

Pavement Management and DRAFT 15-yr Capital Improvement Plan

City Council Work Session
April 6, 2021

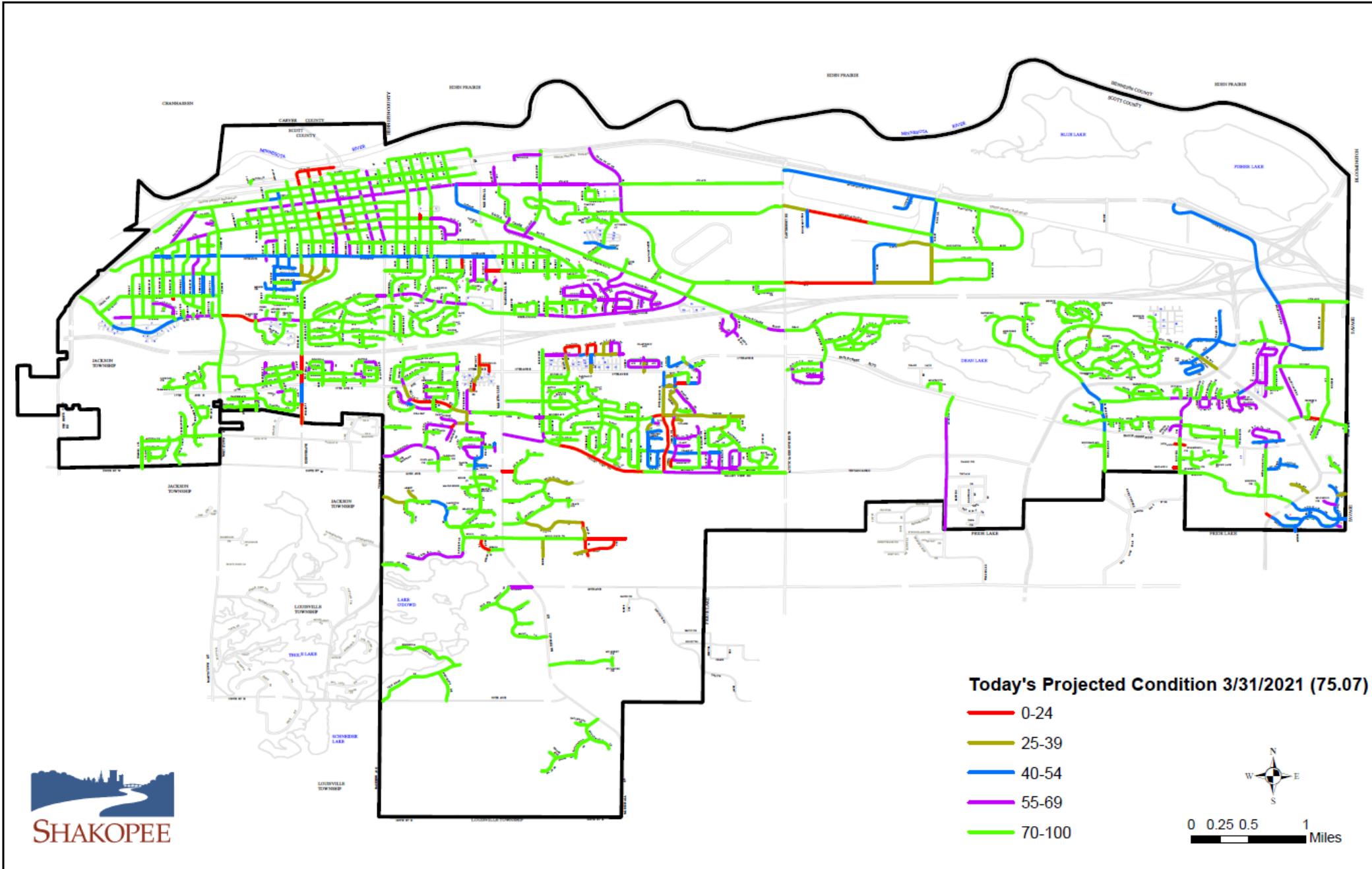


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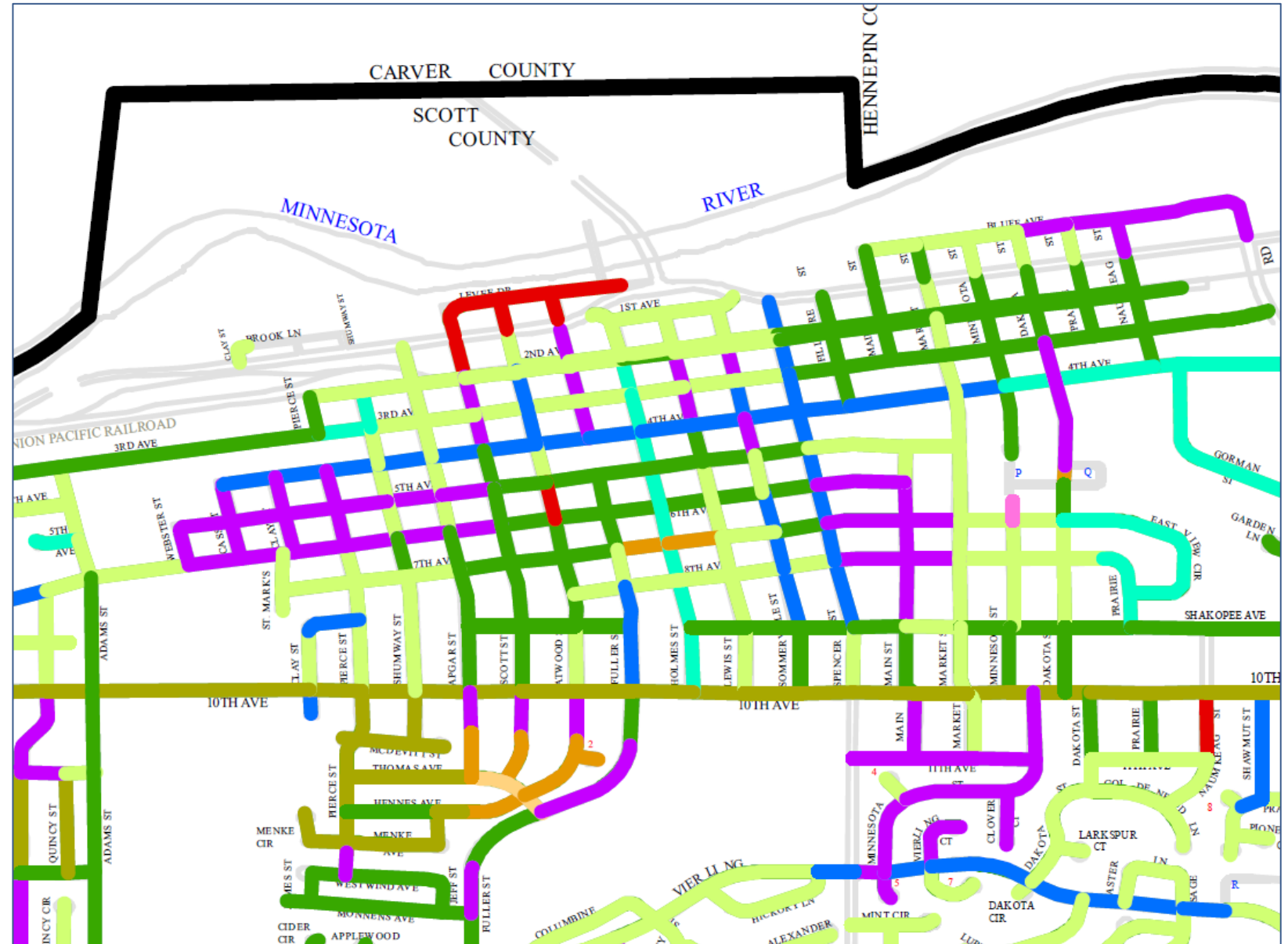
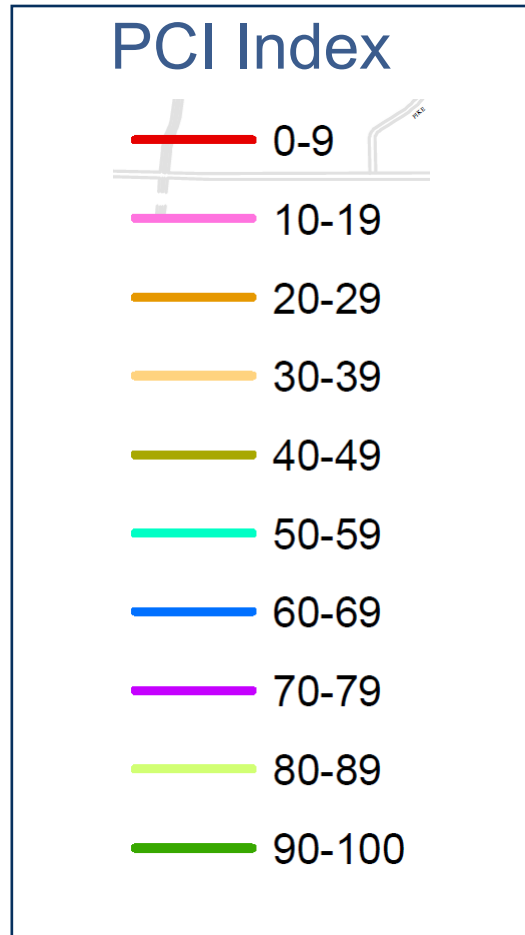
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Pavement Condition Index Map - current 2021 average PCI 75



Pavement Condition Index Map - current 2021 average PCI 75



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Pavement Condition Index rating examples [PCI 90-100]

3rd Avenue (west of Prairie St.)

