



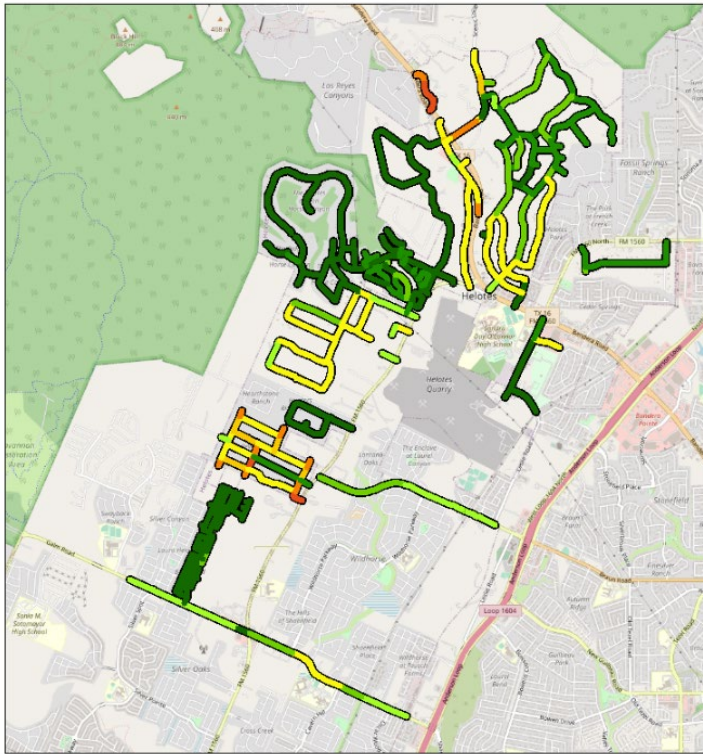
2024 Street Maintenance Plan

City of Helotes Public Works
Department

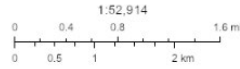
2023 Street Maintenance Plan Review

Street Name	Activity	Total Square Ft	Cost Per Sq. Ft	Estimated Cost
Leslie Rd	Mill and Overlay	95,725	\$3.42	\$327,738
City Hall Parking	Seal Coating	57,420	\$0.23	\$13,158
City Hall Parking	Street Marking	7785.30	\$0.41	\$3,216
Riggs Road Parking	Seal Coating	25,500	\$0.25	\$6,475
Riggs Road Parking	Street Marking	5,400	\$0.31	\$1,681
	Total			\$352,270

OCI Map



September 21, 2023

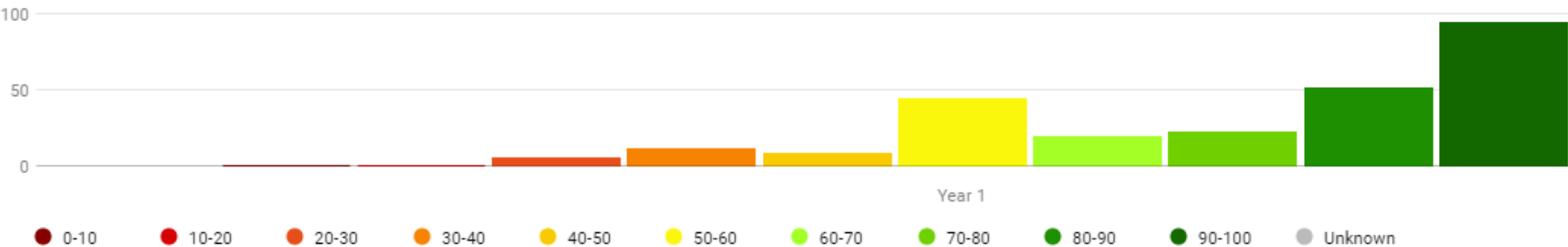


OCI Conditions

This is a quick overview of the OCI conditions of the City of Helotes's maintained streets.



Asset Count By Beginning Estimated OCI Range



Activity	Impact	Unit
JT/Crack Seal	5	%
Mastic Surface Treatment	60	%
Scrub Seal	60	%
Micro Surfacing/HA5	85	%
Mill/ Overlay	100	Absolute
One Course surface Treatment	85	Absolute
Overlay Chip Seal	95	Absolute

Pavement Condition Index

- **Pavement Condition Index (PCI)**- a numerical index between 0 and 100 which is used to indicate the general condition of a street or pavement segment.
- **Activity**- Road maintenance option programmed into Cartegraph.
- **Impact Amount**- The amount of impact on the each Activity has on the PCI.
- **Unit**- There are two different units of impact that affect the PCI.
 - 1. Percentage: Percentage of increase on current PCI of the Asset.
 - 2. Absolute: Exact PCI point score for the Asset.

