

# CAPITAL IMPROVEMENT PLAN UPDATE

(Part 2)

2023 Pavement Plan

07.13.23

# CIP PAVING OVERVIEW

## Lake Forest Park's Pavement Statistics:

55 – Number of miles of City pavement

20 years – Expected time between resurfacing cycles

\$1M - Actual (2023) cost to **resurface** 1 mile of pavement

\$5M to \$7M – Estimated cost to **reconstruct** 1 mile of roadway

+/- \$500,000 – Current annual budget for pavement resurfacing



# CIP PAVING OVERVIEW

## King County - Administrator

Engineering

Project Bidding

Contract Execution

Project Management

.....  
**Lakeside Industries**

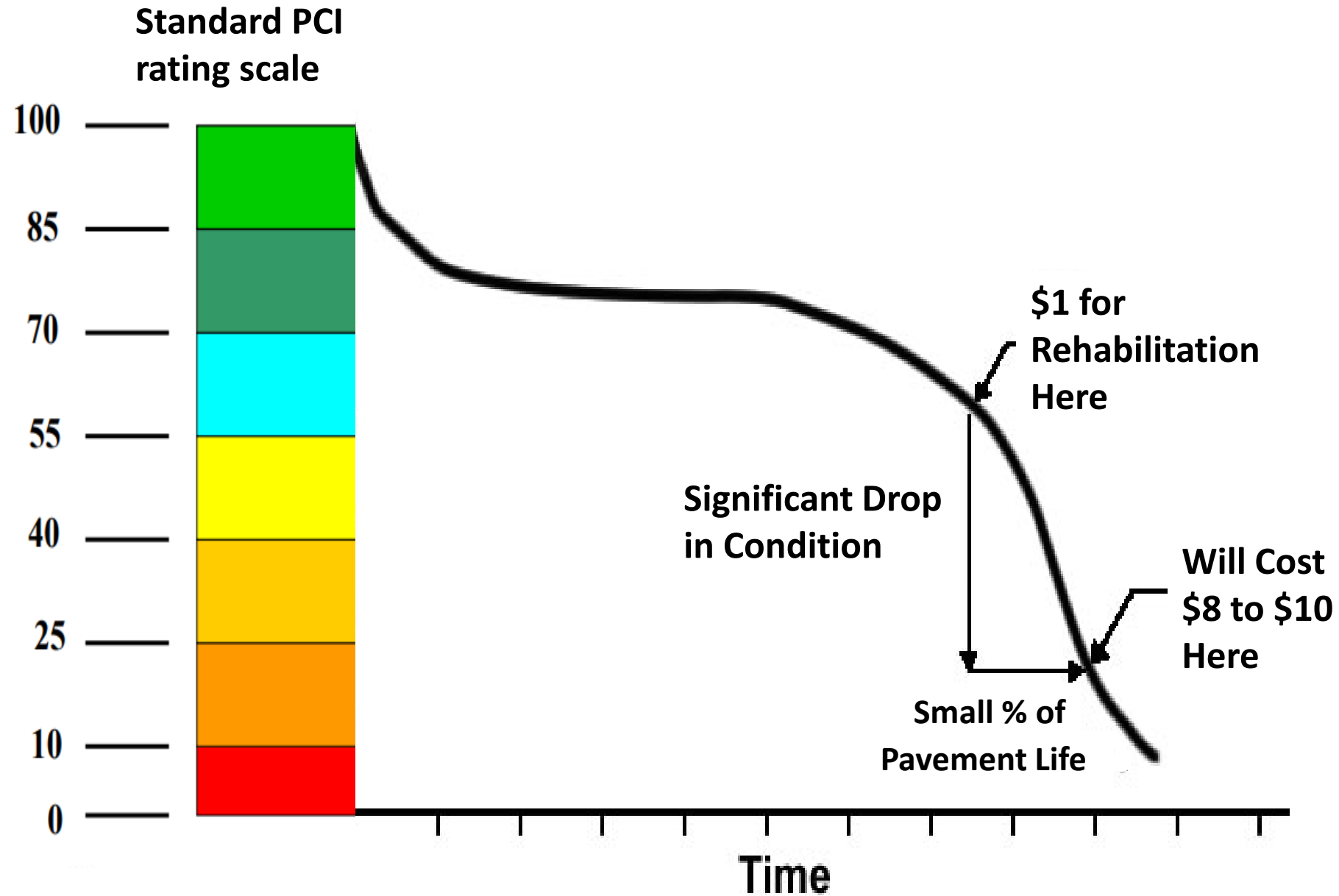
\$3,461,949

**Lake Forest Park**

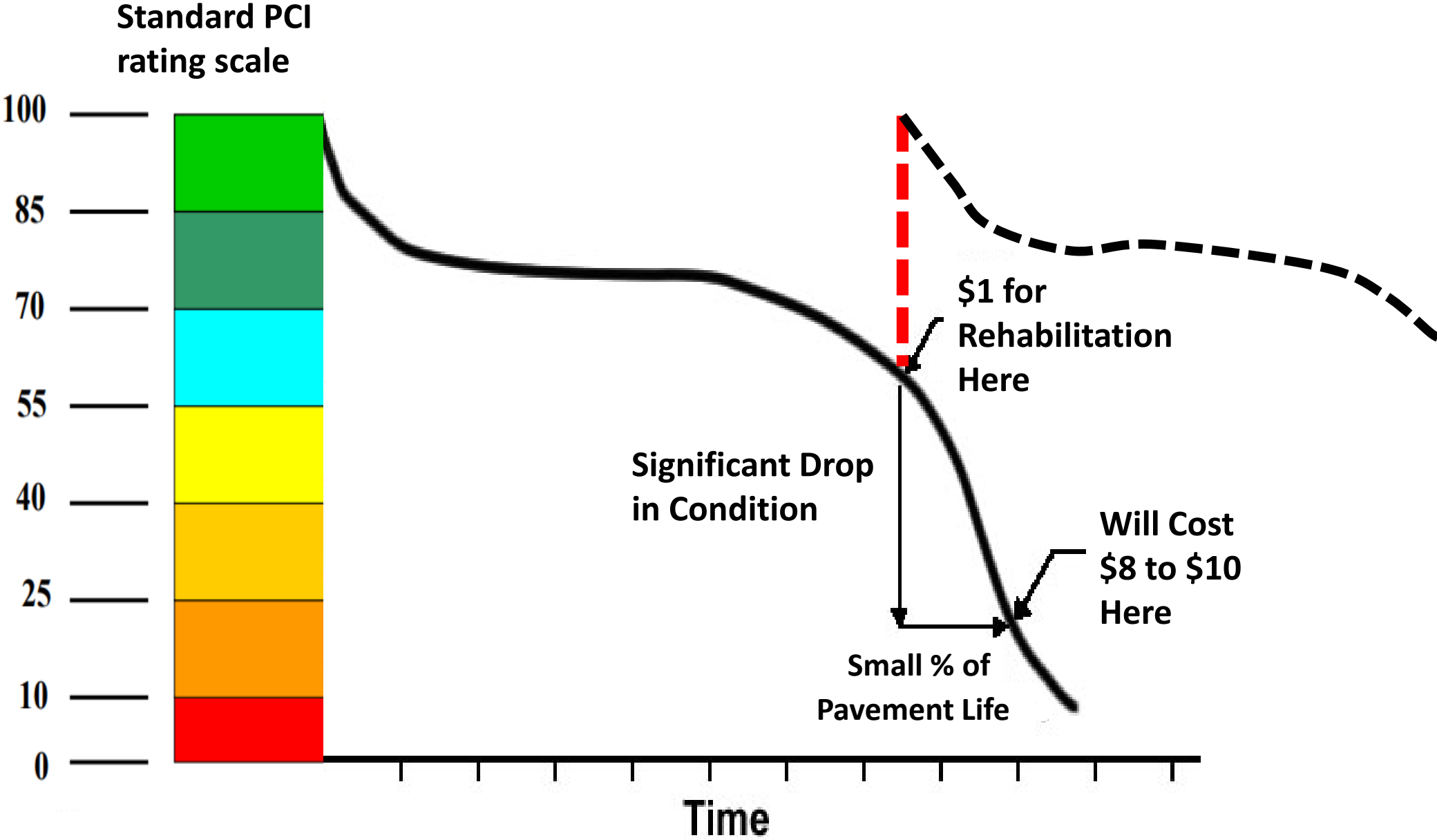
\$459,449

- Carnation
- Hunts Point
- Lake Forest Park
- Normandy Park
- Maple Valley
- Medina
- North Bend
- Yarrow Point