- PCI 99
- Reconstructed 2016
- Crack sealed
- Chip Sealcoated
- Distresses Observed
 - Little to none



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Pavement Condition Index rating examples [PCI 70-79]

Main Street (north of Shakopee Ave)

- PCI 77
- Reconstructed 2007
- Crack sealed
- Chip Sealcoated
- Distresses Observed
 - Chip seal (slight wear)
 - block/linear cracking (low severity)



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Pavement Condition Index rating examples [PCI 60-69]

Spencer Street (at 3rd Ave)

- PCI 67
- Reconstructed 1993
- Crack sealed
- Chip Sealcoated
- Crack sealed
- Distresses Observed
 - Chip seal (moderate wear)
 - block/linear cracking (moderate severity)
 - Patched areas



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Pavement Condition Index rating examples [PCI 20-29]

Atwood Street (at Atwood Circle)

- PCI 28
- Reconstructed 1997
- Crack sealed
- Chip Sealcoated
- Crack sealed
- Distresses Observed
 - Chip seal (moderate wear)
 - block/linear cracking (high severity)
 - Alligator cracking
 - Pot holes developing



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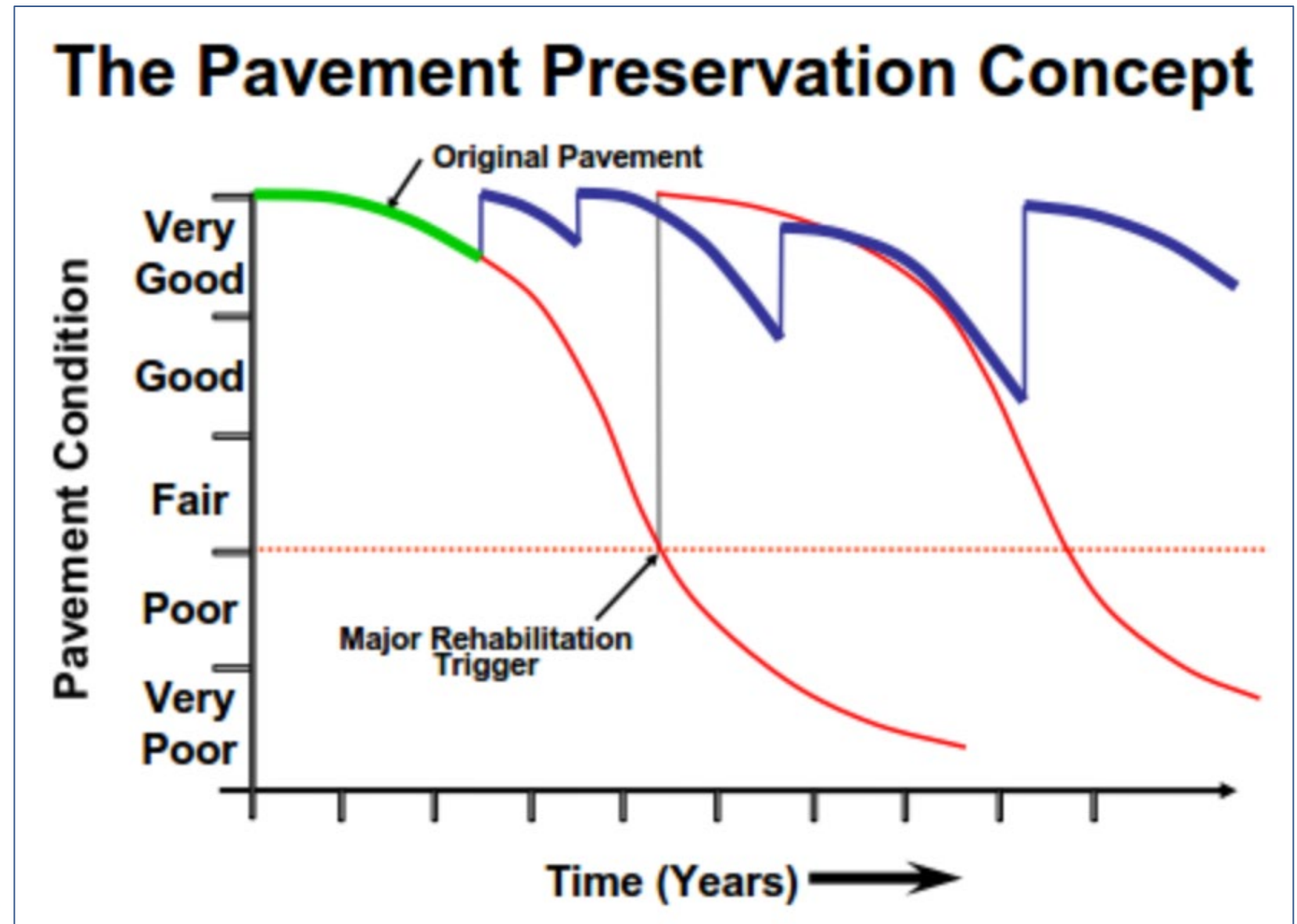
Pavement Condition Index rating examples [PCI 0-9]

Atwood Street (Between 5th and 6th Avenues)

- PCI 0
- Reconstructed 1982
- Crack sealed
- Chip Sealcoated
- Patched, etc.
- Distresses Observed
 - Chip seal (heavy wear)
 - block/linear cracking (high severity)
 - Patched areas (heavy)
 - Pot holes

