

Pavement Management Report

City Council Meeting of May 21, 2013

Previous Meetings Summary

- In February, we presented the 2012 pavement survey and our consultant presented general pavement management strategies
- In April, we reviewed existing maintenance funding sources and explored alternative local funding possibilities.
- Also in April, City Council adopted “Guiding Principles” for Pavement Maintenance – Council requested additional details

Pavement Condition Index (PCI)

- Method of quantifying pavement condition
- Score from 0 to 100
 - Score of 100 given to a newly paved street or path
 - Average PCI of Davis streets = 62
 - Average PCI of bike paths = 59

Condition Category	Pavement Condition	PCI Category
I	Very Good	100
II/III	Good	70
IV	Poor	50
V	Failed	25
		0

Guiding Principles

- **Prioritize key streets of community value at a higher level than local streets. (Streets serving key areas, containing bus routes or having bike lanes.)**
 - Staff selected local streets to be treated similar to the way collectors are treated for maintenance purposes. These streets will be referred to as “Priority Local Streets.”
- **Set average PCI goal for pavement from 70 to the low 60’s.**
 - Staff recommends setting separate average PCI goals for street classifications as follows:
 - » Arterials: 68
 - » Collectors: 65
 - » Priority Local Streets (see above): tied to Collectors
 - » Remainder of Local Streets: 60

Guiding Principles Cont'd

- **Keep streets in good condition from deteriorating to a poor condition**
 - The Decision Tree and the Streetsaver program use this principle in defining street projects. Street projects defined by the Streetsaver program will be further refined by staff.
- **New roads and enhanced corridors shall not create future higher pavement costs for the City unless specific funds are identified for this purpose.**
 - New streets are required to be built to a higher traffic index than they had in the past. Bike paths are now required to be constructed of concrete (versus asphalt) and placement and species of trees placed adjacent to new paths are taken into greater consideration.

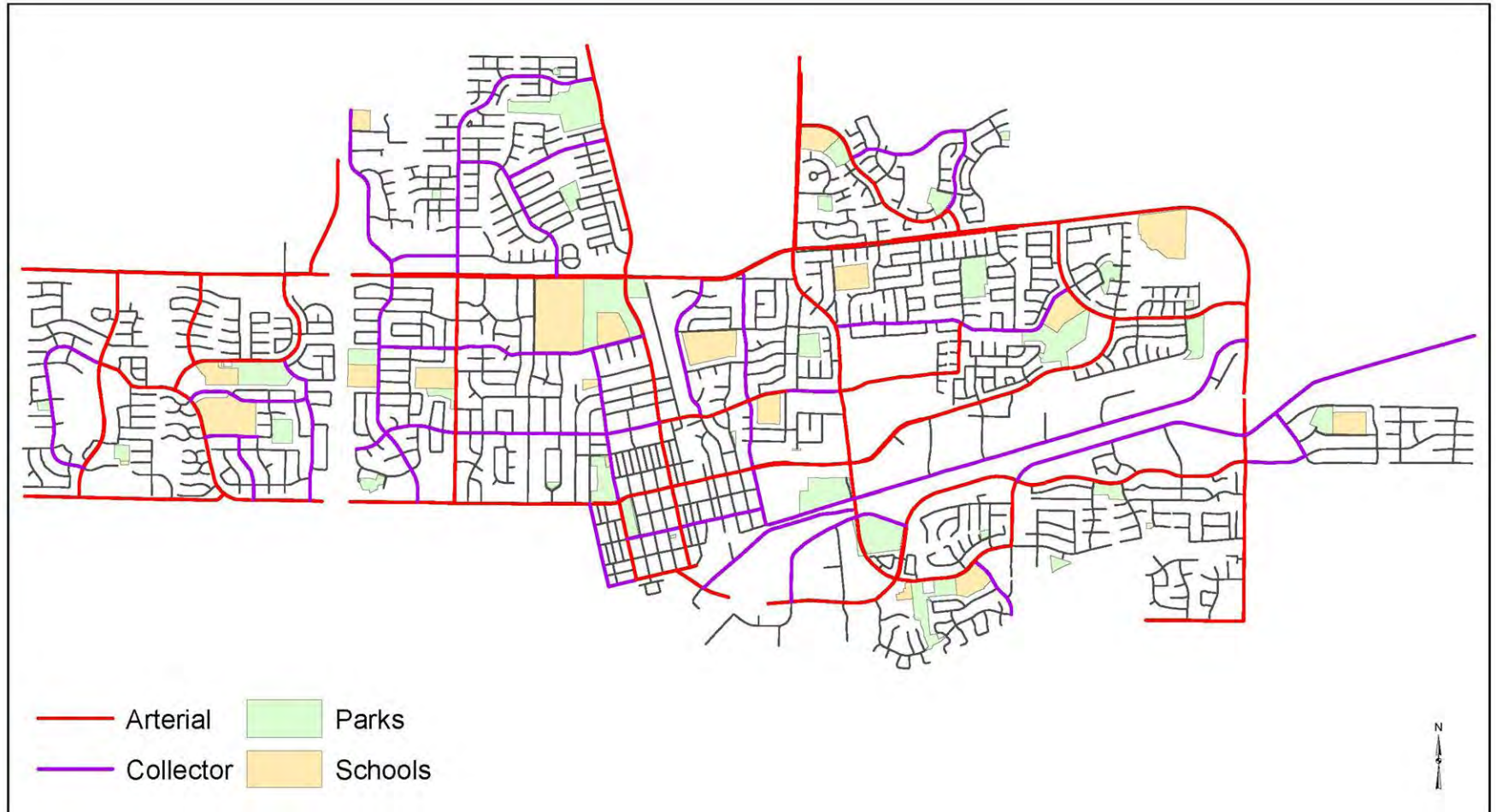
Guiding Principles Cont'd

- **Maintain the condition of bike paths to a comparable, or higher, standard than that of streets. Maintain higher use/value bike path segments to a higher level than lesser used segments.**
 - The BAC will be consulted for a list of priority bike paths which will be prioritized for maintenance
- **Defer major investments in the maintenance of bike paths impacted by trees until long-term decisions are made about the trees**
 - Each bike path segment will be evaluated for its proximity to damaging tree roots prior to inclusion on a maintenance project. The level of maintenance will depend on the severity of a tree root issue (i.e. existing path with severe tree root damage may only be patched until a solution for dealing with the tree roots can be agreed upon.)

Davis Street and Bike Path System

- 163 centerline miles of streets (33 million square feet)
 - 34.6 miles of arterials 21%
 - 22.8 miles of collectors 14%
 - 103.9 miles of local streets 64%
- 52 miles of bike paths (3 million square feet)