# PAVEMENT DEGRADATION CURVE



# PAVEMENT DEGRADATION CURVE



PCI

100

85

70

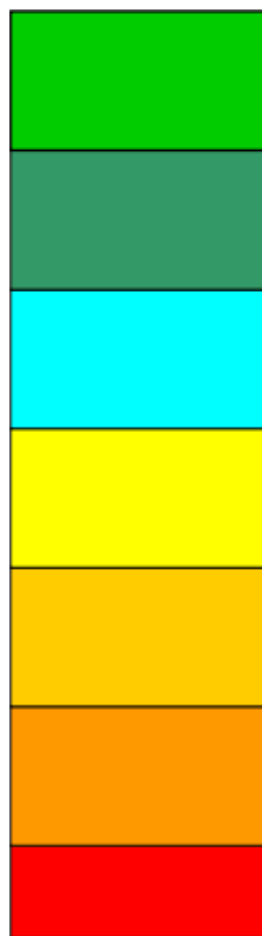
55

40

25

10

0



Rating

Excellent

Very Good

Good

Fair

Poor

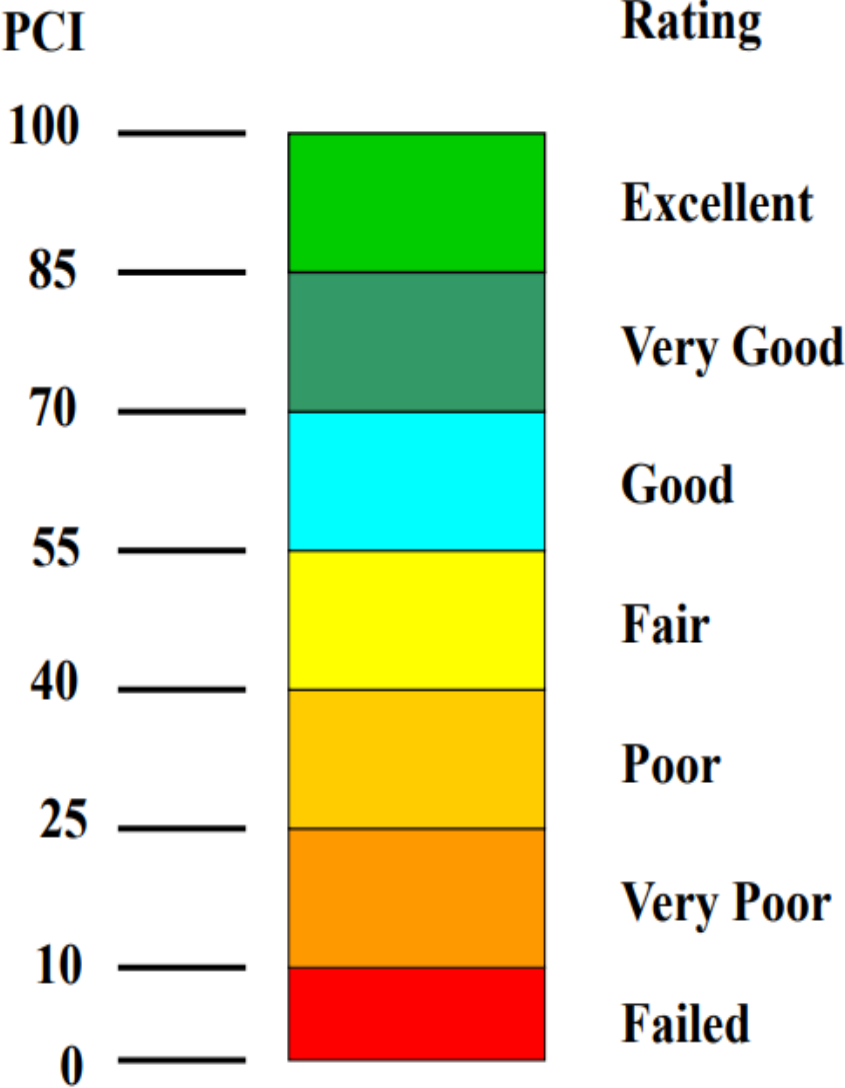
Very Poor

Failed

## PAVEMENT CONDITION INDEX SCORES

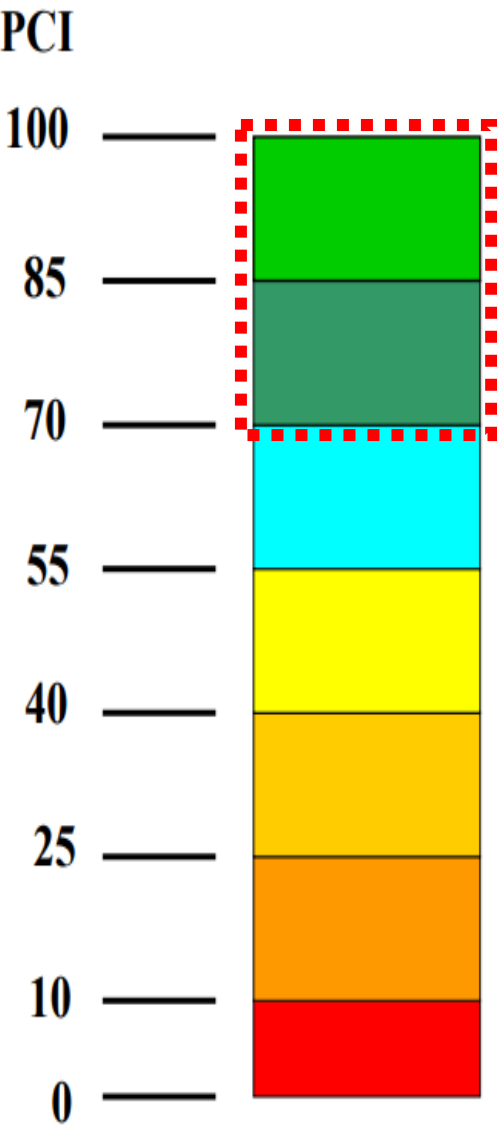
CONDITION	RATING INDEX	DEFINITION
Excellent	86-100	Stable, no cracking, no patching, and no deformation. Very good riding qualities.
Very Good	71-85	Stable, minor cracking, generally hairline and hard to detect. Minor patching and possibly some minor deformation evident. Dry or light-colored appearance. Good riding qualities. Rutting less than ½".
Good	56-70	Generally stable, minor areas of structural weakness evident. Cracking is easier to detect, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.
Fair	41-55	Areas of instability marked evidence of structural deficiency, large crack patterns (alligating) heavy and numerous patches, deformation very noticeable. Riding qualities range from acceptable to poor.
Poor	26-40	Pavement in extremely deteriorated condition. Numerous areas of instability. Majority of section showing structural deficiency. Ride quality is poor.
Very Poor	11-25	Pavement in extremely deteriorated condition. Extensive potholes. Numerous areas of instability. All of section showing structural deficiency. Ride quality is very poor.
Failed	0-10	Pavement structure failed. All of section showing severe structural deficiency.

PAVEMENT CONDITION INDEX SCORES



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PAVEMENT CONDITION INDEX EXAMPLES



**Pavement Condition  
86 – 100 (Excellent)**

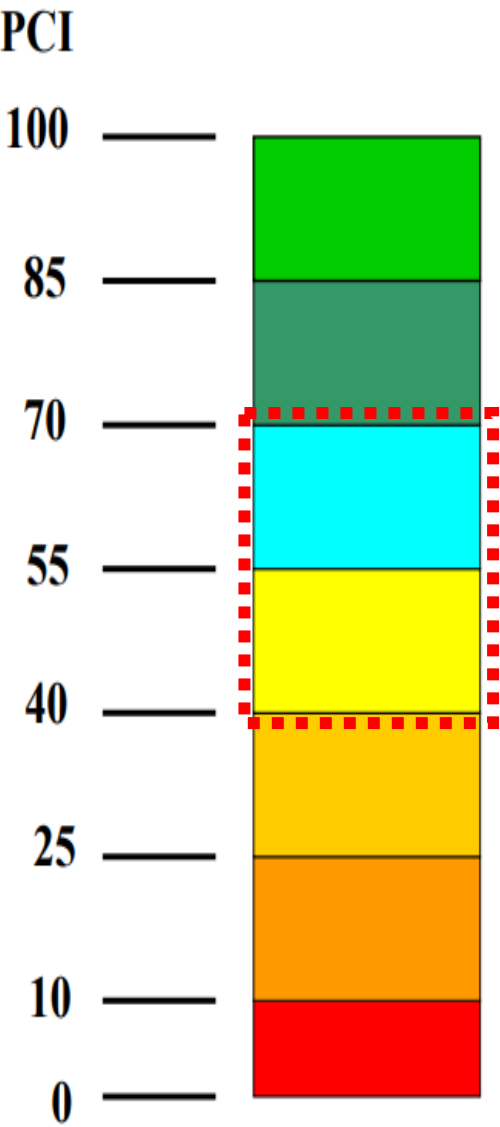


**Pavement Condition  
71 – 85 (Very Good)**





PAVEMENT CONDITION INDEX EXAMPLES



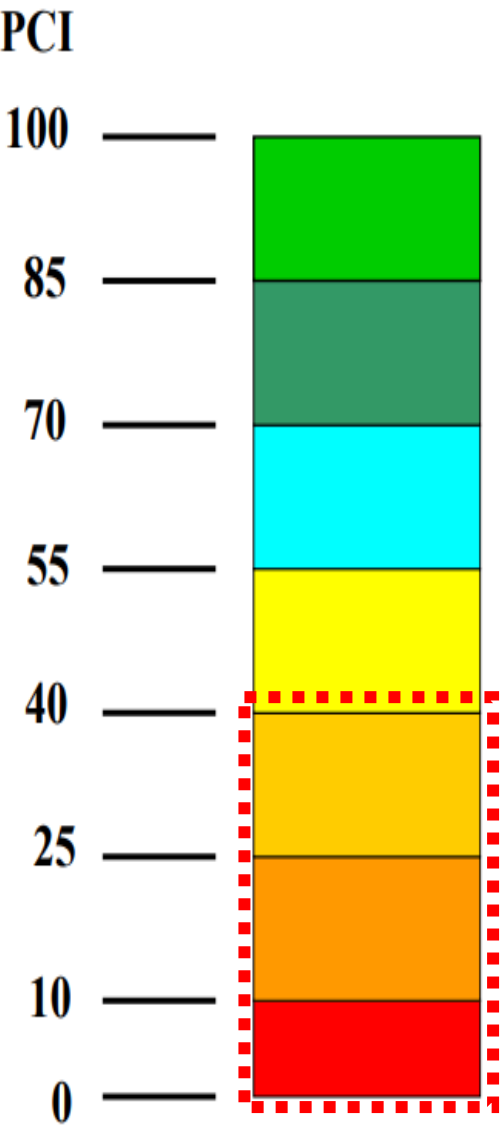
**Pavement Condition**  
**56 – 70 (Good)**