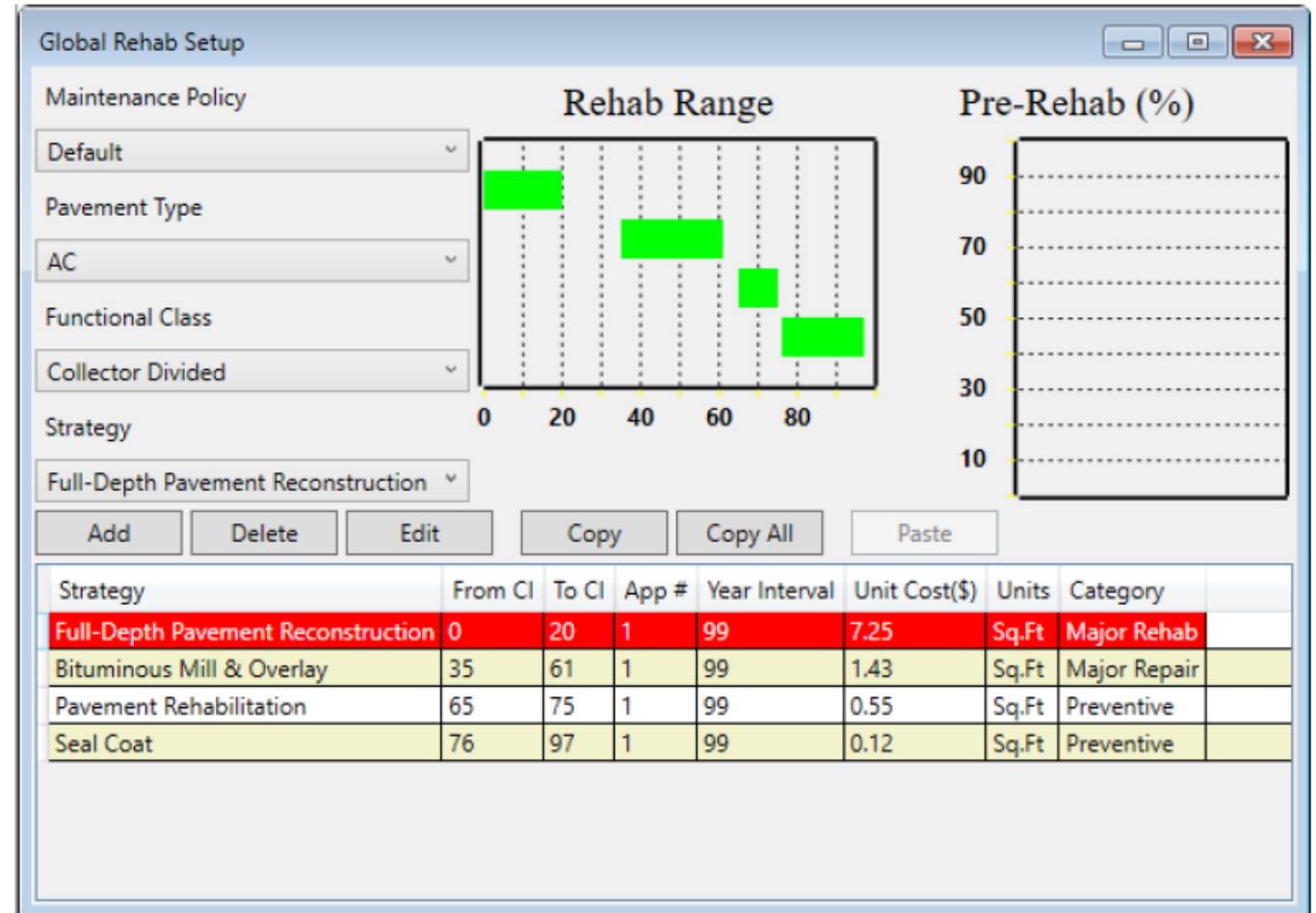


Pavement Performance and Deterioration Curves



Maintenance Strategies

- Full Depth Pavement Reconstruction
- Bituminous Mill and Overlay
- Pavement Rehabilitation (patching, more in-depth crack repair, chip sealcoat)
- Crack seal/Chip Sealcoat



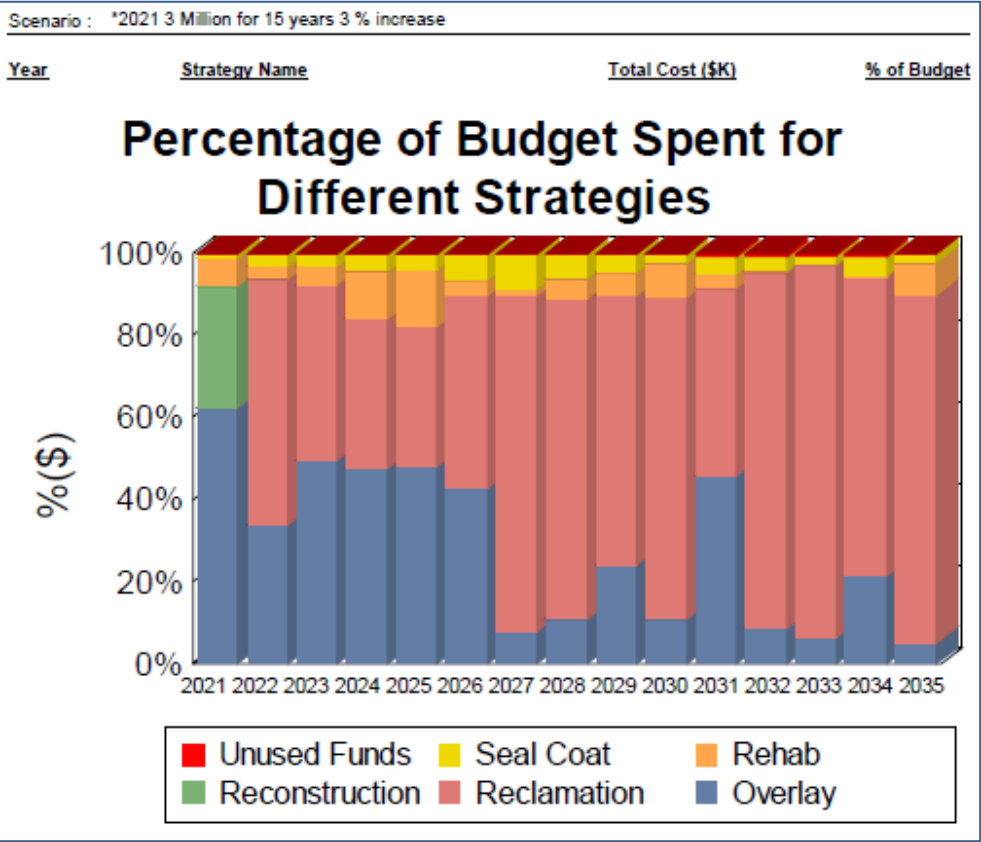
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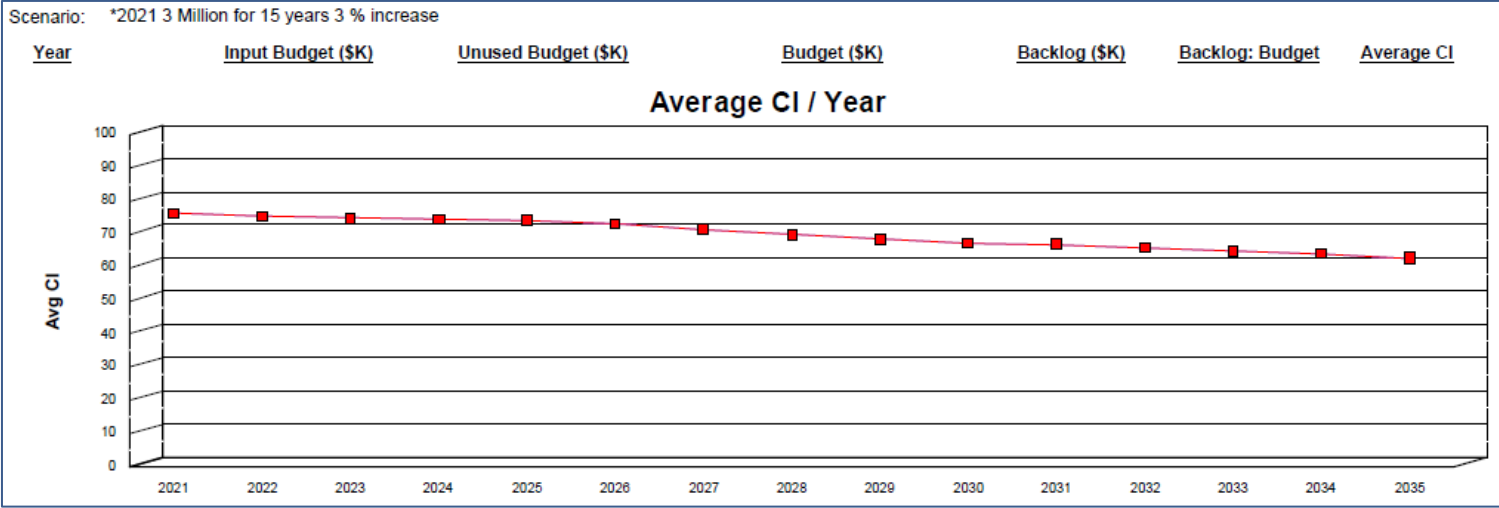
Budget evaluations: \$3 mil/annually for 15 years (3% annual inflation)