Davis Arterials and Collectors



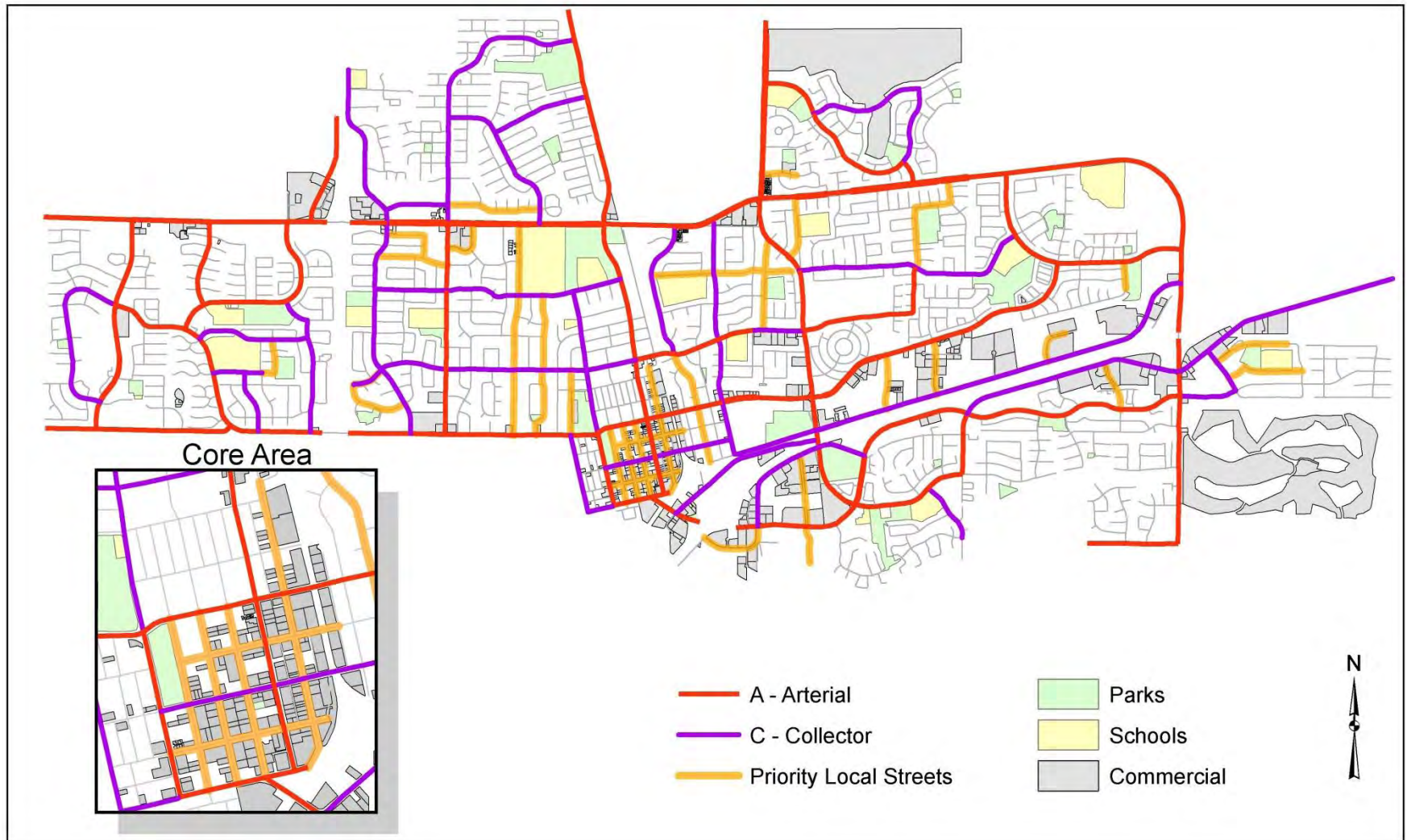
Priority Local Streets

- Local streets maintained at a higher level than most
- Local streets that
 - Provide access to schools, parks, or commercial areas
 - Contain striped bike lanes
 - Contain bus routes
- Treated like collectors

Priority Local Streets



Arterials, Collectors, and Priority Locals



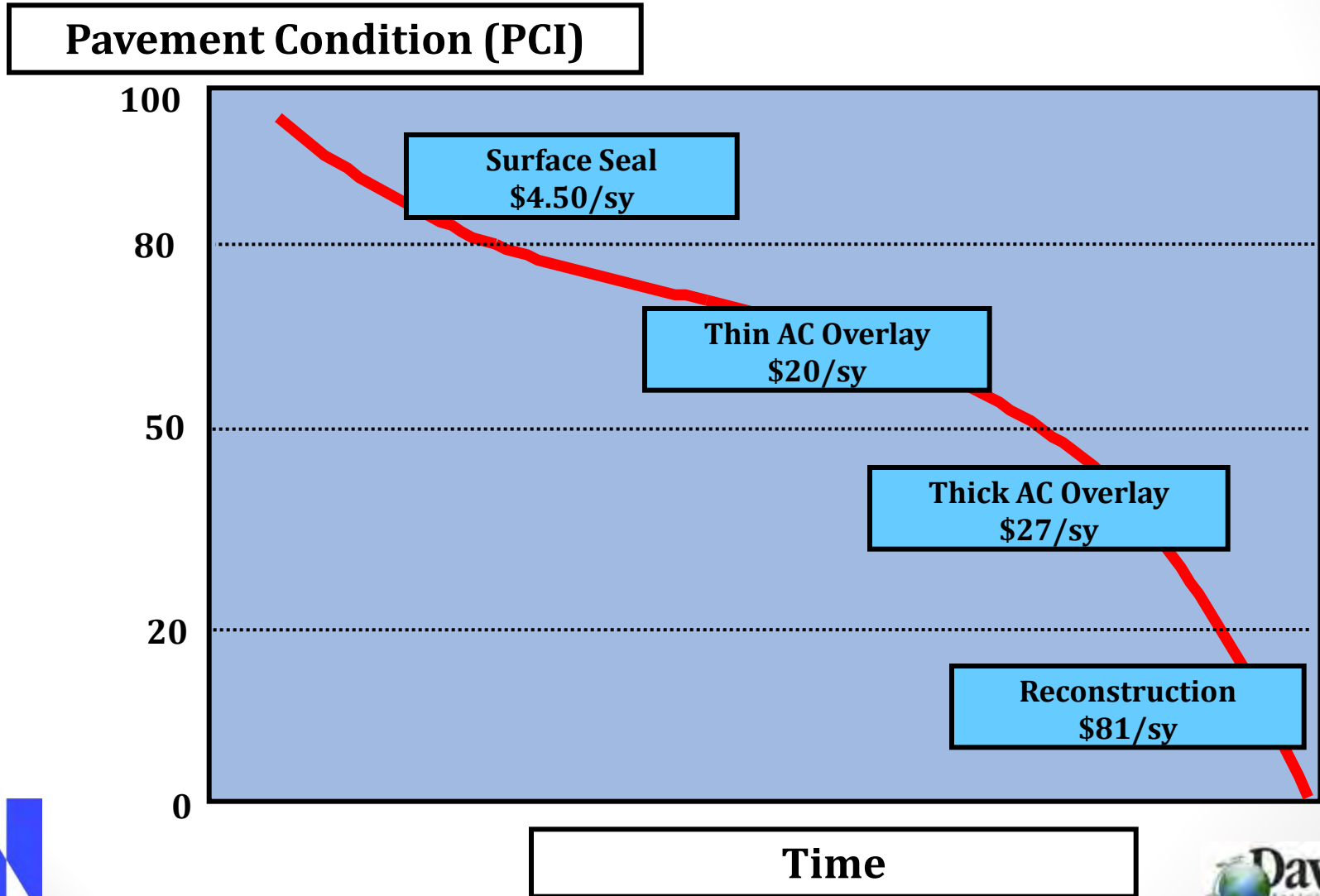
Funding Breakdown

Only a portion of the annual funding goes to street paving. The following illustrates estimate breakdowns:¹

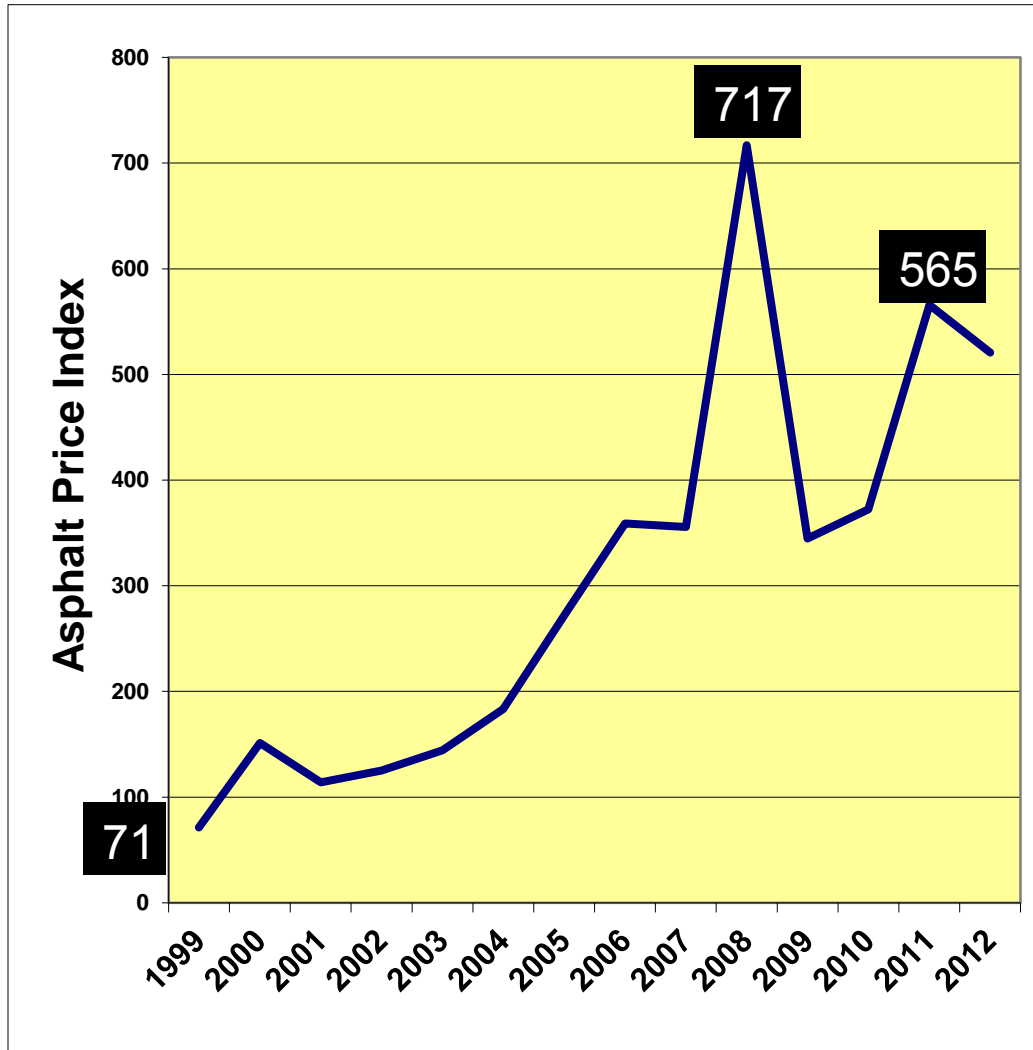
FUNDING	\$15,000,000	\$10,000,000	\$3,000,000	\$2,000,000	\$1,000,000
Concrete ² (5% of street paving)	\$487,000	\$330,000	\$106,000	\$70,000	\$36,000
Corner Ramps (10% of street paving)	\$975,000	\$655,000	\$211,000	\$145,000	\$72,000
Other Funding	-\$250,000	-\$250,000	-\$250,000	-\$215,000	-\$108,000
Contingency (10% of construction cost)	\$1,250,000	\$830,000	\$250,000	\$165,000	\$82,400
Planning/Study	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Engineering ³ (5% of construction cost)	\$625,000	\$414,000	\$125,000	\$83,250	\$41,200
Municipal Arts ⁴	\$8,000	\$7,000	\$2,000	\$1,500	\$700
Construction Admin (5% of construction cost)	\$625,000	\$414,000	\$125,000	\$83,250	\$41,200
Bike Paths	\$1,470,000	\$990,000	\$316,000	\$216,000	\$107,500
Street Paving	\$9,800,000	\$6,600,000	\$2,105,000	\$1,441,000	\$717,000