**Pavement Condition**  
**41 – 55 (Fair)**



PAVEMENT CONDITION INDEX EXAMPLES



**Pavement Condition  
11 – 40 (Poor/Very Poor)**



**Pavement Condition  
0 – 10 (Failed)**





# CIP PAVING OVERVIEW



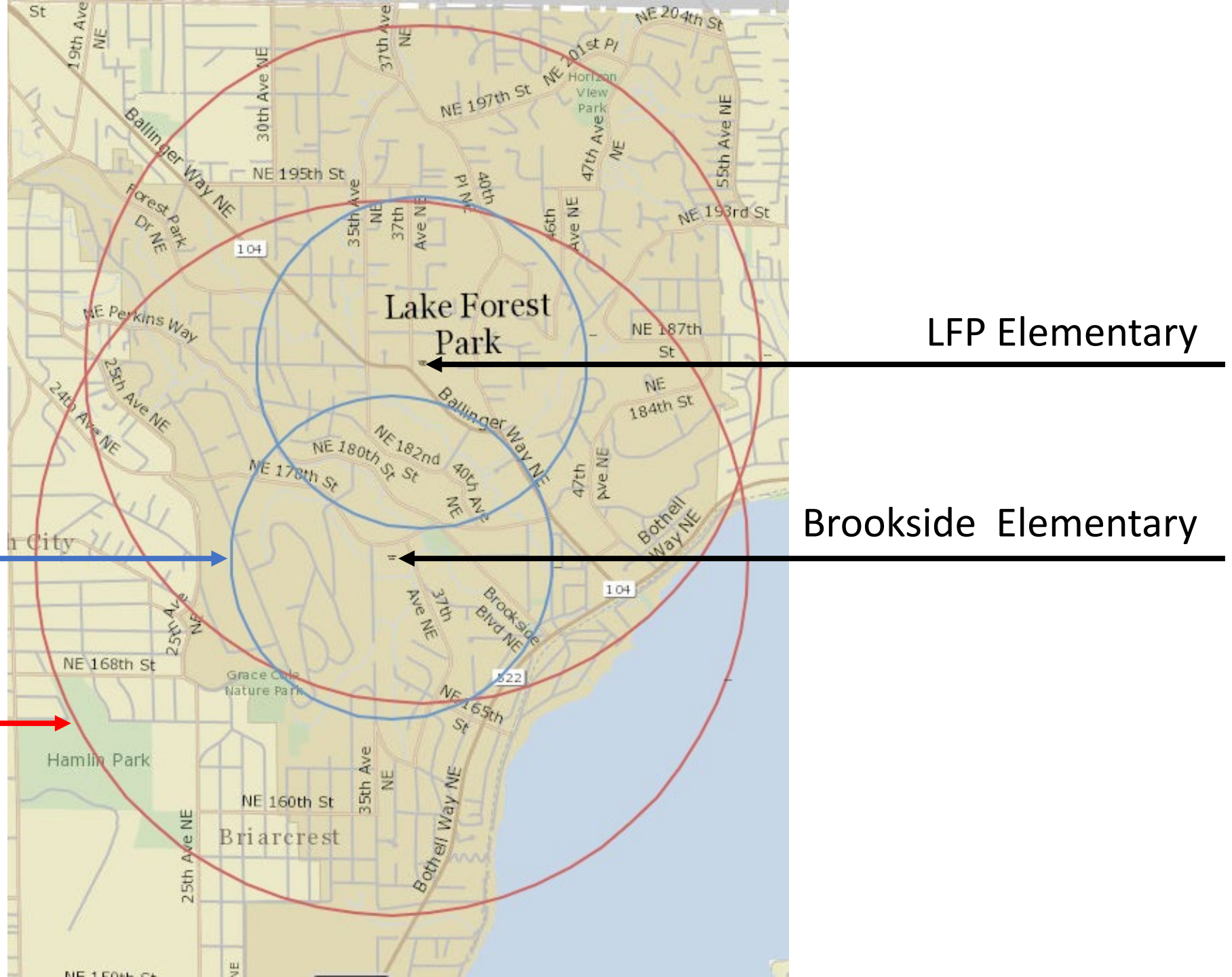
Recently, the pavement management goal is to schedule areas for paving based on geographic areas to focus in on entire communities to minimize future construction impacts and to minimize transportation costs by the contractor. This will increase the efficiency and cost effectiveness of the program.

An annual paving program has multiple benefits for all street users. Maintained roadways are safer, with fewer potholes, updated striping, and often provide an opportunity for pedestrians and bicyclists improvements, as exemplified by new curb ramp installation and pavement striping for new bikeways. Every time a roadway receives a new surface, staff evaluates opportunities to install bicycle lanes or identify a street as a bike route. In addition, preventative maintenance of streets is similar to regular oil changes for a vehicle. Studies show that taken over the life cycle of the pavement, it is over twice as expensive to completely rebuild a street than to properly maintain them with a surface treatment program.

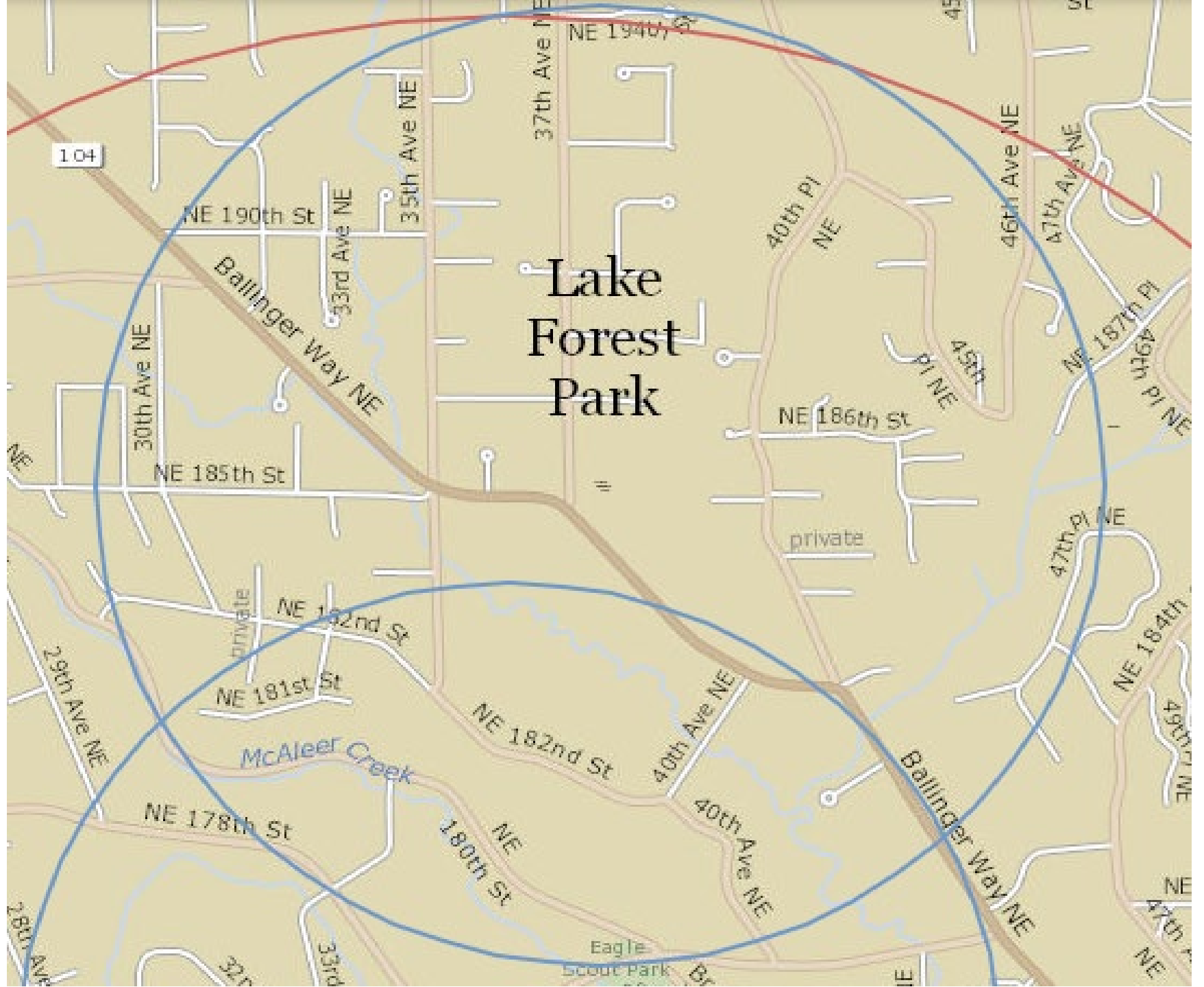
# Proximity Map for Lake Forest Park's Elementary Schools