PCI 15-yr Average: 67.6
74 → drops to 60



Scenario: *2021 3 Million for 15 years 3 % increase

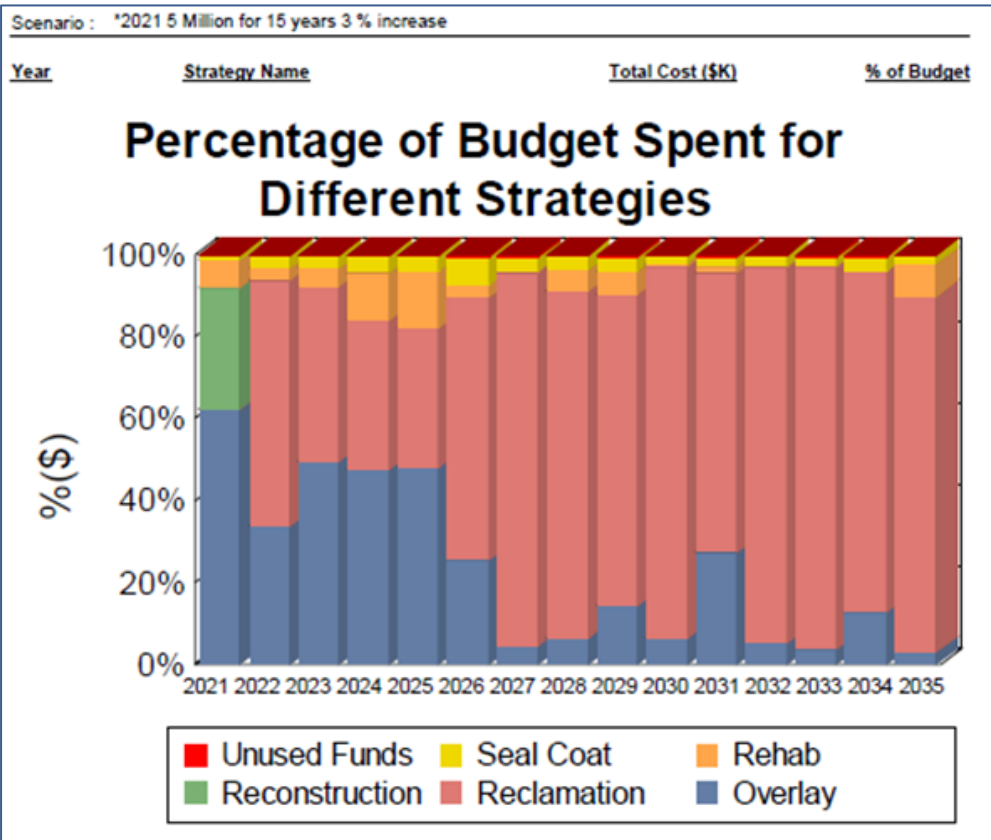
Year	Input Budget (\$K)	Unused Budget (\$K)	Budget (\$K)	Backlog (\$K)	Backlog: Budget	Average CI
2021	4,934	0	4,934	21,780	4.41	74
2022	5,175	0	5,175	18,360	3.55	73
2023	6,187	0	6,187	13,207	2.13	73
2024	4,613	1	4,613	20,094	4.36	72
2025	4,552	0	4,552	20,375	4.48	72
2026	3,478	0	3,478	26,072	7.50	71
2027	3,582	1	3,582	39,216	10.95	69
2028	3,690	0	3,690	52,546	14.24	67
2029	3,801	1	3,800	61,918	16.30	66
2030	3,915	0	3,914	61,605	15.74	65
2031	4,032	28	4,004	73,514	18.36	65
2032	4,153	40	4,112	74,118	18.02	63
2033	4,278	21	4,257	74,015	17.39	62
2034	4,406	31	4,375	78,657	17.98	62
2035	4,538	3	4,535	91,771	20.24	60
Average:	4,356	8	4,347	48,483	11.71	67.6
Total:	65,333	127	65,206	727,248		



Budget evaluations: \$5 mil/annually for 15 years (3% annual inflation)

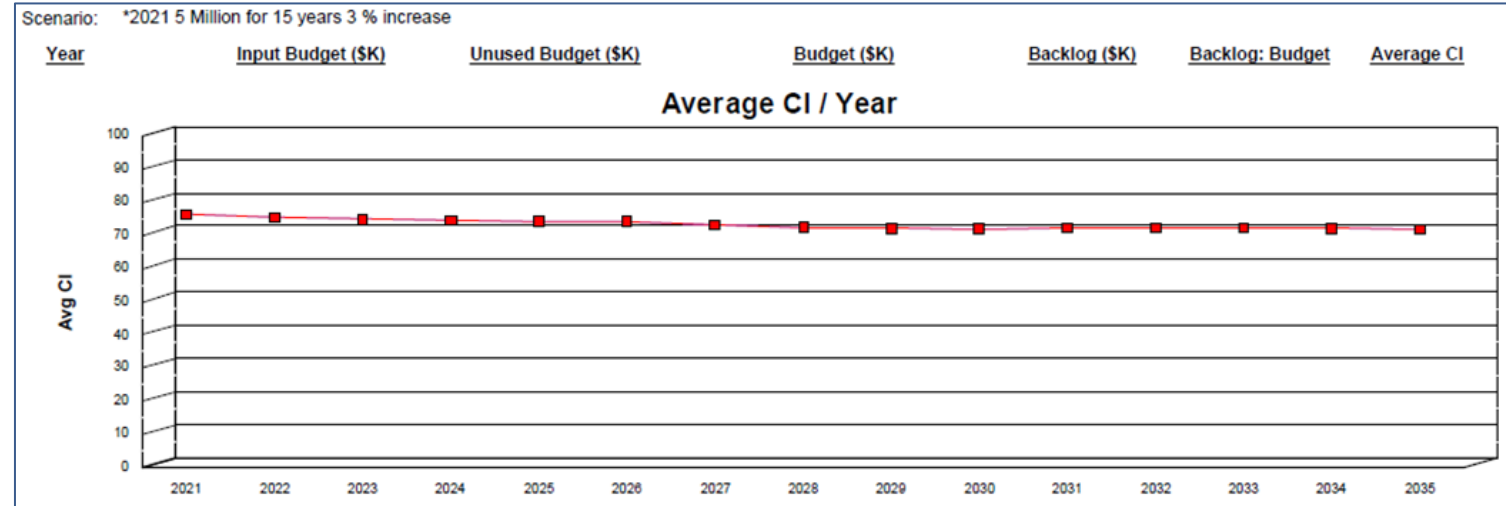
PCI 15-yr Average: 71.0

74 → levels out/maintains at 70



Scenario: *2021 5 Million for 15 years 3 % increase

Year	Input Budget (\$K)	Unused Budget (\$K)	Budget (\$K)	Backlog (\$K)	Backlog: Budget	Average CI
2021	4,934	0	4,934	21,780	4.41	74
2022	5,175	0	5,175	18,360	3.55	73
2023	6,187	0	6,187	13,207	2.13	73
2024	4,613	1	4,613	20,094	4.36	72
2025	4,552	0	4,552	20,375	4.48	72
2026	5,796	21	5,775	23,775	4.12	72
2027	5,970	35	5,935	34,497	5.81	71
2028	6,149	3	6,146	45,230	7.36	70
2029	6,333	35	6,298	51,921	8.24	70
2030	6,523	7	6,516	48,752	7.48	70
2031	6,719	37	6,682	57,639	8.63	70
2032	6,920	7	6,913	55,009	7.96	70
2033	7,127	37	7,090	51,551	7.27	70
2034	7,340	23	7,317	52,626	7.19	70
2035	7,560	3	7,557	61,965	8.20	70
Average:	6,127	14	6,113	38,452	6.08	71.0
Total:	91,899	211	91,688	576,779		