1. Numbers are estimates only and have been rounded for example purposes
2. Curb, gutter, sidewalk
3. Assumes City would require outside consultant to perform
4. Municipal Arts component not required for maintenance portion of projects

“Pay Now or Pay More Later”



Why are costs so high?



Pavements are deteriorating rapidly

Asphalt prices increased eight-fold since 1999

Streets Scenarios

Scenario A – Maintain Current Backlog and treat Priority Local Streets as Collectors

- Heavily front-load paving costs with \$55M in pavement funding (\$83M in gross funding) over first 6 years
- \$22M streets backlog in 2032
- Average PCI of 59 in 2032

Streets Scenarios Cont'd

Scenario B - PCI goals based on street classification

- Arterials: 68
- Collectors (including priority locals): 65
- Locals: 60
- No front-load of paving costs. \$3.4M to \$6.2M in paving costs (\$4.6M to \$8.5M gross funding) in years 1-4 growing to \$13.6M paving cost (\$18.7M gross funding) in year 20
- \$120M streets backlog in 2032
- Average PCI of 63 in 2032

Streets Scenarios Cont'd

Scenario B-Mod - PCI goals based on street classification with front-loaded pavement funding

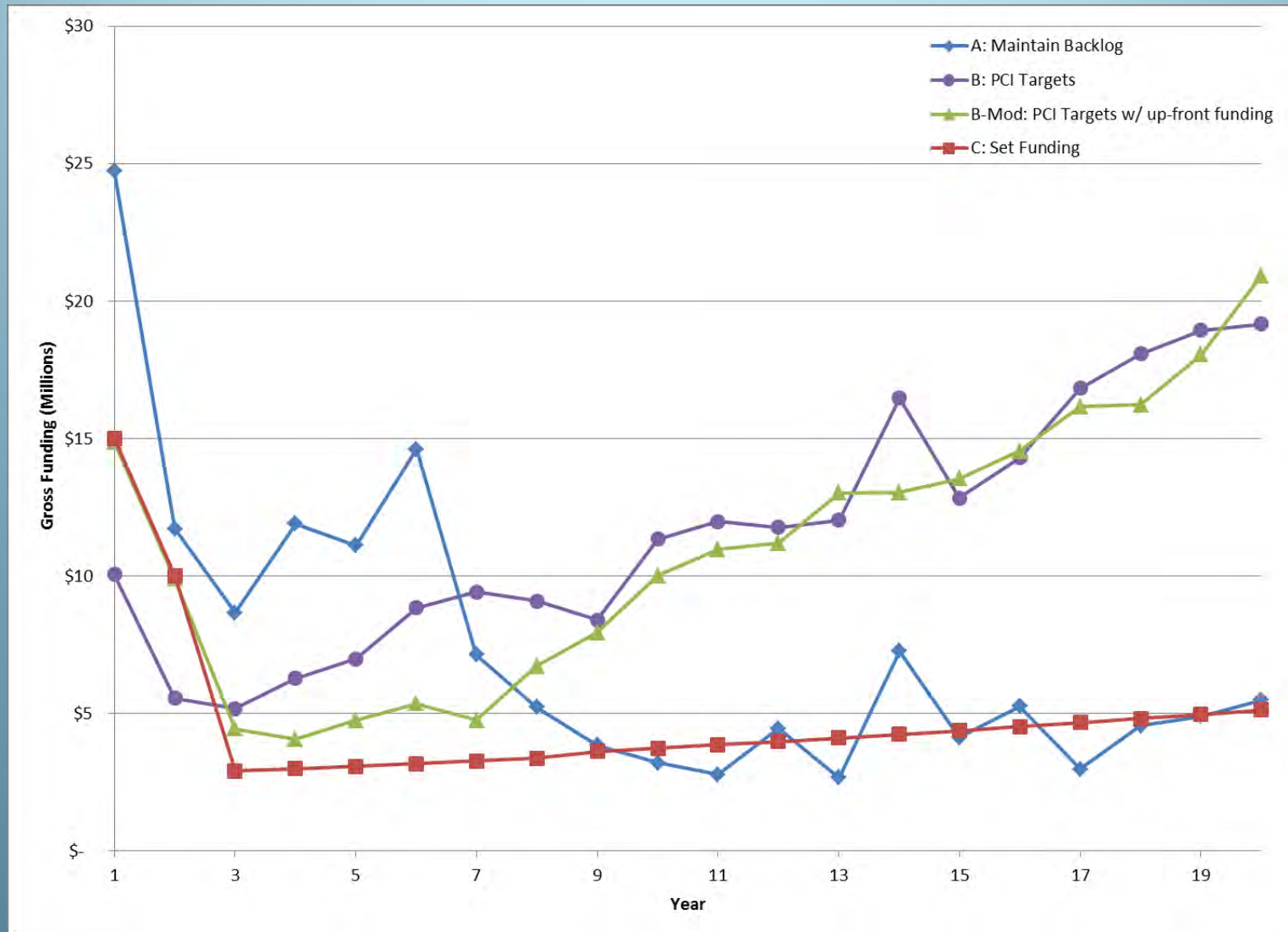
- Arterials: 68
- Collectors (including priority locals): 65
- Locals: 60
- \$9.8M / \$6.6M in paving costs first 2 years (\$25M gross funds)
- \$110M streets backlog in 2032
- Average PCI of 63 in 2032

Streets Scenarios Cont'd

Scenario C - \$25M in years 1 and 2 with \$3M funding in outlying years escalated at 3%

- \$9.8M / \$6.6M in paving costs first 2 years (\$25M gross funds)
- \$2.1M in paving cost (\$3M gross) escalated in years 3-20
- \$172M streets backlog in 2032
- Average PCI of 45 in 2032

Gross Funding (Scenarios A – C)



Streets Scenarios Cont'd

Scenario D - \$2M gross funding escalated at 3%

- \$1.4M in paving cost (\$2M gross) escalated at 3% over all 20 years
- \$370M streets backlog in 2032
- Average PCI of 33 in 2032

Streets Scenarios Cont'd

Scenario E - \$1M gross funding escalated at 3%

- \$0.7M in paving cost (\$1M gross) escalated at 3% over all 20 years
- \$464M streets backlog in 2032
- Average PCI of 26 in 2032

Streets Scenarios Cont'd

Scenario F - \$25M gross in years 1 and 2 with no other funding

- \$16.4M in paving cost (\$25M gross) in first 2 years
- \$0 for years 3 - 20
- \$325M streets backlog in 2032 (reduction of \$45M in backlog from Scenario D)
- Average PCI of 29 in 2032