Condition Category Ride Quality

Activity	Impact	Unit
JT/Crack Seal	1	%
Mastic Surface Treatment	60	%
Scrub Seal	60	%
Micro Surfacing/HA5	100	Absolute
Mill/ Overlay	100	Absolute
One Course surface Treatment	100	Absolute
Overlay Chip Seal	100	Absolute

- **Ride Quality-** Score from Zero to One Hundred on smoothness of ride for the street.
- **Activity-** Road maintenance option programmed into Cartegraph.
- **Impact Amount-** The amount of impact on the each Activity has on the PCI.
- **Unit-** There are two different units of impact that affect the PCI.
 - 1. Percentage: Percentage of increase on current PCI of the Asset.
 - 2. Absolute: Exact PCI point score for the Asset.

Overall Condition Index (OCI)

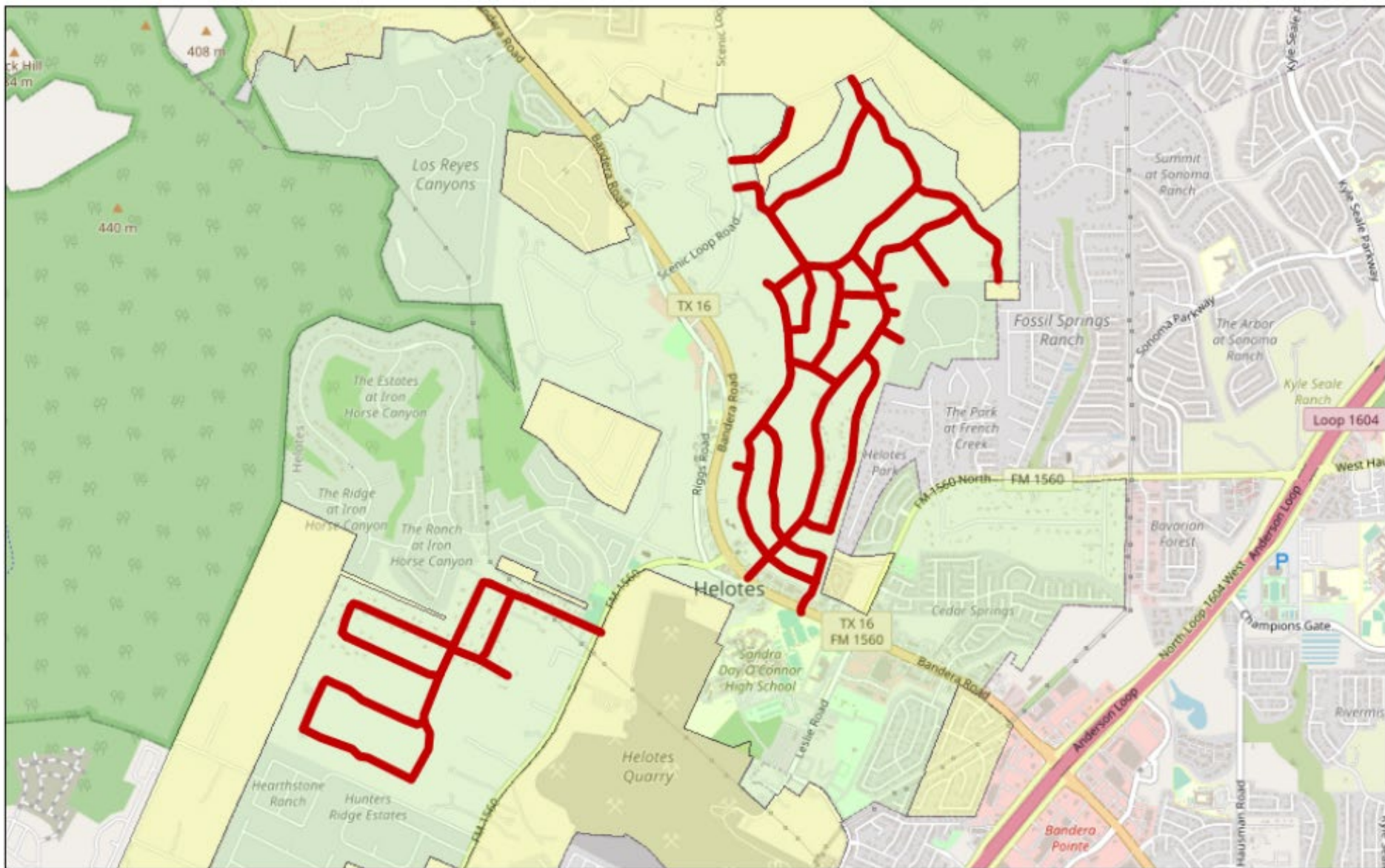
Asset Estimated OCI Calculations:

- The estimated OCI for an asset is calculated by taking into account the asset's age, predicted performance, and inspections and tasks performed on the asset. Using this data, the estimated OCI for the asset is determined.