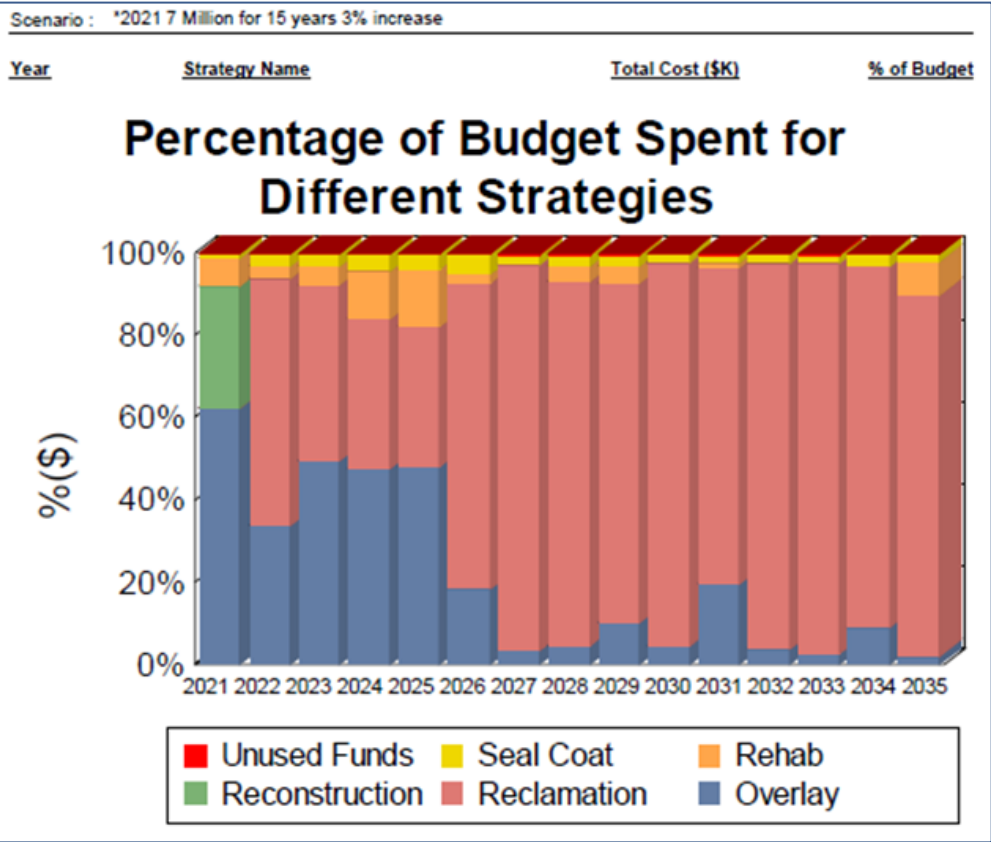
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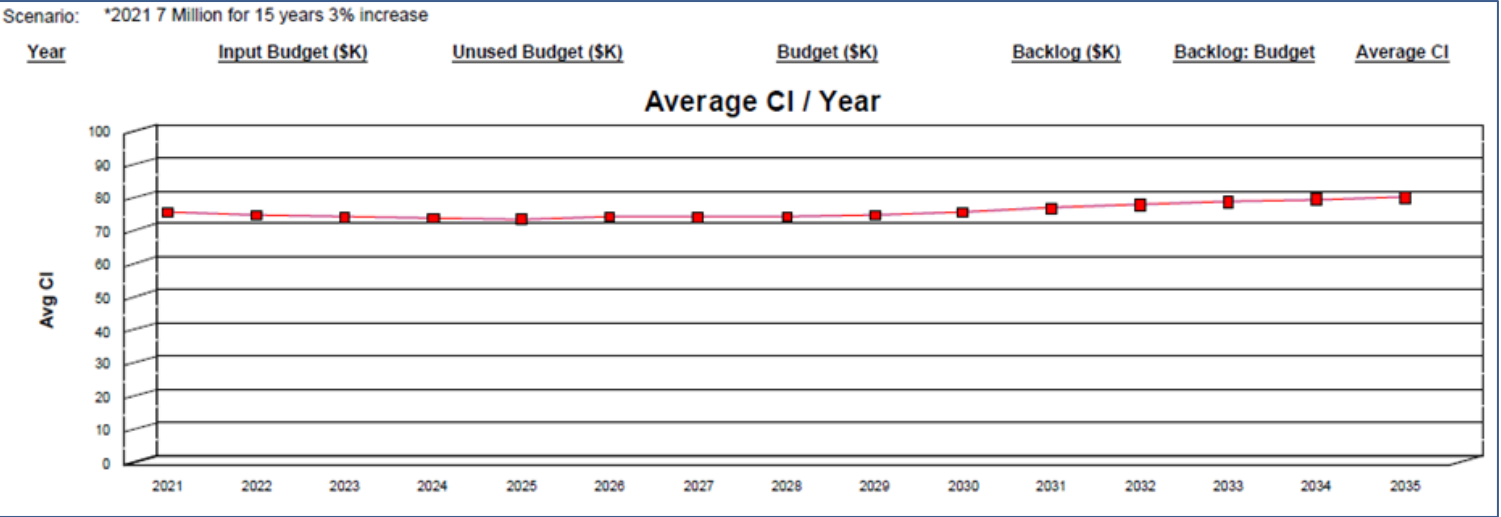
Budget evaluations: \$7 mil/annually for 15 years (3% annual inflation)

PCI 15-yr Average: 74.2
74 → increases to 78



Scenario: *2021 7 Million for 15 years 3% increase

Year	Input Budget (\$K)	Unused Budget (\$K)	Budget (\$K)	Backlog (\$K)	Backlog: Budget	Average CI
2021	4,934	0	4,934	21,780	4.41	74
2022	5,175	0	5,175	18,360	3.55	73
2023	6,187	0	6,187	13,207	2.13	73
2024	4,613	1	4,613	20,094	4.36	72
2025	4,552	0	4,552	20,375	4.48	72
2026	8,104	2	8,102	21,447	2.65	73
2027	8,347	25	8,322	29,713	3.57	73
2028	8,598	41	8,557	37,891	4.43	73
2029	8,855	28	8,827	41,875	4.74	73
2030	9,121	8	9,113	35,851	3.93	74
2031	9,395	36	9,359	41,717	4.46	75
2032	9,677	5	9,672	35,895	3.71	76
2033	9,967	49	9,918	29,081	2.93	77
2034	10,266	0	10,265	26,581	2.59	78
2035	10,574	3	10,571	32,174	3.04	78
Average:	7,891	13	7,878	28,403	3.67	74.2
Total:	118,365	198	118,167	426,041		