Streets

(numbers are for street maintenance ONLY)^

	A (Maintain Backlog)	B (PCI Goals)	B-Mod (PCI Goals + up-front funding)	C (\$3M funding escalated)	D (\$2M Funding)	E (\$1M Funding)	F (\$25M up front)
PCI in 2032	59	63	63	45	33	26	29
2014	\$18M	\$6.2M	\$9.7	\$9.8M	\$1.4M	\$0.72M	\$9.8M
2015	\$8.5M	\$3.4M	\$6.5	\$6.6M	\$1.5M	\$0.74M	\$6.6M
Avg (Yr 3-20)	\$4M	\$8.5M	\$7.6M	\$2.7M	\$2M	\$0.99M	\$0
Total	\$99M	\$162M	\$153M	\$62M	\$39M	\$19M	\$16.4M
Backlog in 2032	\$21M	\$120M	\$110M	\$172M	\$370M	\$464M	\$325M

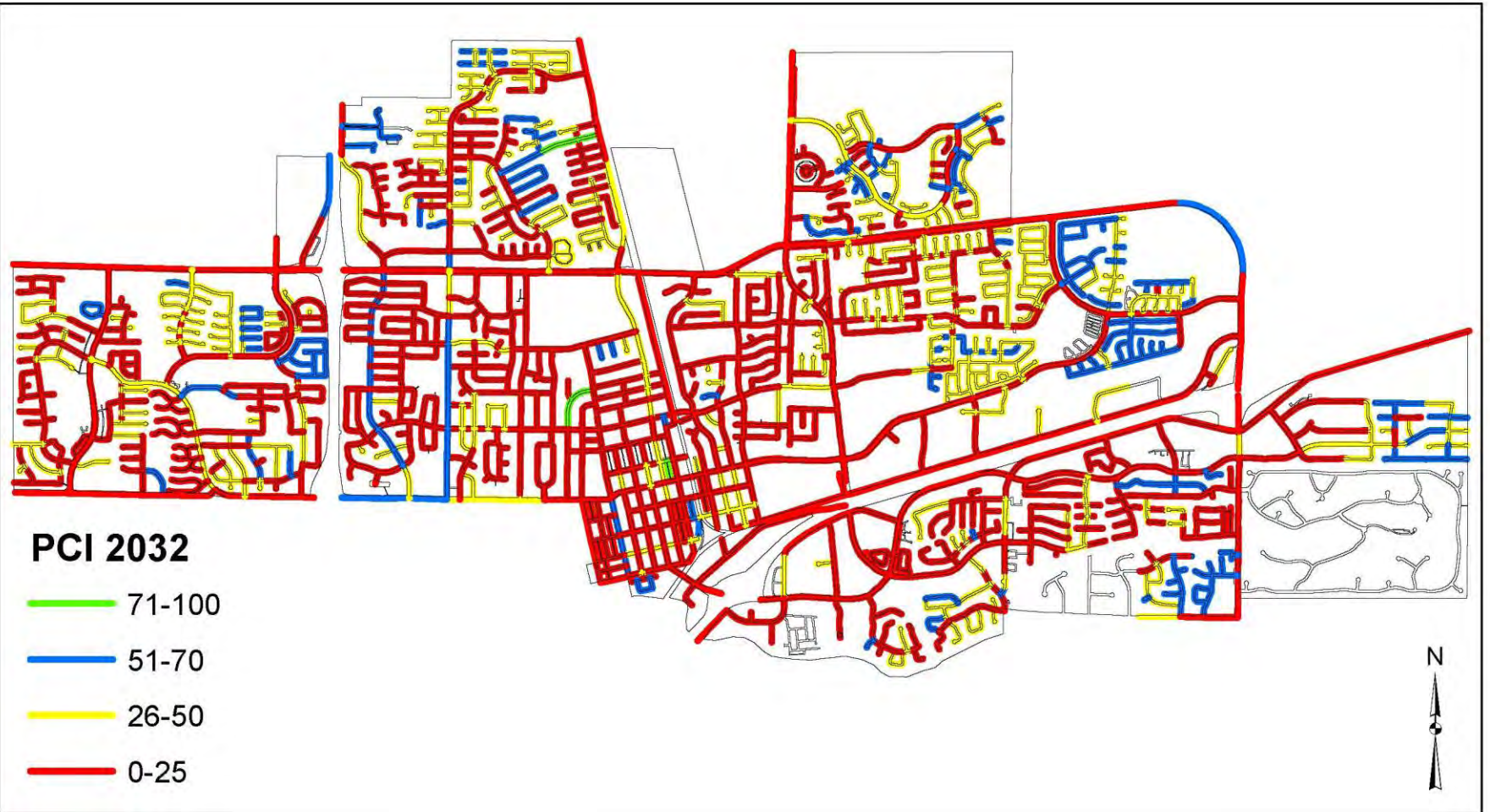
^ Numbers do not include additional hard and soft costs and do not include bike path maintenance costs

Current Street PCIs (2013)



2013 PCI

Street PCIs in 2032 – No Maintenance



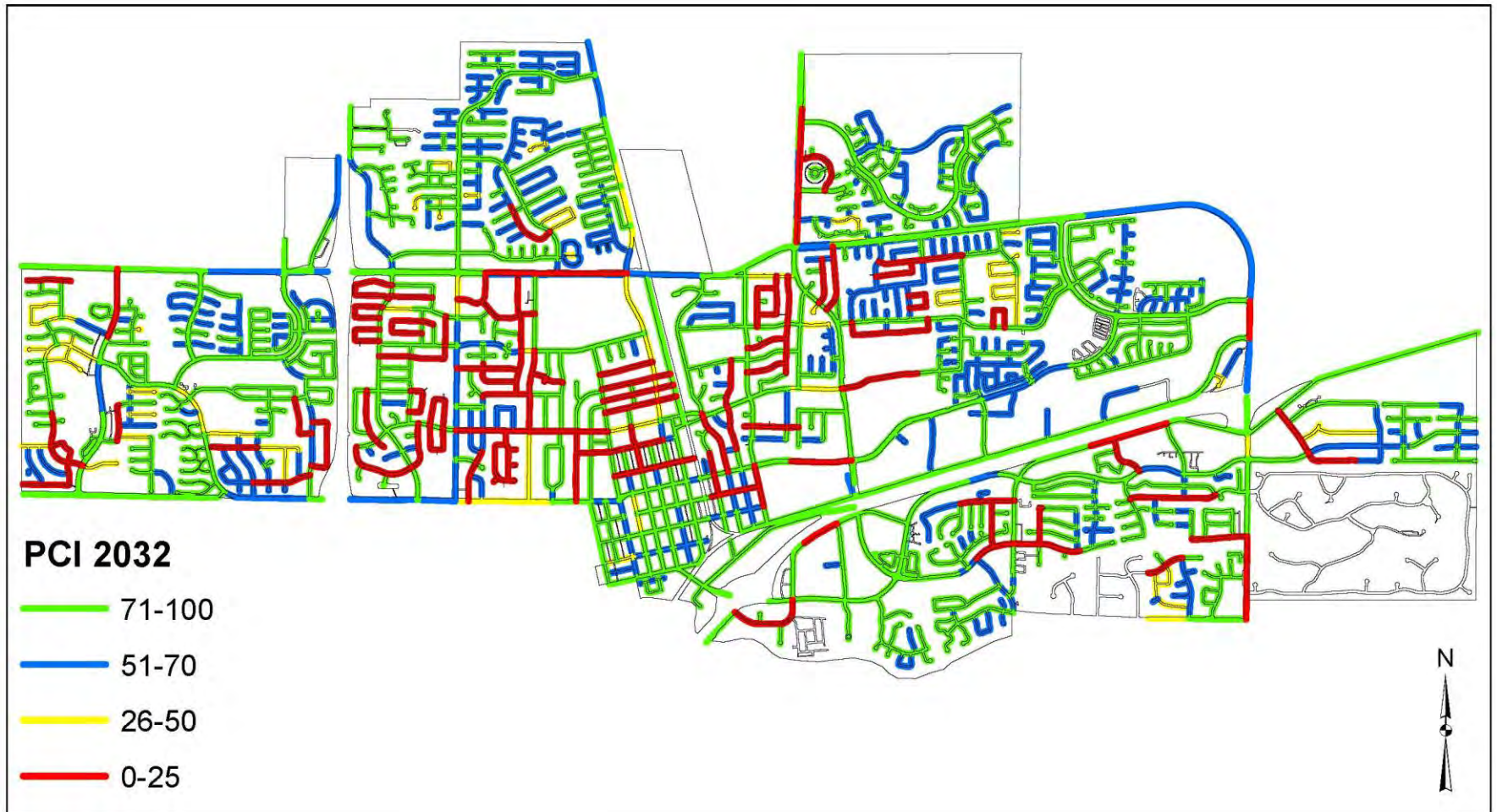
\$0 Budget

Street PCI in 2032 – Scenario A (Maintain Backlog)