## 1/2 Mile Radius

## 1 Mile Radius

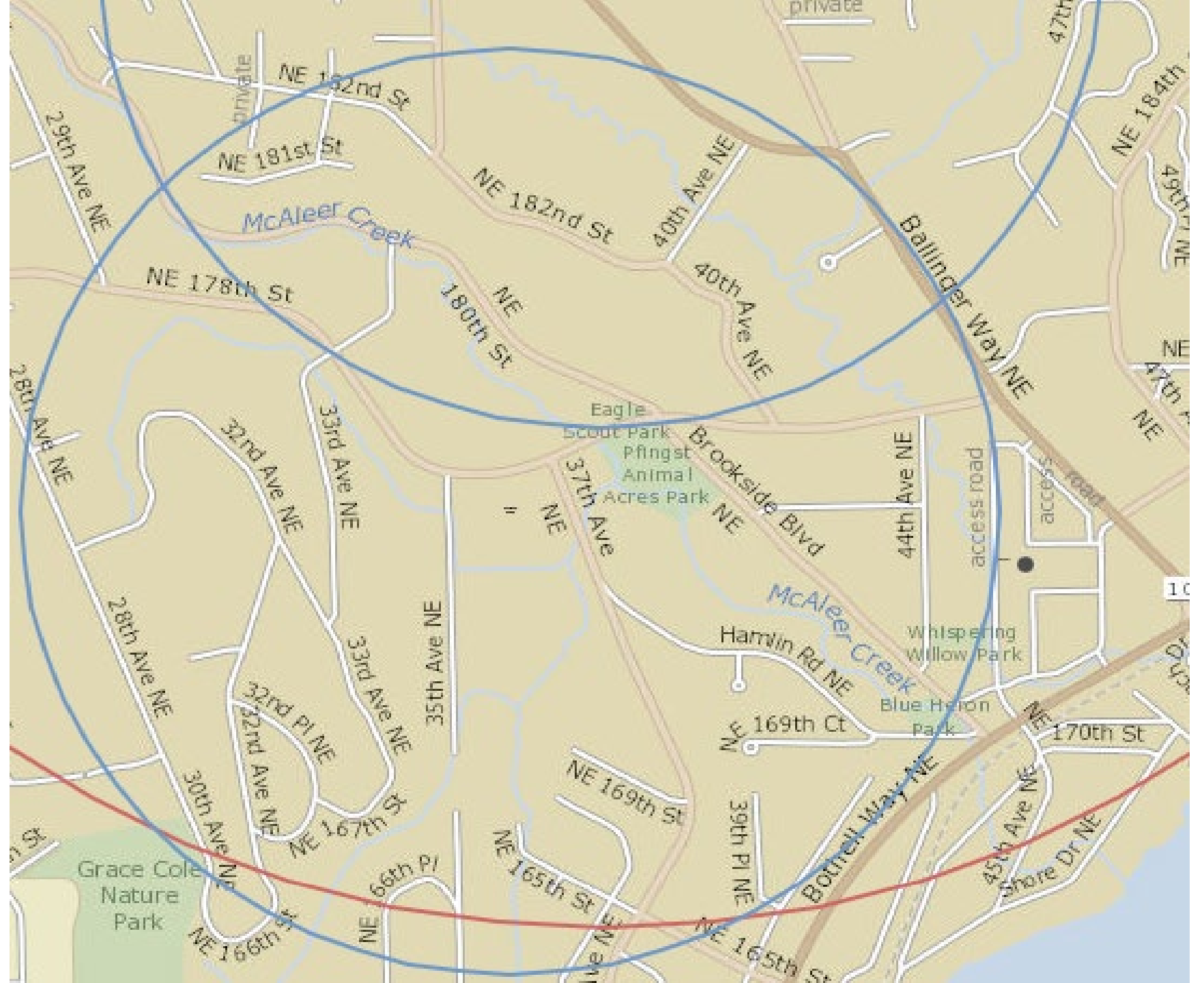


# Proximity Map for Lake Forest Park Elementary School (1/2 mile)





# Proximity Map for Brookside Elementary School (1/2 mile)

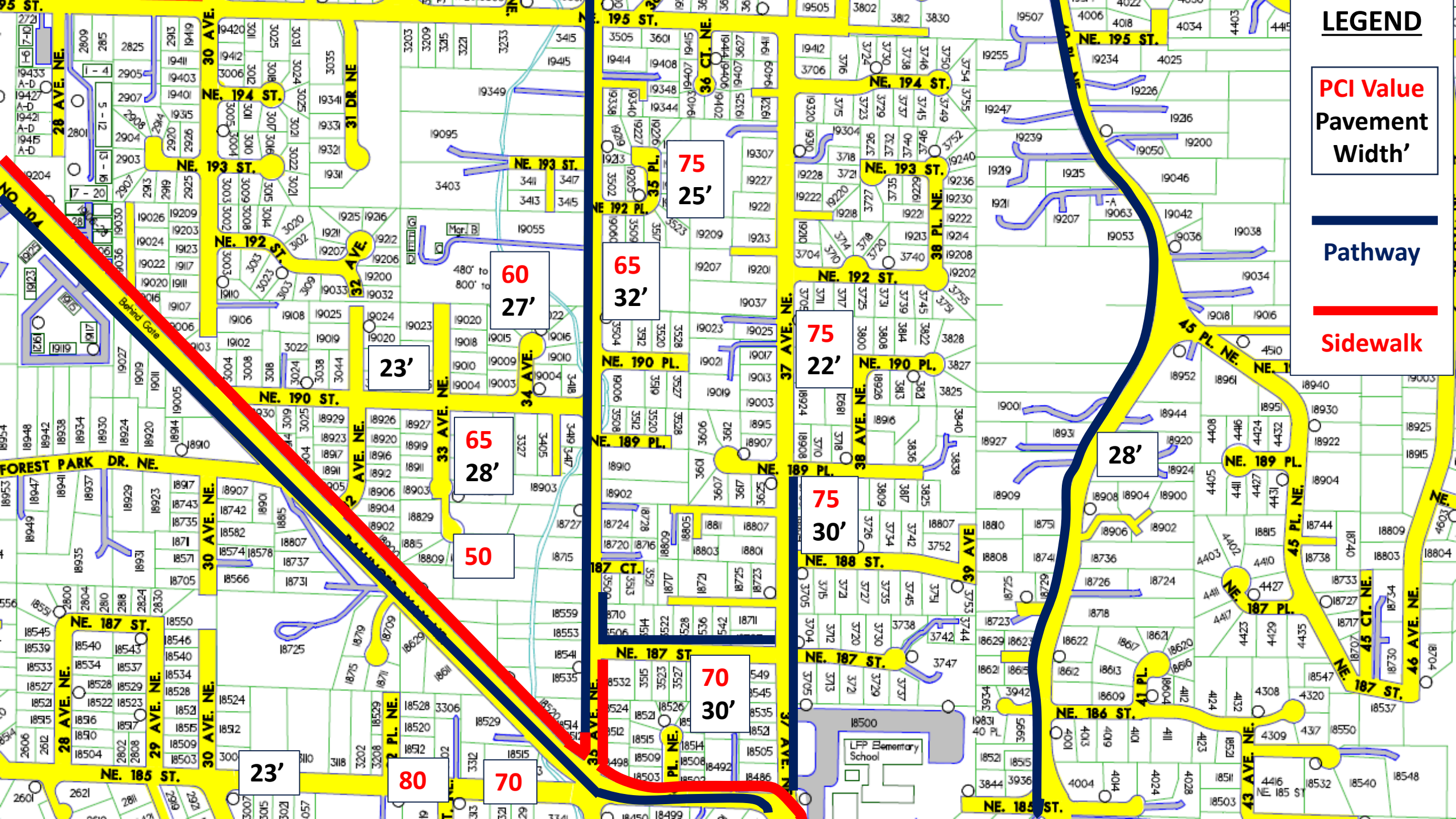


## 2.03(B) Urban Local Access Streets - (Curb Roadway Section)

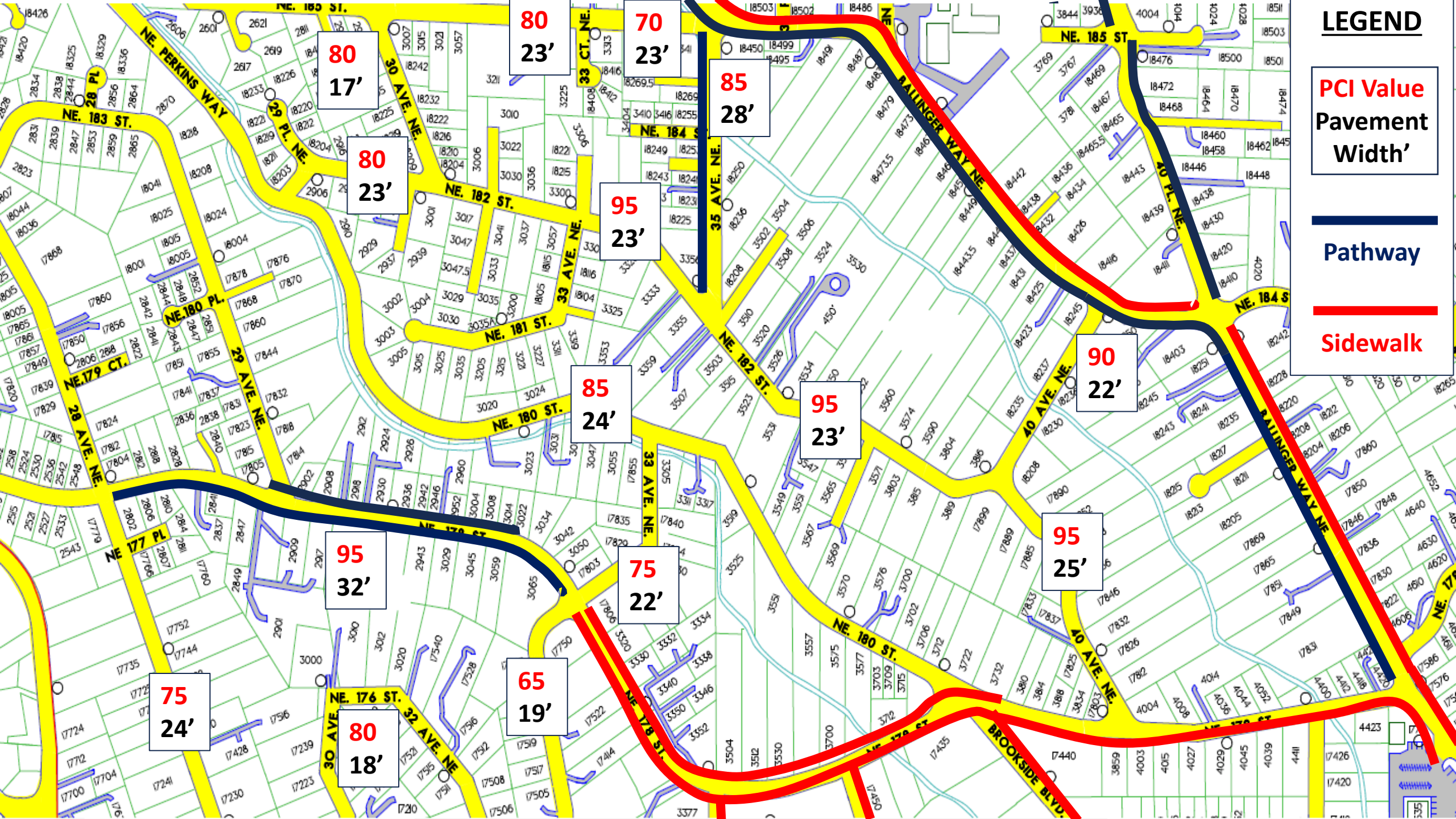
Classification	Neighborhood Collectors	Subcollectors	Subaccess	Minor Access
Access	Restricted, Lots front on local access street where feasible.	As needed with some restrictions. <sup>1</sup>	Subaccess streets are not supportive of through traffic. Generally permanent cul-de-sacs or short loop <sup>2</sup> streets that connect to subcollectors.	Permanent cul-de-sacs or short loops with low traffic volumes that provide circulation and access to off-street parking within residential development limits.
Public or Private	Public	Public	Public or Private	Public or Private (See Section 2.06)
Serving Potential Number of Lots or Dwelling Units	Over 100 <sup>3</sup>	100 Maximum <sup>4</sup>	50 Maximum	16 Maximum
Design Speed <sup>5</sup>	35 mph	30 mph	Low Speed Curve (See Section 2.10)	Low Speed Curve (See Section 2.10)
Max Superelevation	See Section 2.04B	See Section 2.04B	See Section 2.04B	See Section 2.04B
Horizontal Curvature	See Table 2.2	See Table 2.2	Low Speed Curve (See Section 2.10)	Low Speed Curve (See Section 2.10)
Maximum Grade <sup>6</sup>	11%	12%	12%	12%
Minimum Stopping Sight Distance	See Table 2.2	See Table 2.2	150 feet	150feet
Minimum Entering Sight Distance	See Table 2.2	-	-	-
Typical Traveled Way <sup>8</sup>	22 feet <sup>17</sup>	22 feet	22 feet	22 feet
Typical Roadway Width <sup>9</sup>	32 feet <sup>7</sup>	28 feet	24 feet	22 feet
Minimum Right-of-Way Width <sup>8</sup>	56 feet	48 feet	40 feet	40 feet
Minimum Half Street Width	20 feet	20 feet	20 feet	20 feet
Minimum One Way Paved Width	20 feet	20 feet	20 feet	20 feet
Minimum Sidewalk Width	See Section 3.02	See Section 3.02	See Section 3.02	See Section 3.02
Curb Type	Vertical	Vertical/Rolled	Vertical/Rolled	Vertical/Rolled