2024 Recommended Activities

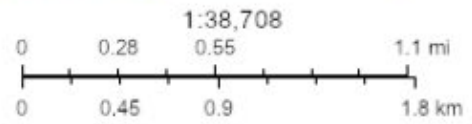
Street Name	Activity	Total Ft	Cost Per Ft	Estimated Cost
Scenic Loop Rd	JT/Crack Seal	4,306	\$1.07	\$4,607
Helotes Park Estates	JT/Crack Seal	50,058	\$1.07	\$53,562
Helotes Ranch Acres	JT/Crack Seal	20,614	\$1.07	\$22,056
Helotes Park Estates/ Helotes Ranch Acres	Edge of Road Repair	6 Hoppers if blow in cheap seal	\$1,875 per hopper	\$11,250
Total:				\$91,476

2024 JT/Crack Seal



October 6, 2023

— Pavement



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Benefits of Crack Routing:

By routing a working crack to a 1/2" X 1/2" width / depth, a clean reservoir is created to allow the hot rubberized crack sealer to bond properly to the walls of the crack. During the winter months when the cracks are expanding, the reservoir has already taken the place of the expansion and will remain sealed.

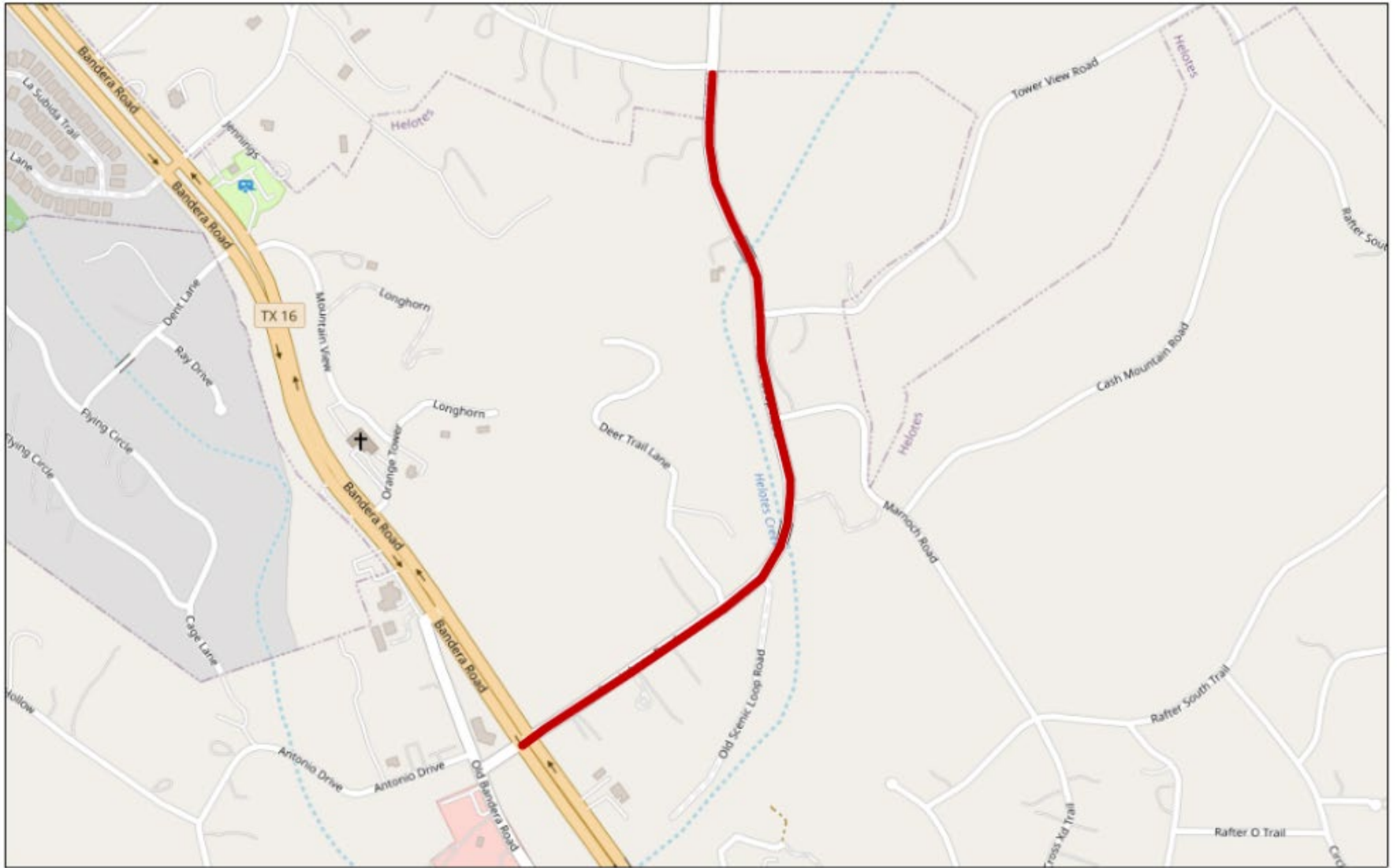
Preferred Technologies for Street Maintenance- Crack Seal