Scenario 'A': Maintain Backlog

Street PCIs in 2032 – Scenario B (PCI Goals)



Scenario 'B': PCI Goals

Street PCIs in 2032 – Scenario B (PCI Goals with up-front funding)



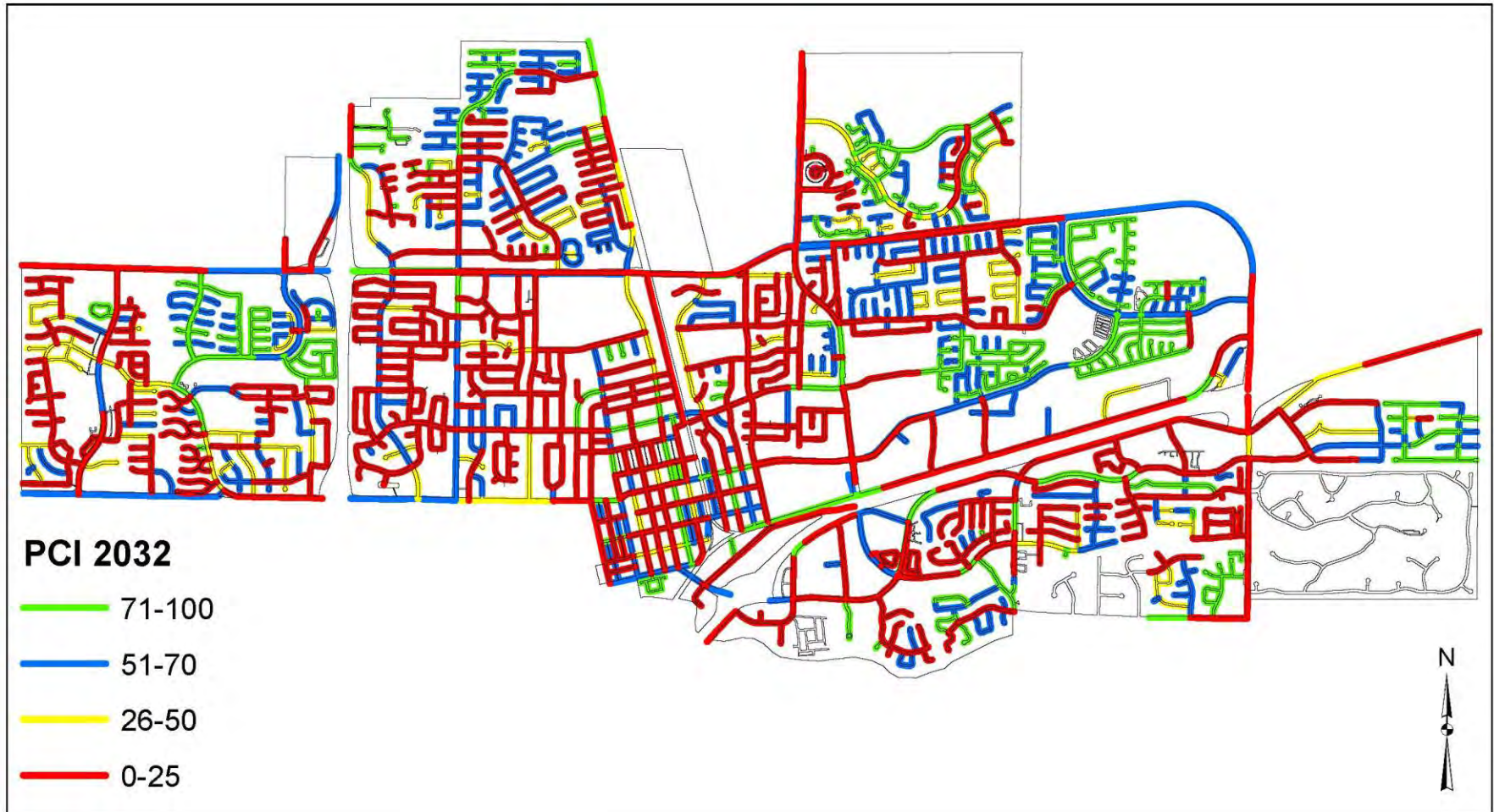
Scenario 'B-Mod': PCI Goals with up-front funding

Street PCIs in 2032 – Scenario C (\$25M up front, \$3M escalated)



Scenario 'C': \$3M Funding Escalated

Street PCIs in 2032 – Scenario D (\$2M funding escalated)



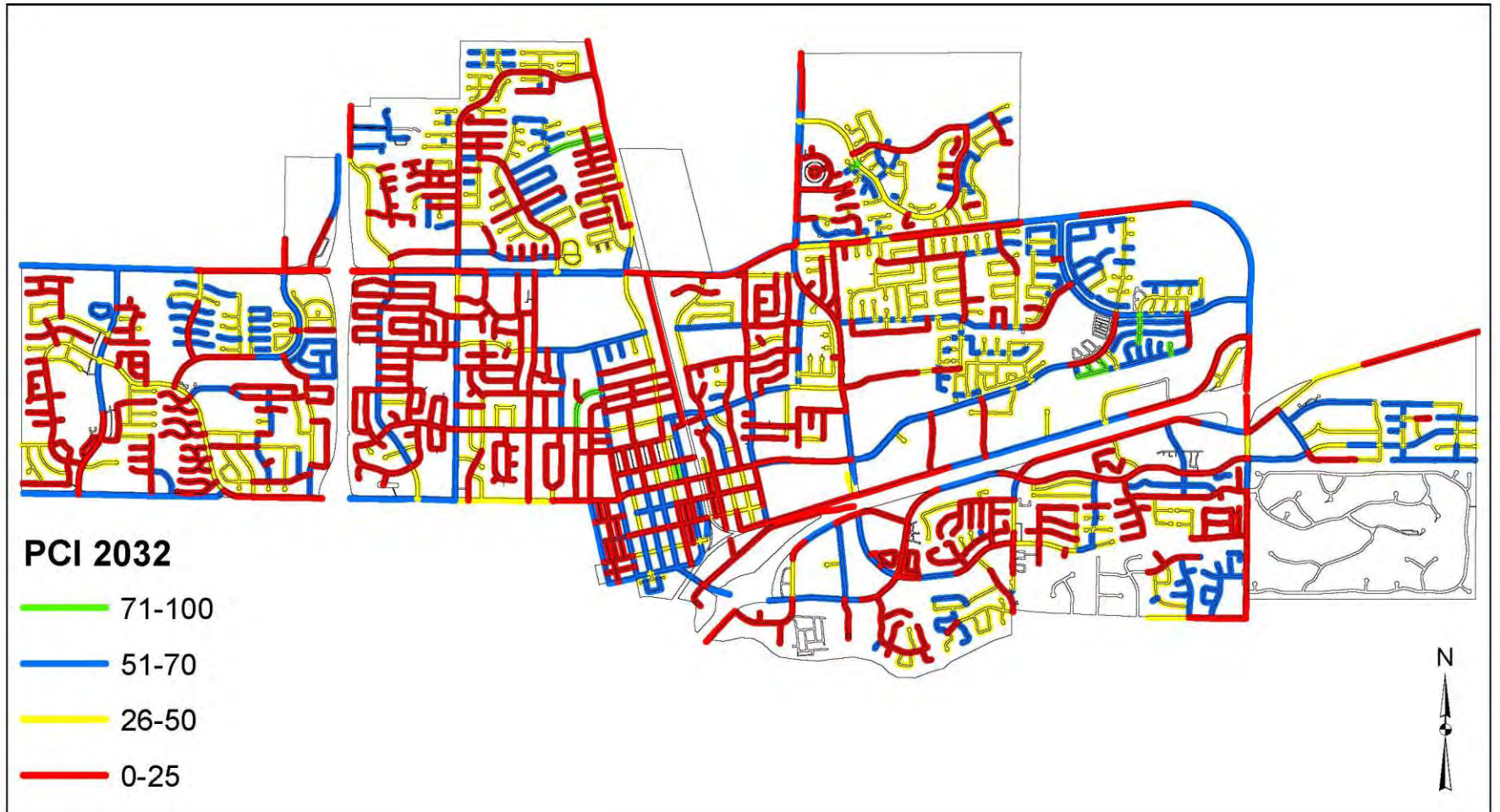
Scenario 'D': \$2M Funding

Street PCIs in 2032 – Scenario E (\$1M funding escalated)