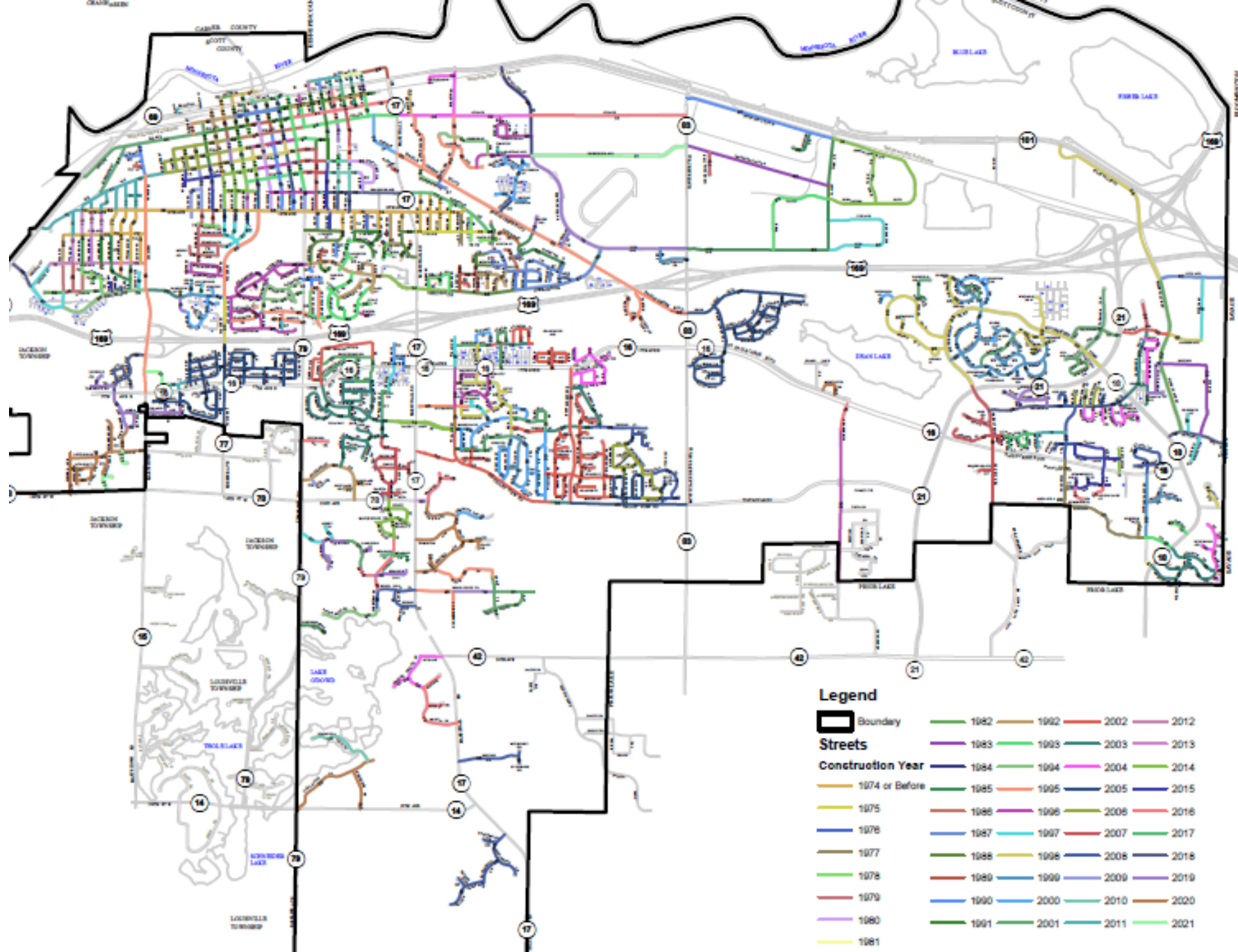


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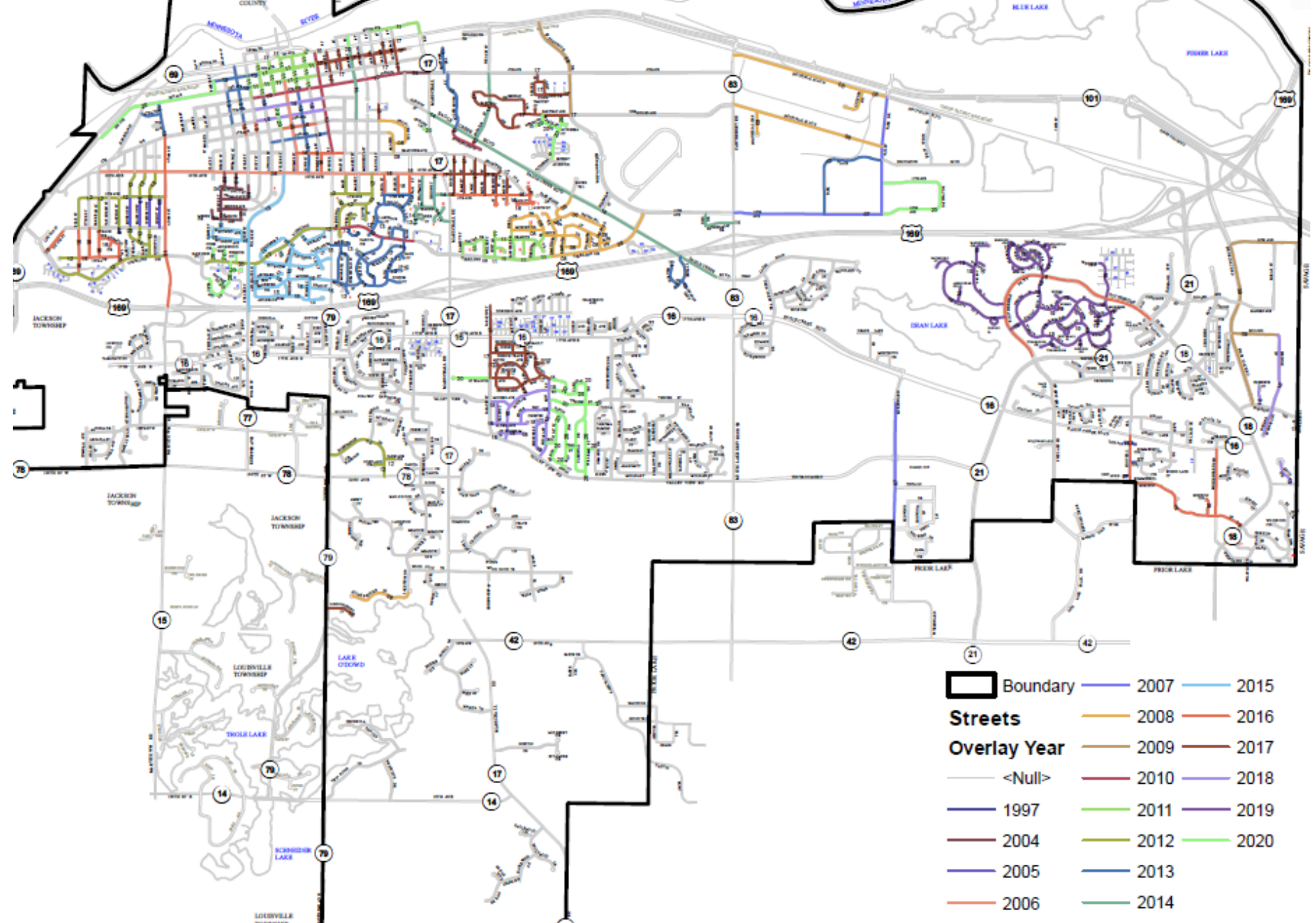
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History: Originally Constructed [YEAR] Map



