candidates					
Year	Street	From	To	Cost	Total for Year
2022	2100 South	Redwood Rd	Empire Rd	\$376,400	\$1,694,360
	3200 West	Directors Row	California Ave	\$389,920	
	400 East	2100 South	Hollywood Ave	\$107,840	
	900 South	Foothill Dr	2000 East	\$43,840	
	Cannon Ave	Natura St	1000 West	\$49,960	
	Emery St	Dalton Ave	Mead Ave	\$76,480	
	Glendale Dr	Navajo St	Bell Ave	\$106,360	
	Michigan Ave	1500 East	Fairview Ave	\$108,600	
	Park St	Ramona Ave	Downington Ave	\$125,360	
	Rosewood Ave	200 East	300 East	\$91,960	
	Wilson Ave	300 East	400 East	\$126,000	
	Yale Ave	1900 East	2000 East	\$91,640	
2023	1000 West	200 South	100 South	\$116,680	\$1,580,880
	1000 West	500 South	400 South	\$123,760	
	1st Ave	O St	P St	\$65,600	
	1st Ave	T St	U St	\$64,920	
	2nd Ave	N St	O St	\$67,160	
	2nd Ave	P St	Q St	\$66,560	
	2nd Ave	U St	Virginia St	\$54,320	
	4th Ave	K St	L St	\$55,600	
	Federal Heights Dr	Alta St	Federal Heights Cir	\$272,960	
	Glen Oaks Dr	Scenic Dr	Belaire Dr	\$94,280	
	J St	South Temple St	1st Ave	\$69,520	
	M St	4th Ave	5th Ave	\$53,880	
	Pierpont Ave	1200 West	1100 West	\$84,280	
	Promontory Dr	Summit Cir	Scenic Dr	\$84,400	
	Pueblo St	Terminus	900 South	\$39,320	
	Q St	South Temple St	1st Ave	\$50,400	
	Sigsbee Ave	Sigsbee Traffic Circle	Military Traffic Circle	\$41,960	
	T St	3rd Ave	4th Ave	\$55,240	
	U St	1st Ave	2nd Ave	\$45,160	
	Yuma St	Emerson Ave	St Marys Dr	\$74,880	

Local Street Overlay Candidates

Year	Street	From	To	Cost	Total for Year
2024	600 North	600 West	600 North Overpass	\$66,000	\$1,093,480
	Connor St	Westminster Ave	Downington Ave	\$102,600	
	Crestview Dr	Oak Hills Way	Vista View Dr	\$281,080	
	Denver St	Gudgell Ct at 729 South	800 South	\$36,040	
	Dickens Pl	Donner Way	Terminus	\$46,480	
	East Capitol Blvd	Edgecombe Dr	South Sandrun Rd	\$237,280	
	Kensington Ave	2300 East	Foothill Dr	\$86,760	
	Northvale Way	Terrace Hills Dr	Terminus	\$30,560	
	Wilton Way	Canterbury Dr	Sherwood Dr	\$206,680	
This plan will be revaluated annually based on funding and City priorities.				Total	\$7,279,720

Summary					
	Arterial & Collector Reconstruction	Arterial & Collector Overlay	Local Street Reconstruction	Local Street Overlay	Yearly Totals
2020	\$4,800,000	\$526,560	\$2,794,181	\$1,790,680	\$9,911,421
2021	\$16,250,000	\$2,693,160	\$3,269,305	\$1,120,320	\$23,332,785
2022	\$14,600,000	\$1,491,040	\$2,916,038	\$1,694,360	\$20,701,438
2023	\$14,400,000	\$1,645,240	\$2,825,621	\$1,580,880	\$20,451,741
2024	\$8,300,000	\$1,259,960	\$3,194,638	\$1,093,480	\$13,848,078
2025	\$9,500,000		\$1,997,963		\$11,497,963
2026	\$2,800,000		\$200,000		\$3,000,000
Method Totals	\$70,650,000	\$7,615,960	\$17,197,747	\$7,279,720	\$102,743,427

This plan will be revaluated annually based on funding and City priorities.

Appendix A: Descriptions and Photos of Pavement Condition Classifications

Overall Pavement Condition (OCI) Ratings Examples

The following pages present examples of roadway maintenance strategies that would be recommended based on the stated roadway pavement condition.

Pavement Condition: Good

Recommended Maintenance Strategy: Pavement requires only minor or no maintenance activities over the next five years



Pavement Condition: Satisfactory (Minor cracking and oxidation)

Recommended Maintenance Strategy: Slurry Seal



Pavement Condition: Fair (Significant cracking and oxidation)

Recommended Maintenance Strategy: Chip Seal



Pavement Condition: Poor (Major cracking, rutting, and oxidation)

Recommended Maintenance Strategy: Rehabilitation (Overlay)



Pavement Condition: Very Poor (Major cracking, patches, and sunken pavement)

Recommended Maintenance Strategy: Reconstruction



Pavement Condition: Serious and Failed (Pavement has failed – ongoing repairs needed to maintain the roadway in a safe passable condition)

Recommended Maintenance Strategy: Reconstruction



Crack Sealing

Hot rubberized sealant to prevent water intrusion.



Slurry Sealing

Mixture of small rock, asphalt, cement and water.



Chip Sealing

Fine gravel, evenly spread, covered by liquid asphalt.



Asphalt Overlay

Removal of top layer and replaced with new asphalt.



Reconstruction

Rebuild of entire road structure.