6. Sidewalks shall be constructed next to the curb except in those situations where the County Road Engineer approves the construction of a planting strip adjacent to the curb.
7. Sidewalks shall be a minimum width of five feet on residential access streets and arterials. Minimum sidewalk width shall be six and one-half feet on arterials if curb is next to traveled lane. Sidewalks shall be a minimum width of eight feet on commercial access streets.
8. At least eight feet wide:
  - a. Where the street frontage has the characteristics of a business/commercial district and where the building frontage is within 80 feet of the street right-of-way.
  - b. Within the curb radius returns of all arterial intersections where curb ramps are required.
  - c. Within designated bus zones to provide a landing area for wheelchair access to transit services.
9. With specified width greater than eight feet where the County Road Engineer or Development Engineer determines this is warranted by expected pedestrian traffic volume.
10. With Portland cement concrete surfacing as provided in Sections 3.03 and 4.01. See specifications for joints in Section 3.04 and figure 3-001.
11. A minimum of one foot of gravel or native material shall be provided back of and immediately adjacent to the sidewalk. The material shall be flushed with the top of sidewalk.

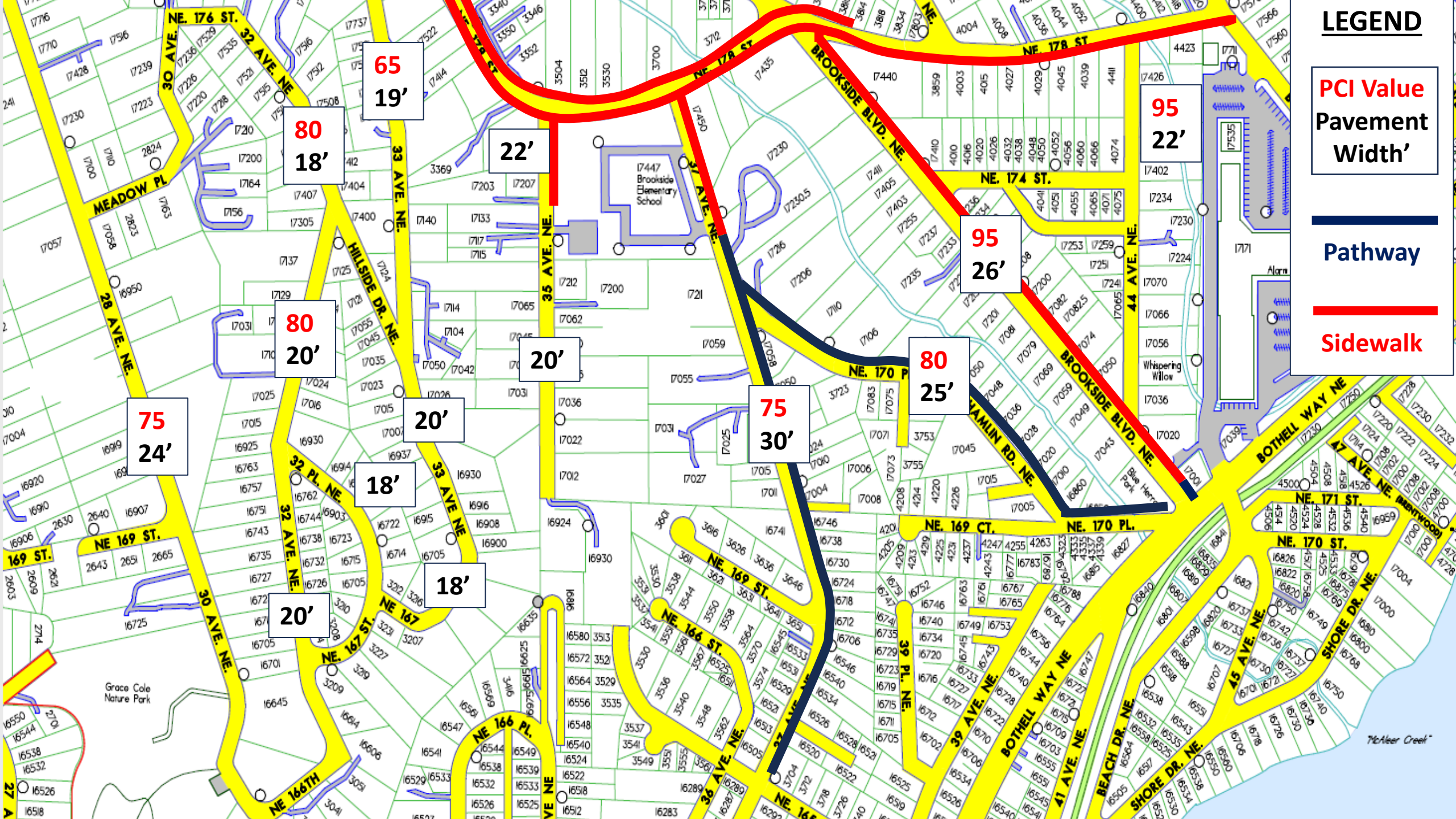
## Sidewalk











**LEGEND**

**PCI Value**  
**Pavement**  
**Width'**

**Pathway**

**Sidewalk**





Good - PCI = 65

Generally stable, **minor areas of structural weakness evident. Cracking is easier to detect**, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. **Ride qualities are good to acceptable.**