History: Mill and Overlay Map

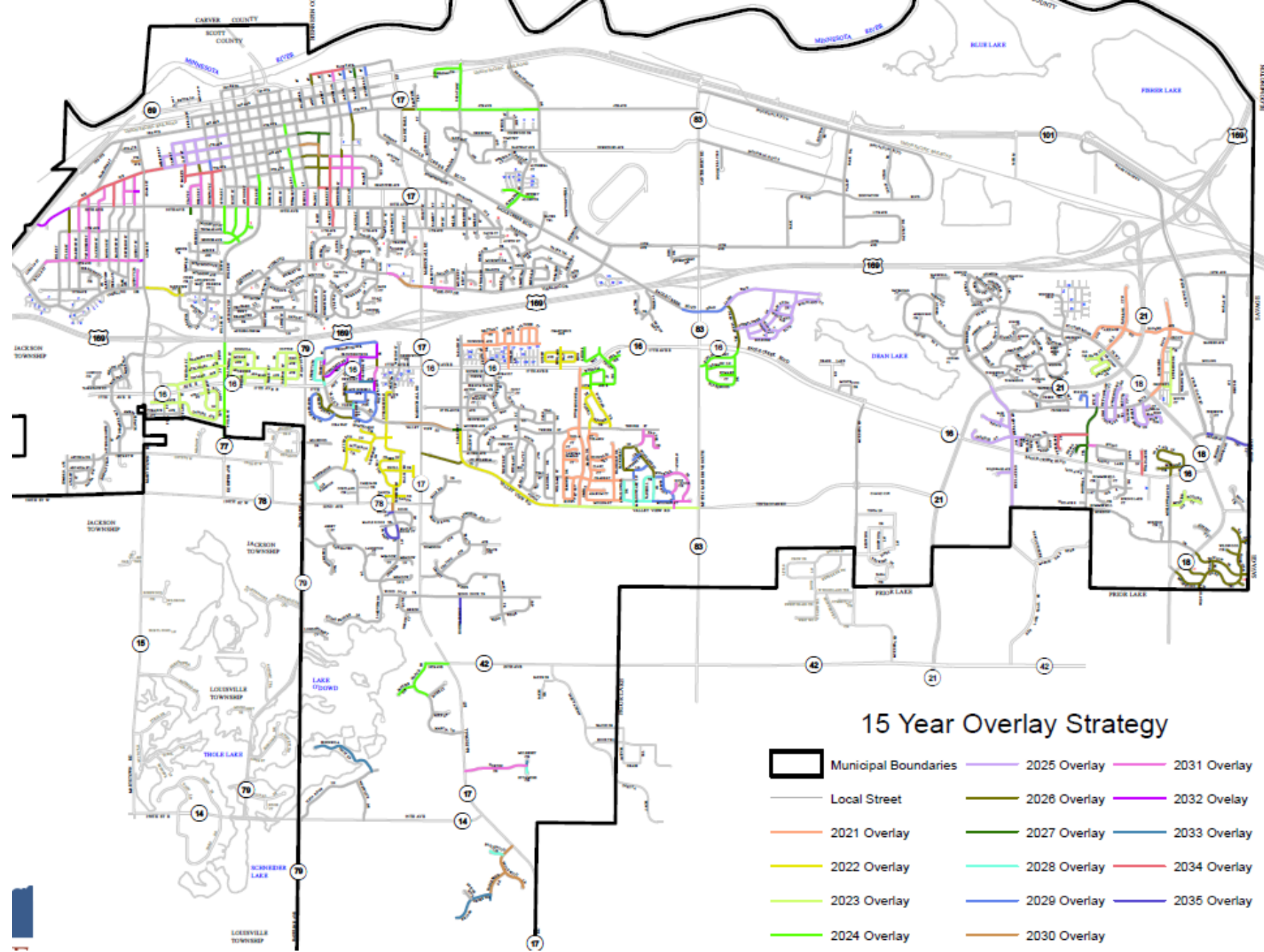


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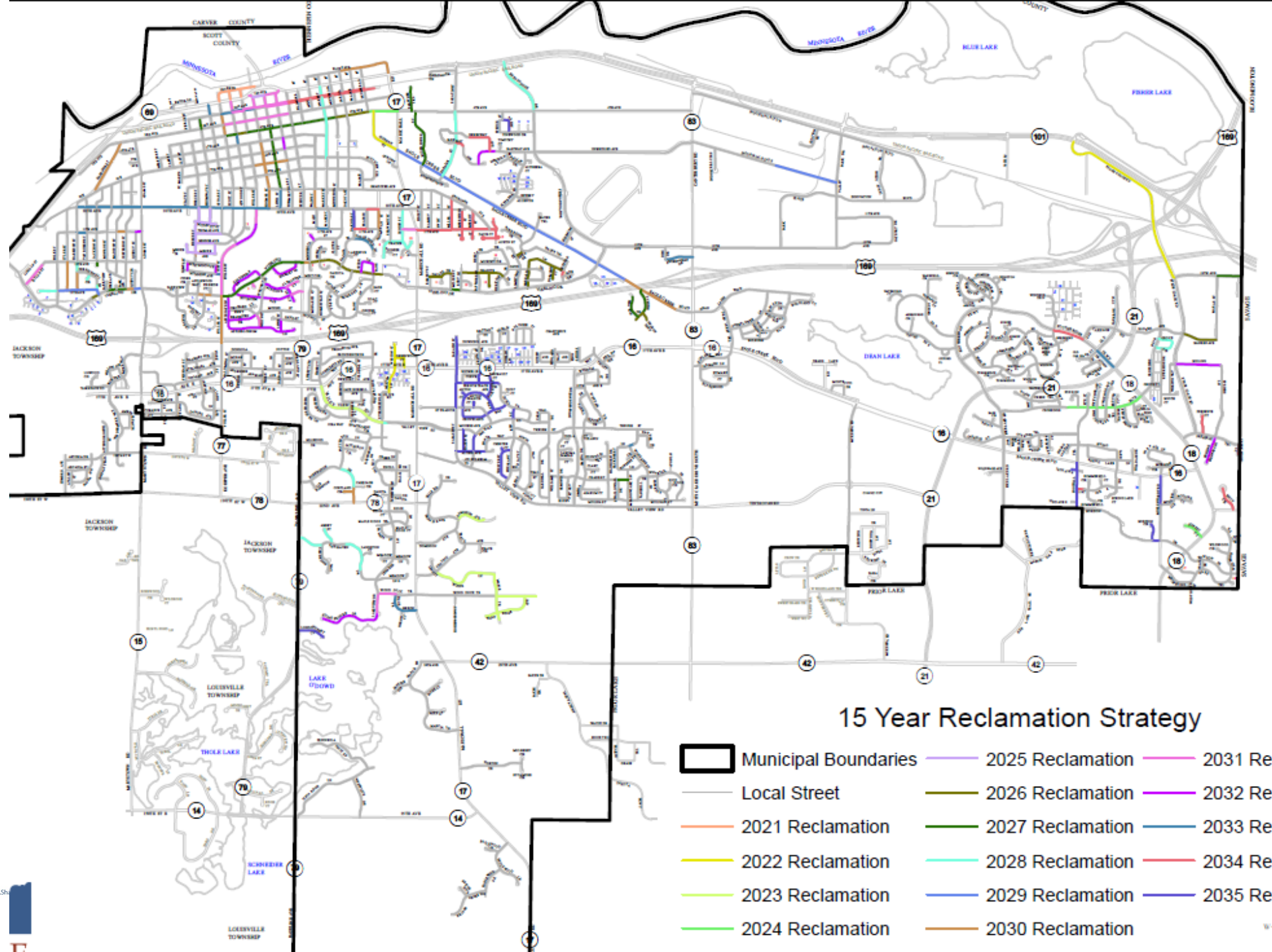
Proposed Overlay Map



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Proposed Full Depth Reclamation Map



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DRAFT 15-yr CIP 2021

Project	Project Number	NOTES	(CIF) Capital Improvement Fund	Special Assessments	MSA Fund	SPUC (Watermain)	Sanitary Sewer Fund	Storm Drainage Fund	Park Development	Park Asset Fund	Building Internal Service Fund	Total Project Cost
2021												
2020 Street & Utility Reconstruction	CIF-20-007		\$1,160,000	\$255,000		\$110,000	\$10,000	\$165,000				\$1,700,000
Alley Reconstruction (Concrete)	CIF-20-009			\$244,000				\$127,000				\$371,000
12th Ave East Reconstruction (Canterbury Commons)	CIF-20-014	A	\$2,100,000									\$2,100,000
Canterbury Areawide Wayfinding (Canterbury Commons)	CIF-20-014	B	\$250,000									\$250,000
CSAH 83 Expansion (Canterbury Commons)	CIF-21-007	C	\$5,665,000									\$5,665,000
Stagecoach Road Intersection Improvements	CIF-21-008			\$1,150,000	\$250,000							\$1,400,000
Annual Pavement Rehabilitation	CIF-21-011		\$140,000									\$140,000
Annual Bituminous Mill and Overlay	CIF-21-012		\$2,700,000									\$2,700,000
Annual Trail Rehabilitation (along roadways)	CIF-21-013		\$135,000									\$135,000
Lift Station #16 Rehab	Sewer-19-001						\$1,387,000					\$1,387,000
SCADA System Upgrade	Sewer-19-005						\$468,000	\$81,000				\$549,000
Utility Extension-Maras St, 13th Ave, Hanson Ave	Sewer-21-001		\$1,002,000	\$3,360,000			\$473,000	\$49,000				\$4,884,000
Decommissioning Whispering Oaks Lift Station	Sewer-21-003						\$75,000					\$75,000
Trunk Sewer Extensions	Sewer 21-005						\$183,000					\$183,000
Annual Erosion/Pond Cleaning/Outlet Imp	Storm-20-001							\$765,000				\$765,000
Drainage and Flood Prevention Imp	Storm-20-002							\$555,000				\$555,000
Public Works Surface Water: Skidsteer Loader	Storm-21-731							\$6,200				\$6,200
Public Works Surface Water: Tractor Slope Mower	Storm-21-732							\$212,000				\$212,000
Public Works Surface Water: Tanker	Storm-21-738							\$225,000				\$225,000
Ridge Creek Park & Prior Lake Outlet Channel Imp	PR-19-001	D						\$1,540,000	\$3,470,000			\$5,010,000
Riverfront Marina	PR-19-002	E							\$145,000			\$145,000
Jennifer Lane Neighborhood Park	PR-20-003								\$274,950			\$274,950
Vierling Greenway Trail (UVDI)	PR-20-004								\$484,000			\$484,000
Trail Wayfinding and Amenities	PR-21-001								\$200,000			\$200,000
Riverside Grove	PR-21-002								\$225,000			\$225,000
Lions Park Renovation	PR-21-004							\$15,000	\$185,000			\$200,000
Windemere Bluff Community Park	PR-21-005								\$600,000			\$600,000
Quarry Lake Park Improvements	PR-21-006								\$350,000			\$350,000
West End Dog Park	PR-21-007								\$210,000			\$210,000
Scenic Heights Master Plan	PR-21-009								\$175,000	\$100,000		\$275,000
Trail Reconstruction	PA-21-01									\$80,000		\$80,000
Fence Replacement	PA-21-02									\$19,000		\$19,000
Tahpah Park Lights (Field 2&3)	PA-21-03									\$462,000		\$462,000
Playground Equipment (Timber Trails)	PA-21-04									\$115,000		\$115,000
Memorial Park Conversion	PA-22-10	F								\$230,000		\$230,000
Misc Energy Efficiency, Ergonomic Maint	BA-21-004										\$50,000	\$50,000
Innovation Center/Incubator	BA-20-005									\$16,950,000		\$16,950,000
PW Roof Replacement	BA-21-001									\$800,000		\$800,000
Misc Energy Efficiency, Ergonomic Maint	BA-21-004									\$50,000		\$50,000
PW Bay Lighting LED Conversion	BA-21-005									\$28,000		\$28,000
PW Shop Heat	BA-21-006									\$18,000		\$18,000
500 Gorman Bldg Water Softener	BA-21-007									\$18,000		\$18,000
Fire Station #1 Dry Sprinkler System Maintenance	BA-21-008									\$50,000		\$50,000
Fire Station #1 LED Lot Lighting	BA-21-009									\$25,000		\$25,000
Fire Station #2 Two-person Lift	BA-21-010									\$18,000		\$18,000
Library Parking Lot LED Lighting Upgrades	BA-21-011									\$25,000		\$25,000
Library Water Heater	BA-21-012									\$15,000		\$15,000
500 Gorman Bldg Rooftop Unit	BA-21-013									\$15,000		\$15,000
2021 Subtotal												
			\$13,152,000	\$5,009,000	\$250,000	\$110,000	\$2,596,000	\$3,740,200	\$6,318,950	\$1,006,000	\$18,062,000	\$50,244,150
NOTES: (A) Phase 2 of 12th Avenue (east of CSAH 83) - Canterbury TIF (\$2,100,000). City project. (B) Canterbury Areawide Wayfinding - Canterbury TIF (\$250,000). City project. (C) CSAH 83 Expansion - Canterbury TIF (\$1,567,000). City CIF funding (\$2,744,000). Federal funding (\$1,354,000). County project, only city funding included in CIP. (D) Ridge Creek - Grant (\$530,000). Tree Replacement fund and Cost sharing (\$50,000). (E) Includes \$100,000 in grants. (F) Includes possibly \$200,000 in grants.												