- Crack treatment, including crack sealing, crack filling, and crack repair, is one of the most common maintenance activities performed on pavements.
- Crack sealing is the method of placing material in a crack to create a watertight barrier.
- Sealing cracks in asphalt pavements have long been regarded as an annual preventive maintenance procedure.

2024 Recommended Activities

Street	Activity	Quantity	Sq. Ft. Cost	Estimated Cost
Scenic Loop	Scrub Seal	142,127 sq. ft	\$0.55	\$78,169
Scenic Loop	Level Up (as needed)	250 Tons	\$170.50 Per Ton	\$42,625
Scenic Loop	Micro Surfacing	142,127 sq. ft	\$0.50	\$71,063
Scenic Loop	Street Marking	13,645 ft	\$2.58	\$35,219
Total:				\$227,077

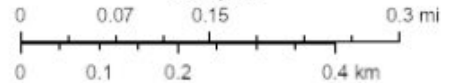
2024 Scrub Seal & Micro



October 6, 2023

— Pavement

1:10,096



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Street Maintenance - Scrub Seal



Scrub Seal: repairs the following problems

- Roadway oxidation
- Longitudinal cracking, Transverse cracking, and Fatigue cracking
- Eliminates Raveling

What is Scrub Seal: Scrub Seal is an anionic charged polymer modified asphalt emulsion. It is used to reactivate old oil in aging asphalt and to seal smaller cracks not covered by crack sealing. Also, it provides a non-permeable layer to protect against water penetrating in the road base and subgrade.

Micro-Surfacing





Highly Polymer-Modified (HPM) mixtures can use 7% to 8% polymer to create a more integrated polymer chain network, which improves rutting and fatigue.

Street Maintenance - Micro Surfacing

What is Micro Surfacing?

- Micro surfacing is a highly polymer modified surfacing system that protects asphalt pavements and increases the durability of roads.
- Micro Surfacing offers a greater resistance to damage than other surfacing applications by providing a tougher surface that will minimize the road's vulnerability.
- Micro surfacing is typically used as a preventive maintenance solution for roads in moderately good condition, in order to raise their Pavement Condition Index levels and keep them in good condition longer.
- Micro surfacing – more resistant to cracking and raveling.



Street Maintenance - Street Markings

Hot-applied Thermoplastic:

- Hot-applied thermoplastic is a solid compound containing pigments, glass beads, binder and filler which becomes liquid when heated.
- It offers many important benefits in terms of road safety including its high level of wet night visibility and the fact that it can be applied as both flat and structured markings.
- The long lifespan of thermoplastic markings furthermore makes them a cost-effective solution as they demand less frequent maintenance or replacement.

2024 Additional Activities

Street Name	Activity	Estimated Cost
Circle A	Drainage Construction (Ardurra)	\$85,000
Parrigin	Drainage Construction (Ardurra)	\$65,000
Old Bandera Rd	Bridge Resurfacing	\$47,459
Shaenfield	In-Street Drainage Scoping	\$21,000
Total:		\$218,459

Drainage Improvements

- The low water crossing on Circle A Trail and Parrigin is currently in the design stage of their reconstruction.
- Both drainages have had extensive erosion due to water overtopping the roadway.
- The project will be to minimize water overtopping the road during minimal rain events and, help stop future erosion.



Old Bandera Road Bridge Resurfacing



- The Old Town Bridge's wearing surface thin and the bridge deck is starting to be exposed.
- We are going to resurface the bridge with a Polymer Composite Micro Overlay.
- The treatment will remove all of the old wearing surfaces and provide a new wearing surface for the bridge.

Budget

2024 Street Maintenance Plan
Estimated Cost:

\$ 537,012

Budget

Request approval to initiate the 2024 Street Maintenance Plan in an amount not to exceed:

\$600,000