Scenario 'E': \$1M Funding

Street PCIs in 2032 – Scenario F (\$25M up front with no other funding)



Scenario 'F': \$25M up front

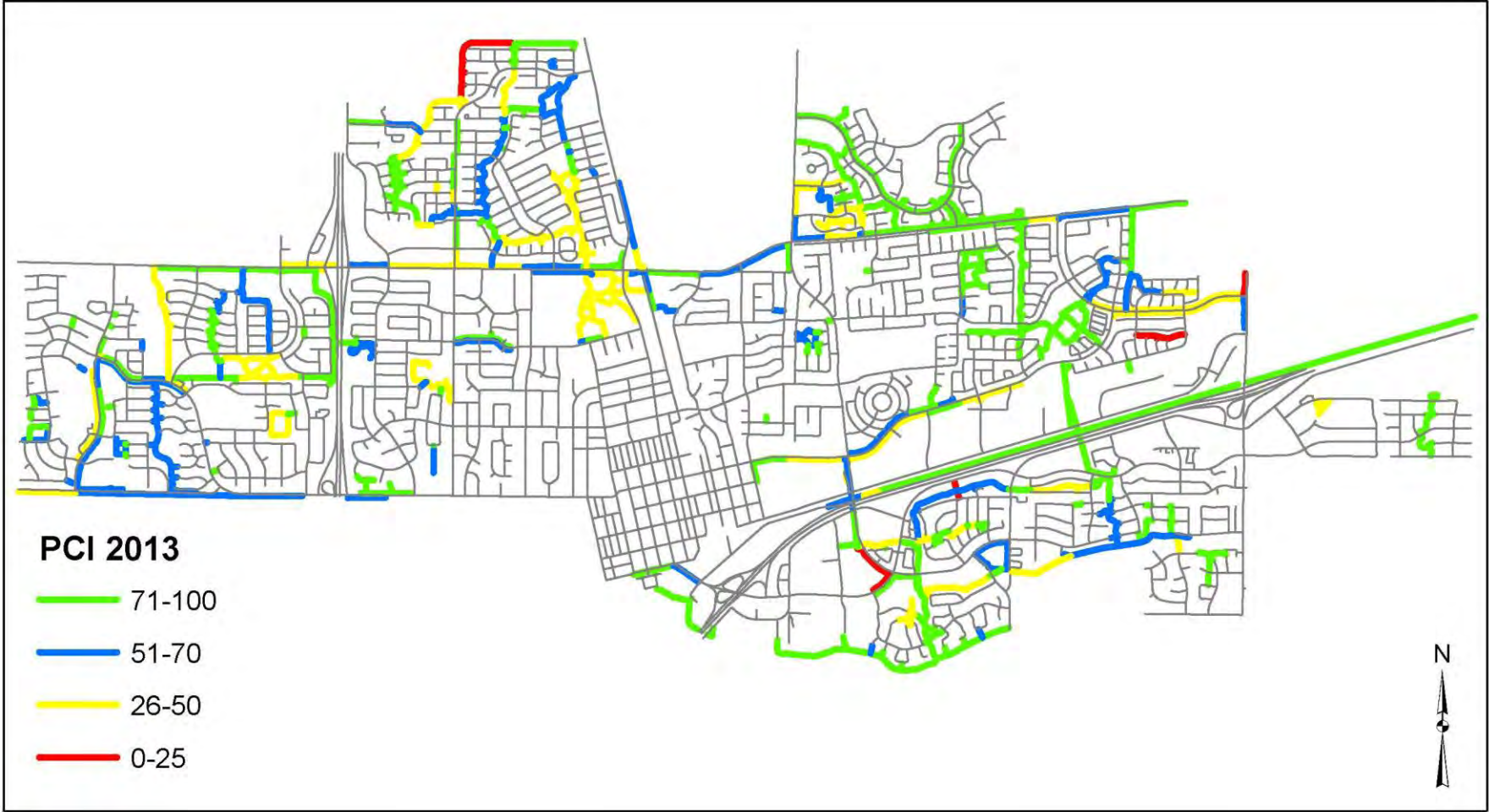
Bike Paths

(numbers are for bike path maintenance ONLY)^

	A (Maintain Backlog)	B (Set Funding)	D (\$2M Escalated)	E (\$1M Escalated)	F (\$25M only)
PCI in 2032	69	55	44	37	31
2014	\$140,000	\$1,470,000	\$216,000	\$108,000	\$1,470,000
2015	\$230,000	\$990,000	\$223,000	\$111,000	\$990,000
Average (Years 3-20)	\$708,000	\$410,000	\$298,000	\$148,000	\$0
Total	\$13M	\$9.8M	\$5.8M	\$2.9M	\$2.46M
Backlog in 2032	\$1.6M	\$21.4M	\$33M	\$44.4M	\$57M

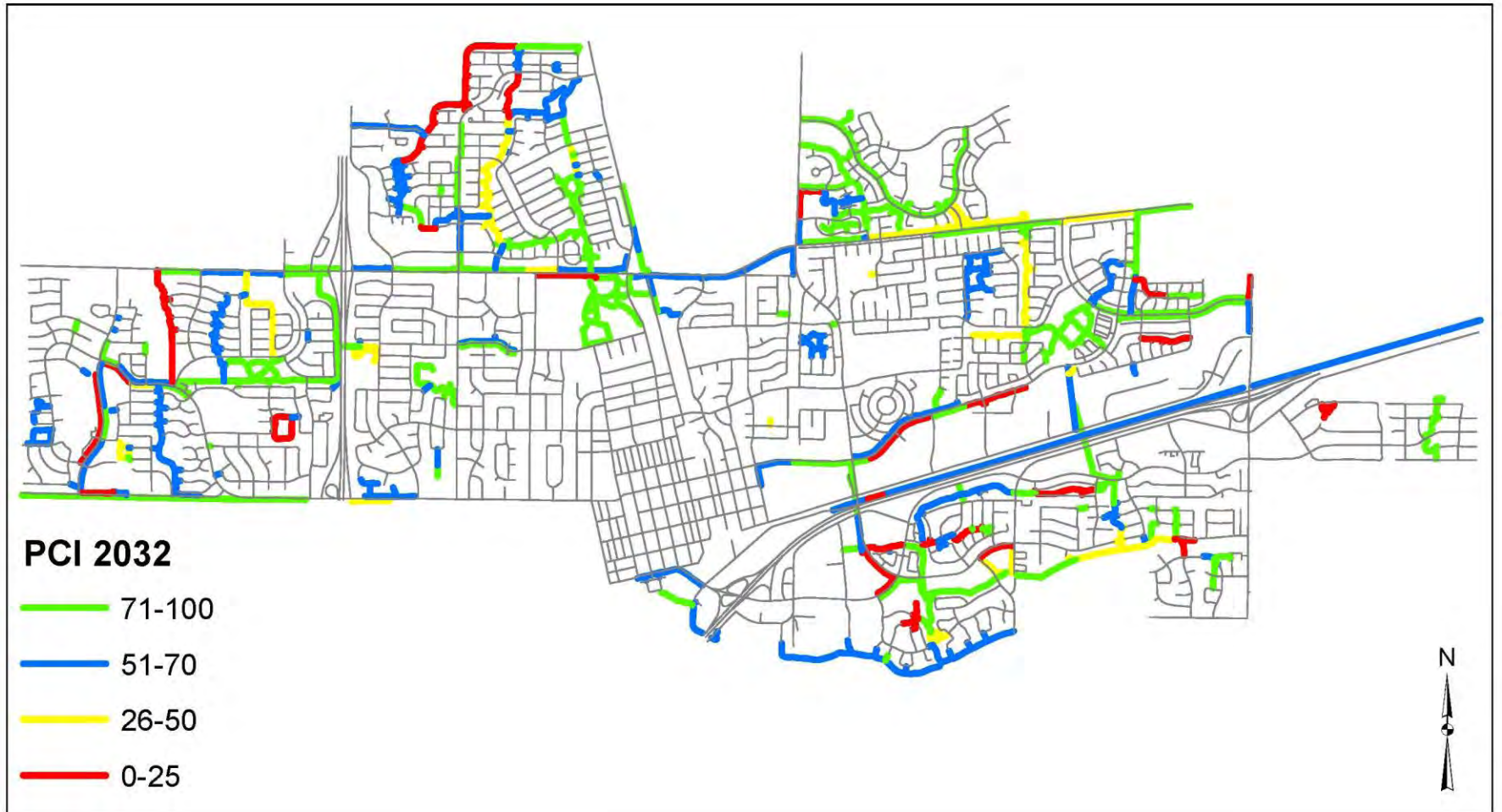
^ Numbers do not include additional hard and soft costs and do not include street maintenance costs