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2022												
Eagle Creek Blvd/Vierling Dr Roundabout (Canterbury)	CIF-20-014	G	\$1,400,000								\$1,400,000	
Canterbury Commons East Development Roadways	CIF-20-014	G	\$5,422,217								\$5,422,217	
2022 Full Depth Pavement Reconstruction	CIF-22-001		\$1,880,000	\$825,000		\$5,000	\$5,000	\$35,000			\$2,750,000	
Downtown ADA, Lighting & Tree Rehab	CIF-22-003	H	\$2,674,000	\$1,146,000							\$3,820,000	
CSAH 16 Trail Extension	CIF-22-006	I	\$210,000								\$210,000	
2022 Scott County ADA Pedestrian Curb Raps Imp.	CIF-22-007		\$35,000								\$35,000	
Annual Pavement Rehabilitation	CIF-22-011		\$145,000								\$145,000	
Annual Bituminous Mill and Overlay	CIF-22-012		\$1,620,000								\$1,620,000	
Annual Trail Rehabilitation (along roadways)	CIF-22-013		\$135,000								\$135,000	
Lift Station #16 Rehab	Sewer-19-001						\$180,000				\$180,000	
Cured In Place Sewer Pipe Lining	Sewer-22-001						\$170,000				\$170,000	
Southbridge Lift Station Rehab and SCADA	Sewer-22-002						\$135,000				\$135,000	
Trunk Sewer Extensions	Sewer-22-005						\$148,000				\$148,000	
Sewer Jetter	Sewer-22-711						\$275,000				\$275,000	
West End (Low Bluff) Lift Station & Forcemain	Sewer-24-001						\$1,756,000				\$1,756,000	
Annual Erosion/Pond Cleaning/Outlet Imp	Storm-21-001							\$150,000			\$150,000	
NW Shakopee Storm Water BMP Retrofit	Storm-22-001							\$1,560,000			\$1,560,000	
Valley View Drainage	Storm-22-002							\$83,000			\$83,000	
West End Regional park & Trunk Oversizing	Storm-22-003	J						\$750,000			\$750,000	
Public Works Surface Water: Skidsteer Loader	Storm-22-731							\$6,500			\$6,500	
Public Works Surface Water: Tractor	Storm-22-732							\$161,750			\$161,750	
Public Works Surface Water: Sweeper	Storm-22-736							\$300,000			\$300,000	
Windemere Bluff Community Park	PR-21-005							\$200,000			\$200,000	
Quarry Lake Park Improvements	PR-21-006							\$650,000			\$650,000	
Killamey Hills Park Imp	PR-22-005							\$450,000			\$450,000	
Scenic Heights Master Plan	PR-21-009							\$200,000			\$200,000	
Riverfront Marina	PR-19-002							\$600,000			\$600,000	
Vierling Greenway Trail (UVD)	PR-20-004	K						\$200,000			\$200,000	
Lions Park Renovation	PR-21-004							\$330,000	\$195,000		\$525,000	
T.H. 169 Pedestrian Bridge	PR-22-004	R	\$2,000,000					\$2,993,000			\$4,993,000	
Trail Reconstruction	PA-22-01								\$80,000		\$80,000	
Fence Replacement	PA-22-02								\$30,000		\$30,000	
Skate Park Equipment	PA-22-03								\$99,000		\$99,000	
Playground Equipment (Prairie Bend)	PA-22-06								\$110,000		\$110,000	
Memorial Park Conversion	PA-22-10								\$550,000		\$550,000	
											\$0	
Misc Energy Efficiency, Ergonomic Maint	BA-21-004									\$50,000	\$50,000	
Fire Station #1 Bay Roof	BA-22-001									\$250,000	\$250,000	
Community Center Boiler	BA-22-004									\$200,000	\$200,000	
PD Meeting Room LED Lighting	BA-22-005									\$20,000	\$20,000	
Fire Station #1 Water Softener	BA-22-006									\$18,000	\$18,000	
Fire Station #2 Overhead Door Operators	BA-22-007									\$30,000	\$30,000	
Library Interior LED Lighting Upgrade	BA-22-008									\$90,000	\$90,000	
											\$0	
											\$0	
2022 Subtotal			\$15,521,217	\$1,971,000	\$0	\$5,000	\$2,669,000	\$3,026,250	\$5,623,000	\$1,064,000	\$658,000	\$30,537,467
NOTES: (G) Canterbury Commons TIF funding (100%), City Project. (H) Includes \$100,000 from Tree Replacement Fund. (I) Includes \$105,000 cost share with Scott County. (J) Includes \$375,000 in possible Grants. (K) Includes \$50,000 from Tree Replacement Fund. (R) Includes \$2,000,000 in State Bonding (grant).												



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15-yr
CIP

2023

Project	Project Number	NOTES	(CIF) Capital Improvement Fund	Special Assessments	MSA Fund	SPUC (Watermain)	Sanitary Sewer Fund	Storm Drainage Fund	Park Development	Park Asset Fund	Building Internal Service Fund	Total Project Cost
2023												
												\$0
2023 Full Depth Pavement Reconstruction	CIF-23-001		\$1,925,000	\$410,000		\$5,000	\$5,000	\$5,000				\$2,350,000
Whispering Oaks Trail & Sidewalk Connections	CIF-23-003	L	\$82,500									\$82,500
Marystown Rd/TH 169 Interchange & Trail Imp	CIF-23-004	M	\$7,380,000									\$7,380,000
Annual Pavement Rehabilitation	CIF-23-011		\$150,000									\$150,000
Annual Bituminous Mill and Overlay	CIF-23-012		\$2,800,000									\$2,800,000
Annual Trail Rehabilitation (along roadways)	CIF-23-013		\$135,000									\$135,000
												\$0
Trunk Sewer Extensions	Sewer-23-005						\$172,000					\$172,000
												\$0
Annual Erosion/Pond Cleaning/Outlet Imp	Storm-23-001							\$150,000				\$150,000
Public Works Surface Water: Skidsteer Loader	Storm-23-731							\$6,700				\$6,700
												\$0
Lions Park Renovation	PR-21-004								\$100,000			\$100,000
Quarry Lake Park Improvements	PR-21-008	N							\$250,000			\$250,000
Huber Park Riverbank & Park Integration	PR-23-002	O					\$950,000	\$300,000	\$10,965,000	\$250,000		\$12,465,000
												\$0
Skate Park Equipment	PA-22-03									\$176,000		\$176,000
Trail Reconstruction	PA-23-01									\$80,000		\$80,000
Fence Replacement	PA-23-02									\$15,000		\$15,000
Playground Equipment (Meadows)	PA-22-05									\$250,000		\$250,000
Tahpah Bathrooms	PA-23-03									\$115,400		\$115,400
												\$0
PW Rooftop Units	BA-21-002										\$450,000	\$450,000
Library Boilers	BA-21-003										\$130,000	\$130,000
Misc Energy Efficiency, Ergonomic Maint	BA-21-004										\$50,000	\$50,000
PD Boilers	BA-23-002										\$90,000	\$90,000
Community Center Fitness Area Improvements	BA-23-003										\$100,000	\$100,000
SandVenture Pool Subsurface Maintenance	BA-23-004										\$200,000	\$200,000
SandVenture Diving Board and Lifeguard Stands	BA-23-005										\$40,000	\$40,000
Fire Sation #1 Boilers	BA-23-006										\$120,000	\$120,000
Fire Stations #1 and #2 LED Bay Lighting	BA-23-007										\$80,000	\$80,000
Fire Sation #2 Water Heaters	BA-23-008										\$20,000	\$20,000
												\$0
												\$0
2023 Subtotal			\$12,452,500	\$410,000	\$0	\$5,000	\$1,127,000	\$461,700	\$11,315,000	\$886,400	\$1,280,000	\$27,937,600
NOTES: (L) Scott County cost share \$25,000. (M) Potential grant (state/federal) \$4,918,000. (N) \$100,000 in possible grants. (O) \$1,250,000 in possible grants.												