Good - PCI = 65

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Alligator Cracking

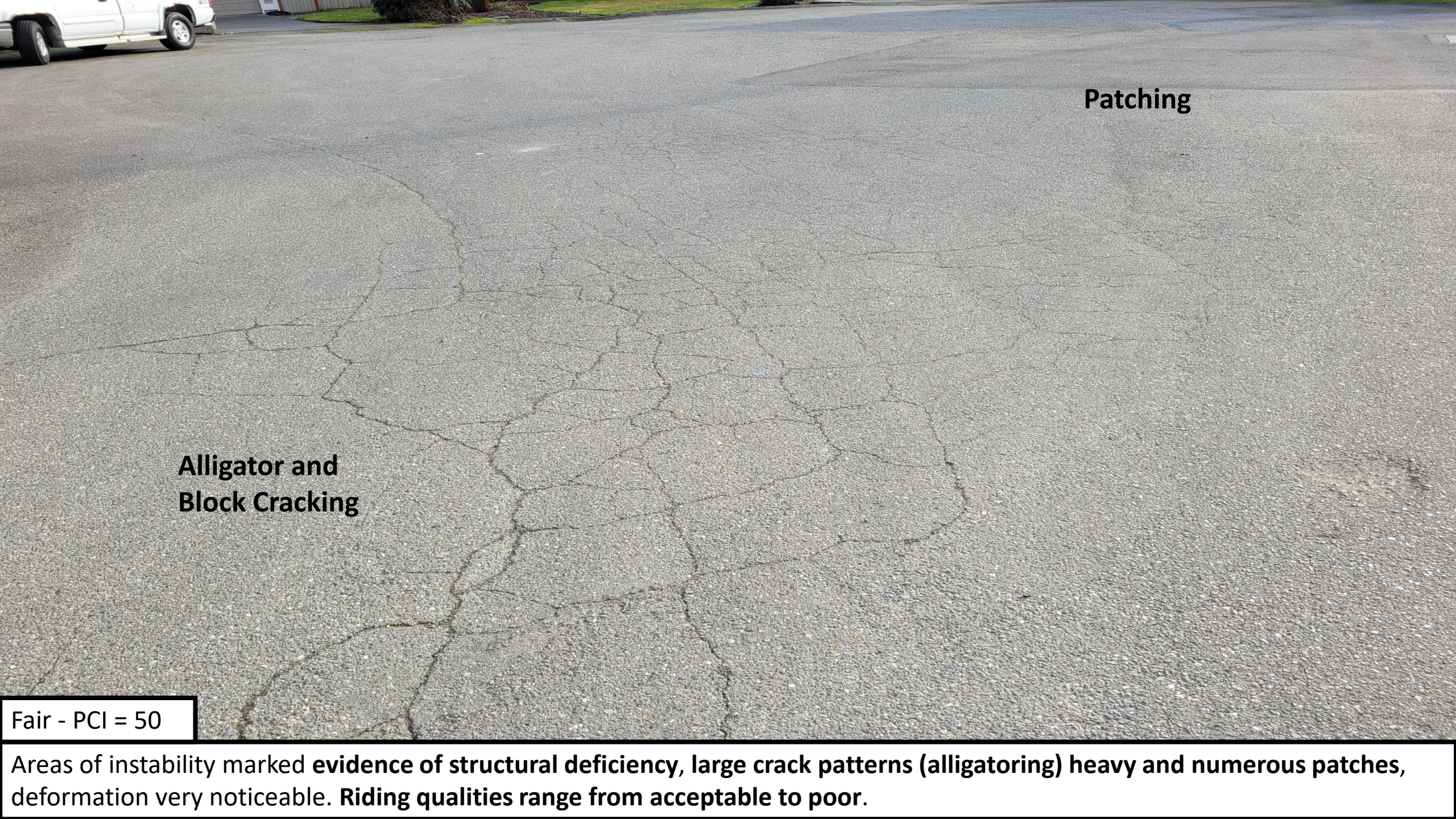
Numerous Patches

Utility structures misaligned  
leading to poor ride quality

Fair - PCI = 50

Areas of instability marked evidence of structural deficiency, **large crack patterns (alligatoring)** heavy and numerous patches, deformation very noticeable. **Riding qualities range from acceptable to poor.**





Patching

Alligator and  
Block Cracking

Fair - PCI = 50

Areas of instability marked **evidence of structural deficiency**, large crack patterns (alligatoring) heavy and numerous patches, deformation very noticeable. **Riding qualities range from acceptable to poor.**





## Expansive Alligator Cracking

Fair - PCI = 50

Areas of instability marked evidence of structural deficiency, **large crack patterns (alligatoring)** heavy and numerous patches, deformation very noticeable. **Riding qualities range from acceptable to poor.**





Good - PCI = 60

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect**, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.





## Extensive Longitudinal Cracking

Good - PCI = 60

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect**, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.





Patching


Utility structure settling

Cracking

Good - PCI = 60

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect, patches evident**, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.



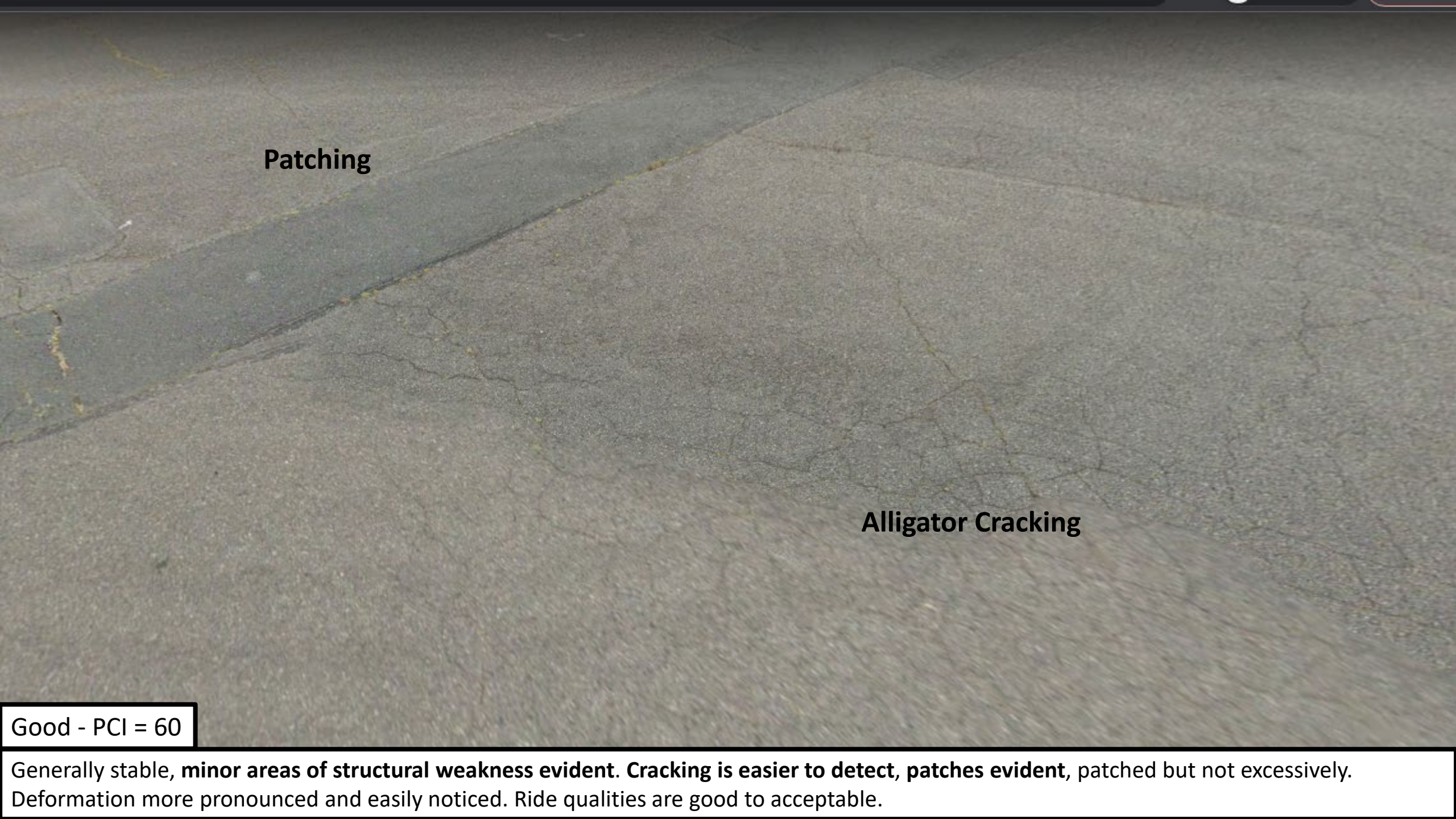


Base under the pavement  
settled around utility structure  
leading to poor ride quality

Good - PCI = 60

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect, patches evident**, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.





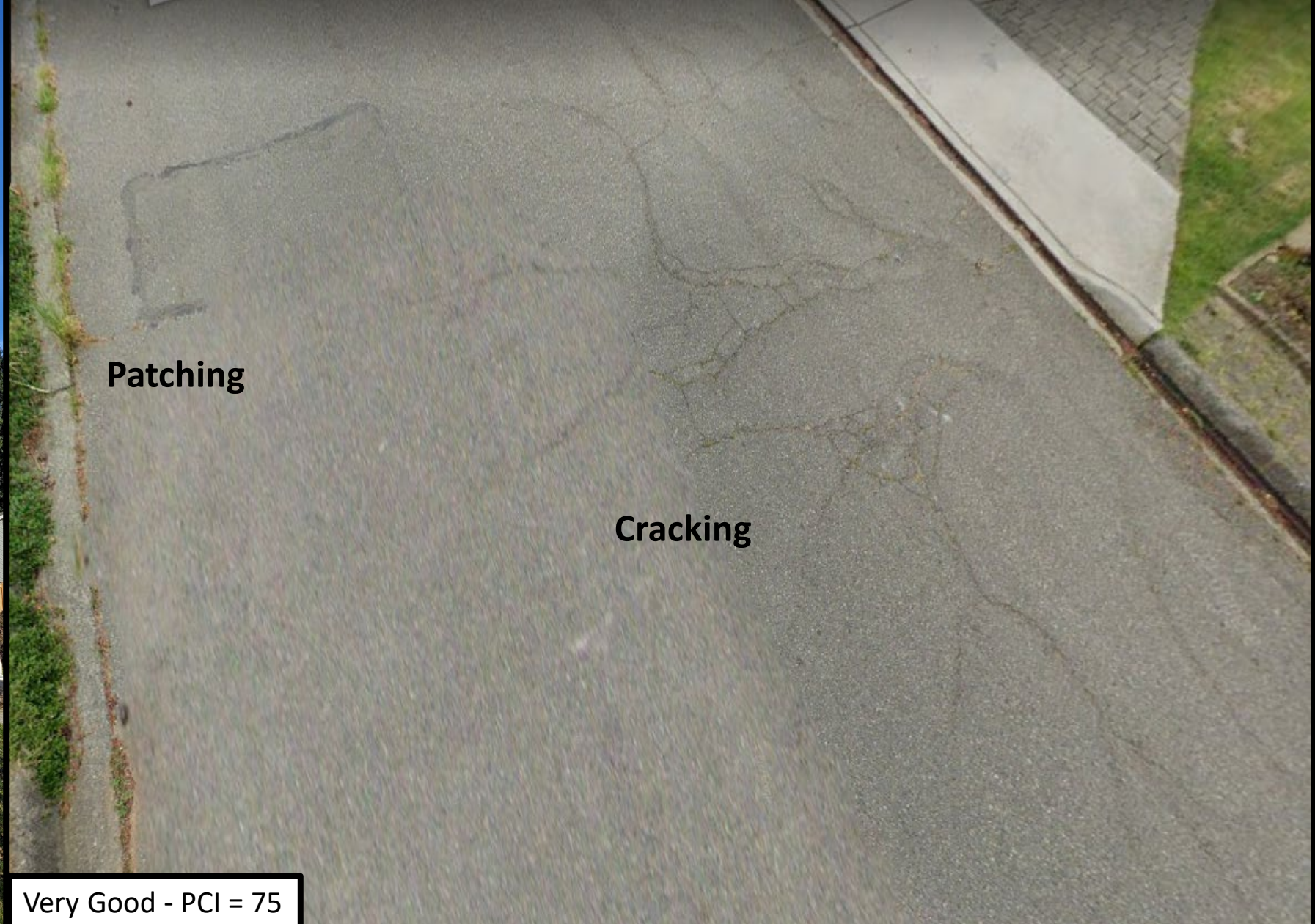
Patching

Alligator Cracking

Good - PCI = 60

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect, patches evident**, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.