Bike Path – Current PCIs



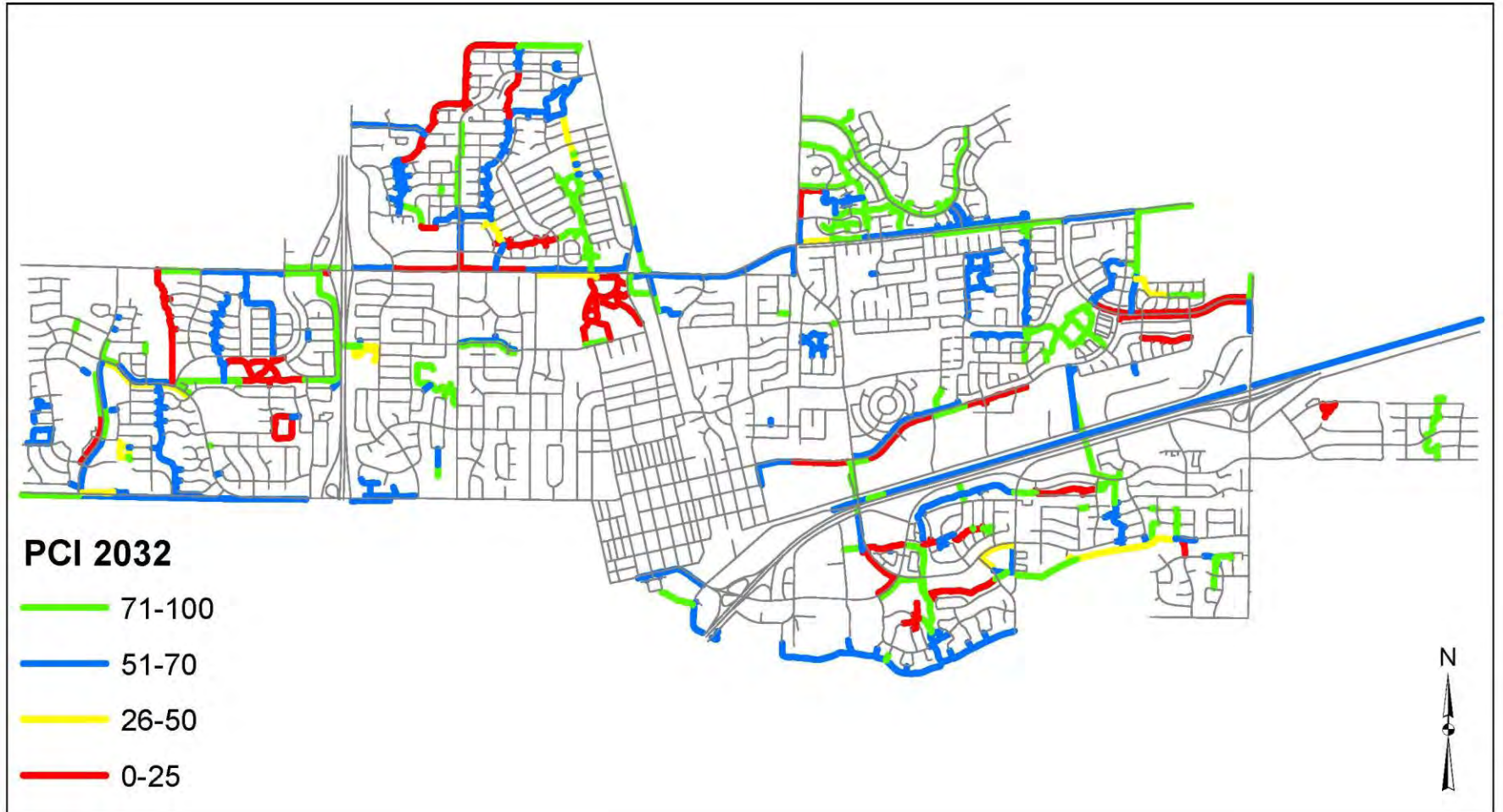
Current PCIs

Bike Path PCI in 2032 – Scenario A (Maintain Backlog)



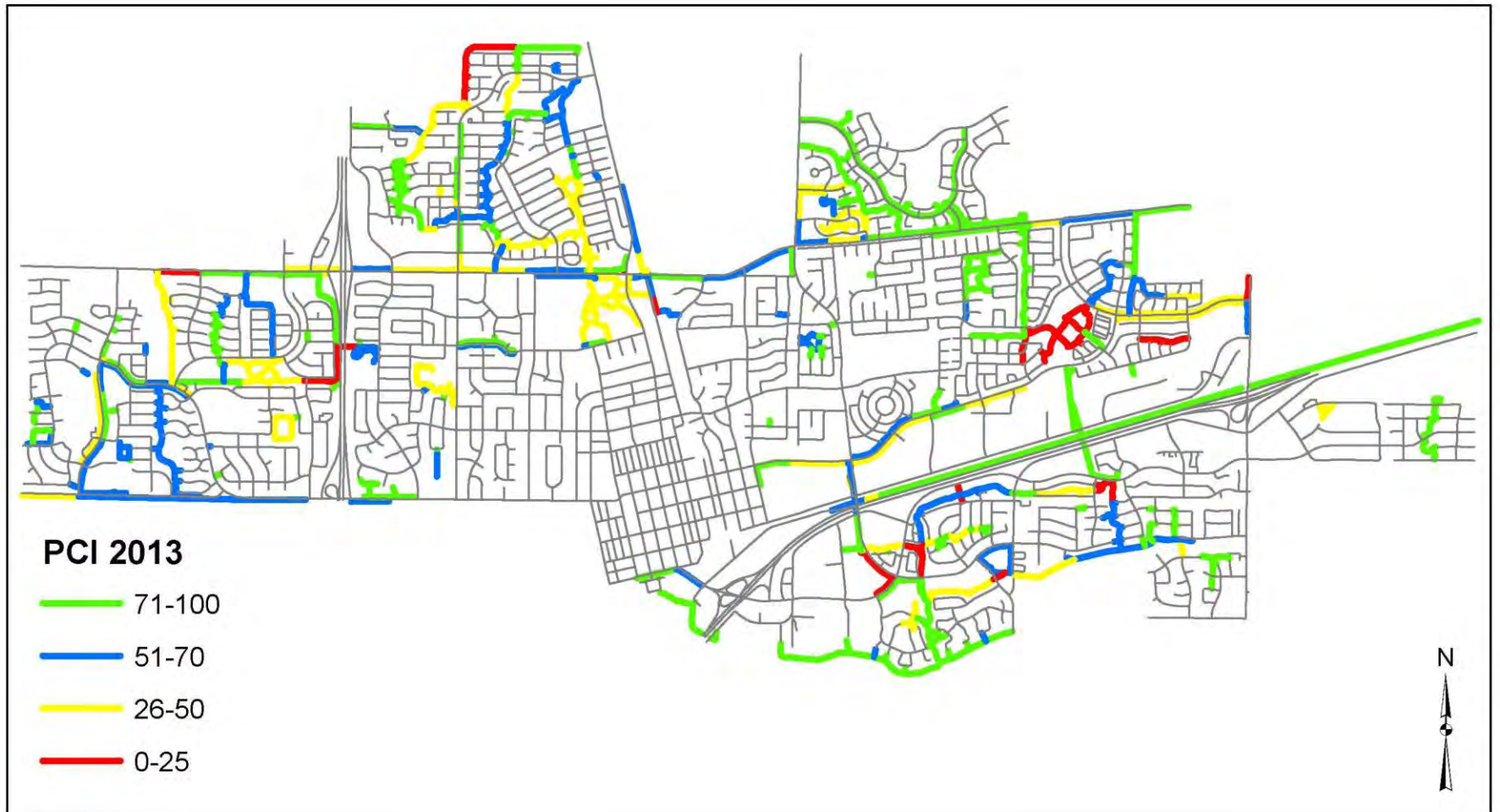
Scenario 'A': Maintain Backlog

Bike Path PCIs in 2032 – Scenario B (Set Funding)



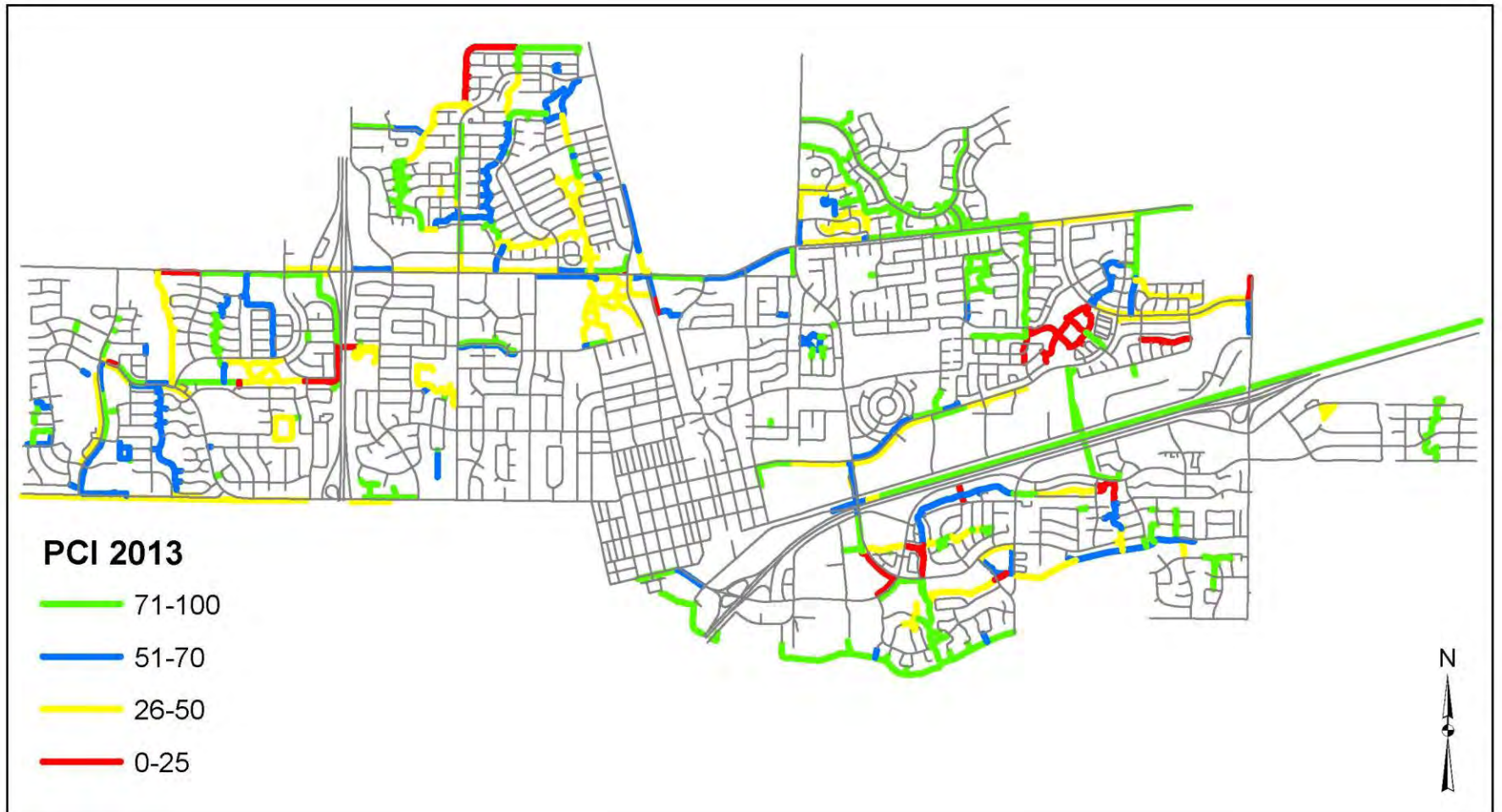
Scenario 'B': Set Funding

Bike Path PCIs in 2032 – Scenario D (\$2M funding escalated)



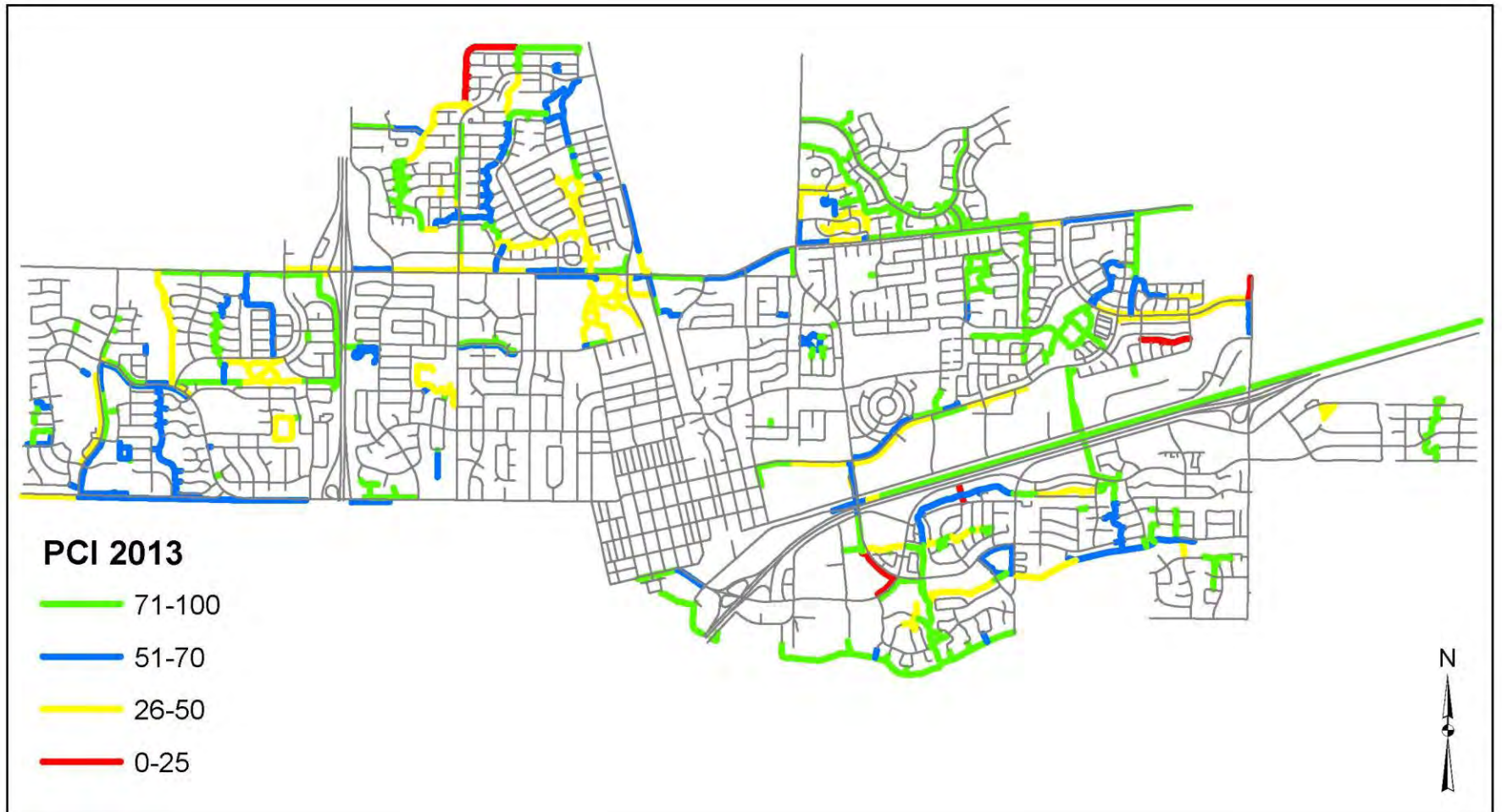
Scenario 'D': \$2M Funding

Bike Path PCIs in 2032 – Scenario E (\$1M funding escalated)



Scenario 'E': \$1M Funding

Bike Path PCIs in 2032 – Scenario F (\$25M up front with no other funding)



Scenario 'F': \$25M up front

Budget Impacts

- Regardless of the 20-year maintenance scenario chosen, funding paving up-front will reduce the City's backlog and future expenses.
- Budget projections have assumed future costs of \$2 million to \$4 million annually for infrastructure.
- Incurring \$25 million in capital costs over the next two years would translate into \$2 million annually in debt payments.
- Additional annual funds dedicated towards pavement would need to come from growth in existing revenue, new revenue or cutting of other programs.

Recommendations

- Approve the funding and budgeting strategy for pavement maintenance, in concept, for the multi-year effort, as outlined in this staff report.
- Direct staff to proceed on the first year of the multi-year effort, planning the project, obtaining a design consultant and a public outreach consultant.
- Direct staff to return in the fall of 2013 with an update on the long-term pavement maintenance budgeting plan with contracts for Design and Public Outreach Consultants for next fiscal year's Pavement Maintenance project.
- Approve the pavement management scenario B-Mod, PCI Goals with Front End Loading (\$15 million in year 1 and \$10 million in year 2).

Questions?