Very Good - PCI = 75

Stable, minor cracking, **generally hairline and hard to detect**. **Minor patching** and possibly some minor deformation evident. Dry or light-colored appearance. **Good riding qualities**. Rutting less than ½".






Stormwater related issues

Very Good - PCI = 75

**Stable, minor cracking**, generally hairline and hard to detect. **Minor patching** and possibly some minor deformation evident. Dry or light-colored appearance. **Good riding qualities. Rutting less than ½".**





Large-Scale Cracking

Large-Scale Cracking

Very Good - PCI = 75

**Stable, minor cracking**, generally hairline and hard to detect. **Minor patching** and possibly some minor deformation evident. Dry or light-colored appearance. **Good riding qualities. Rutting less than ½".**





Large-Scale Cracking

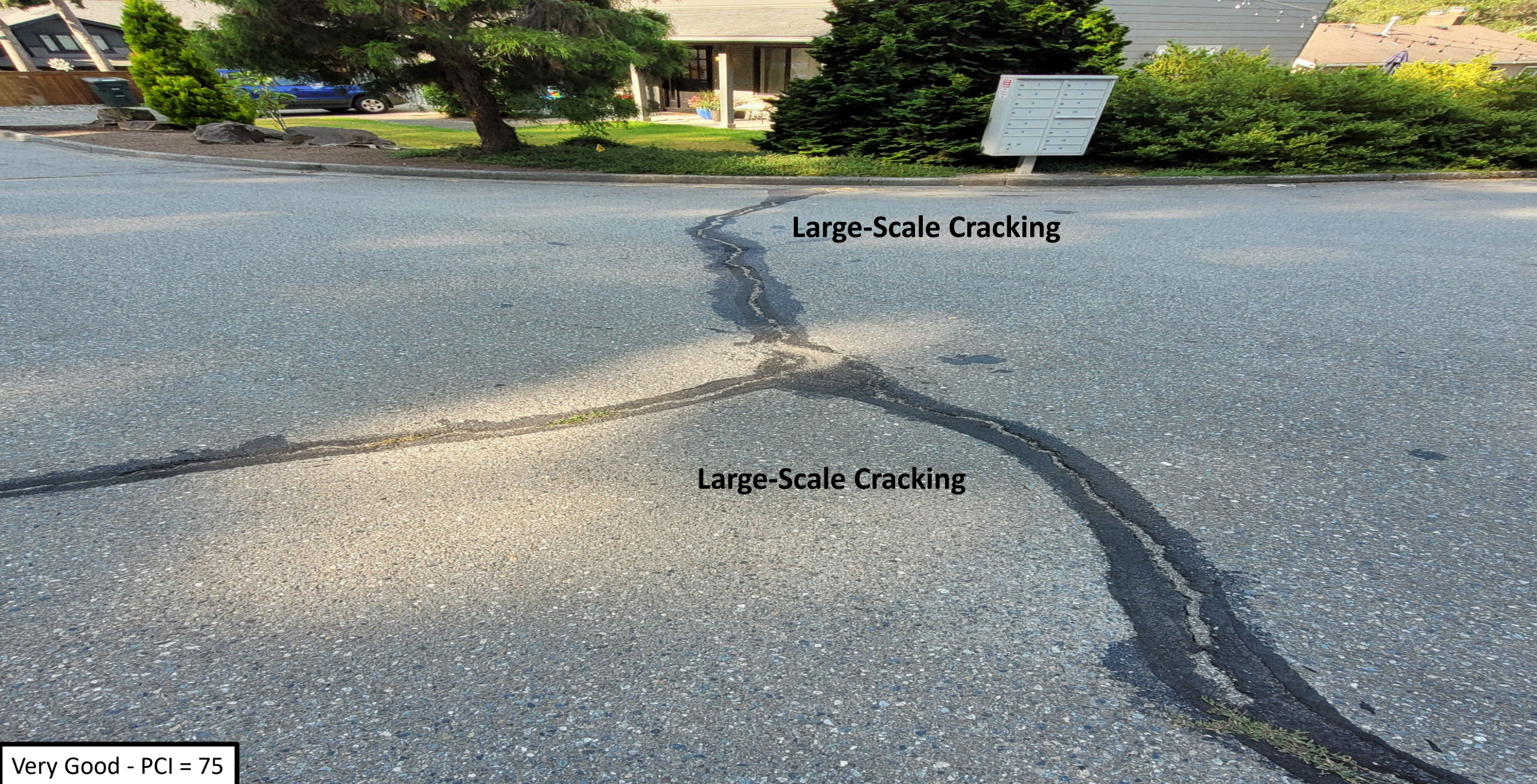
Patching

Large-Scale Cracking

Very Good - PCI = 75

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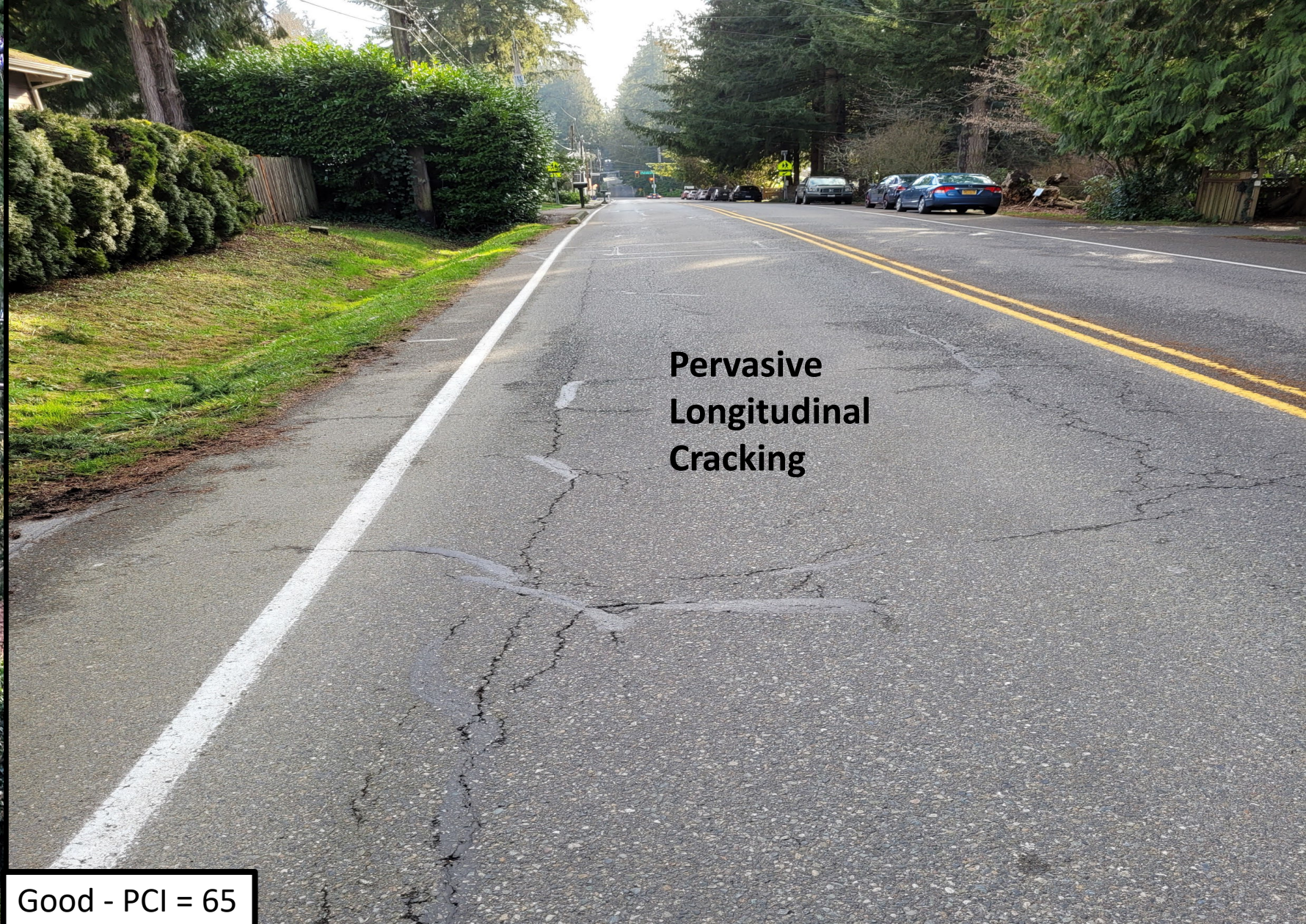
Large-Scale Cracking

Large-Scale Cracking

Very Good - PCI = 75

**Stable, minor cracking**, generally hairline and hard to detect. **Minor patching** and possibly some minor deformation evident. Dry or light-colored appearance. **Good riding qualities. Rutting less than ½".**





Pervasive  
Longitudinal  
Cracking

Good - PCI = 65

Generally stable, **minor areas of structural weakness evident**. Cracking is easier to detect, patches **evident**, patched but not excessively. Deformation more pronounced and easily noticed. **Ride qualities are good** to acceptable.





Pervasive  
Longitudinal  
Cracking

Deteriorated Curb

Good - PCI = 65

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect**, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. **Ride qualities are good** to acceptable.





Pervasive  
Longitudinal  
Cracking

Structural  
Cracking

Good - PCI = 65

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect**, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. **Ride qualities are good** to acceptable.






Patching

Patching

Good - PCI = 65

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect, patches evident**, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable.



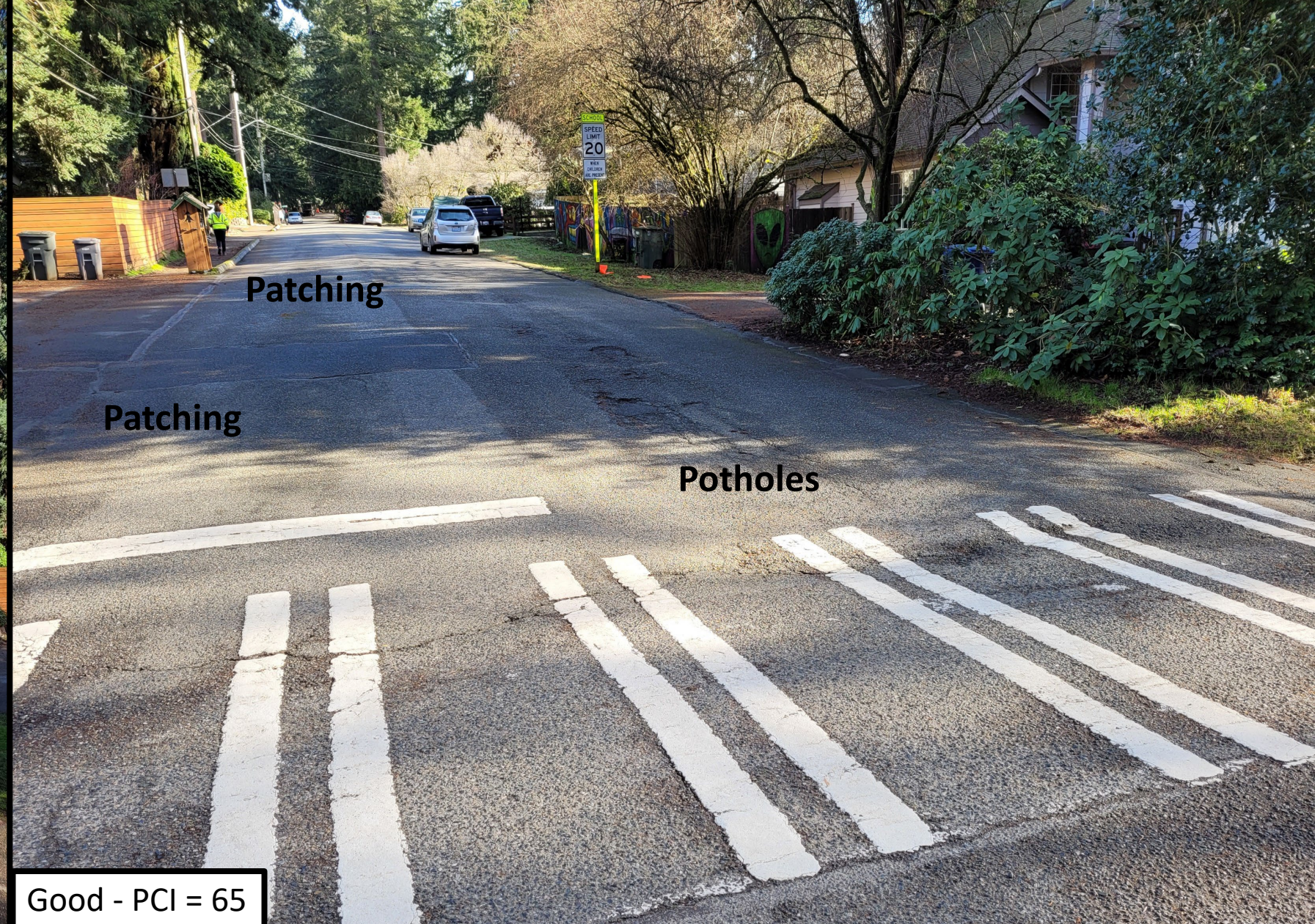


Pervasive  
Longitudinal  
Cracking

Good - PCI = 65

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect**, patches evident, patched but not excessively. Deformation more pronounced and easily noticed. **Ride qualities are good** to acceptable.





Good - PCI = 65

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## Drainage Issues

Good - PCI = 65

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Longitudinal  
cracking

Latitudinal  
cracking

Good - PCI = 65

Generally stable, **minor areas of structural weakness evident**. **Cracking is easier to detect, patches evident**, patched but not excessively. Deformation more pronounced and easily noticed. **Ride qualities are good** to acceptable.





Severe pavement sloping

Good - PCI = 65

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Alligator  
Cracking

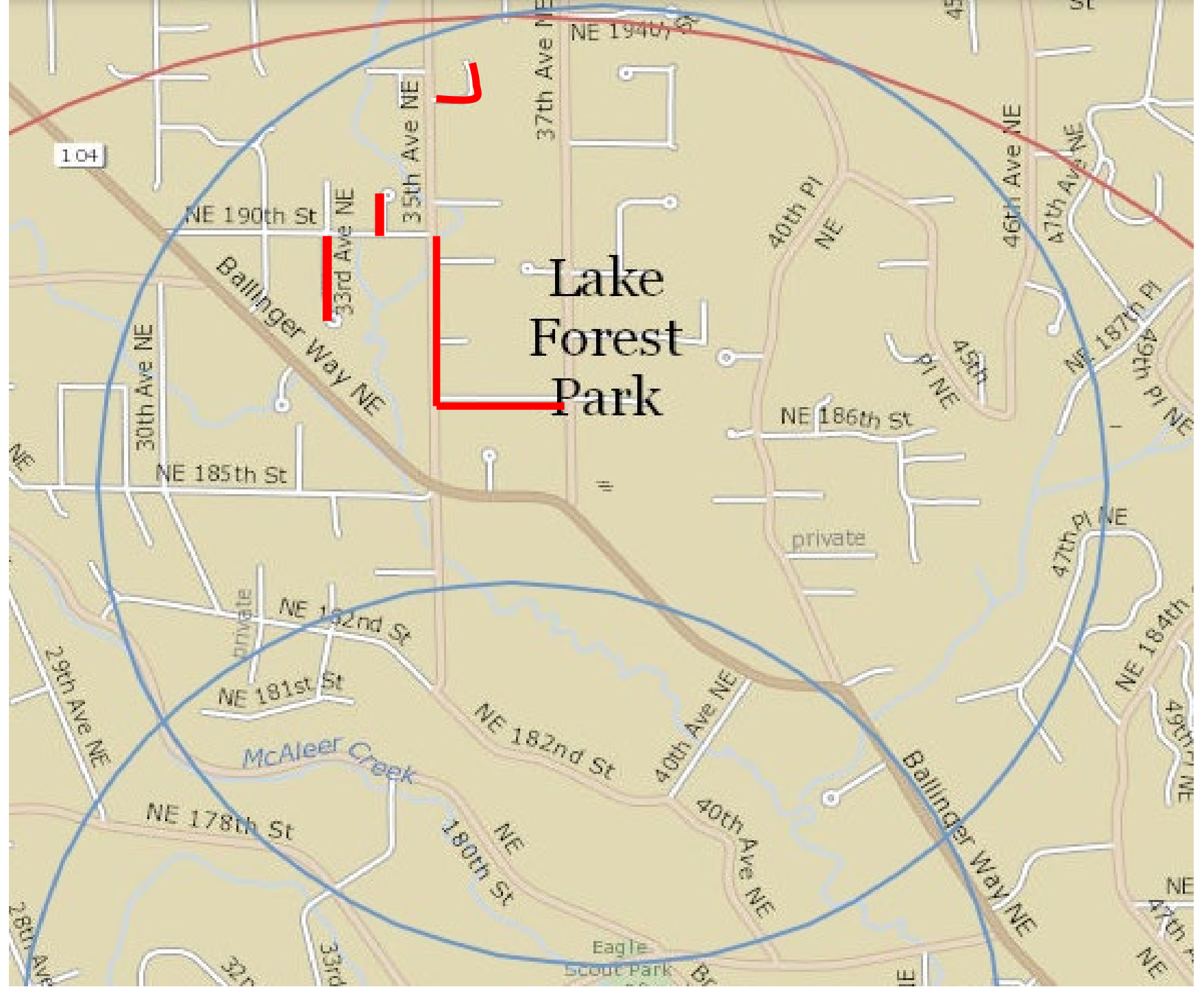
Potholes

Good - PCI = 65

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# Proximity Map for Lake Forest Park Elementary School (1/2 mile)



Location	Estimated Cost/Location
33rd Ave Ne: NE 190th St to End of Road	\$74,092
34rd Ave Ne: NE 190th St to End of Road	\$50,233
NE 192nd St: NE 192nd St to End of Road	\$66,938
35th Ave Ne: NE 190th St to NE 187th St	\$137,340
NE 187th St: 35th Ave NE to 37th Ave NE	\$130,846
<b>Estimated Total Cost:</b>	<b>\$459,449</b>