

Welcome

Roads Committee

ROADS - 101

01/13/2020



Roads Team Members

- **DPW Staff**
 - Director
 - Deputy Director, Megan Mikus
 - City Engineer, Ben Croy
 - Construction Engineer, Aaron Staup
 - Staff Engineer, Rebecca Runkel
- **Consulting Engineers**
 - OHM Advisors
 - Tim Juidici
 - AECOM
 - Mark Koskinen
 - Spalding DeDecker
 - Jeremy Schrot

How Novi Funds Roads

▪ 202 – Major Roads

- Funded by ACT 51 ~ \$4M/year
 - Anticipate increase of 8% annually through FY 2022-23

▪ 203 – Local Roads

- Funded by ACT 51 ~ \$1.5M/year
 - Anticipate increase of 8% annually through FY 2022-23

▪ 204 – Municipal Roads

- Funded by Metro Act Revenue approx. \$185,000/year
- Funded by Trunkline Revenue approx. \$113,000/year
- Funded by dedicated road millage (1.5 mills) which has generated between \$4.9 - \$5.3M/year to supplement **202, 203** through FY 2018-19. Due to rollback, millage rates:
 - FY 2016-17 was 1.4923
 - FY 2017-18 was 1.4708
 - FY 2018-19 was 1.4484
 - FY 2019-20 is 1.4273

Supplementary Roads Funding Sources

- **Oakland County Federal Aid Committee (FAC)**
 - 62 Cities, RCOC, MDOT
 - Discuss and disperse federal road funds
 - Apps are scored and ranked in yearly “call for projects”
 - ~\$17M in funding, ~\$6M goes to CVT’s
 - Wixom Rd, 10 to City Limits (2022), Taft Rd in call, 8 ½ to 10 (2023)
- **Tri-Party**
 - City, County, + RCOC
 - ~\$6M (\$3M for Twps and \$3M Cities and Villages)
 - Dispersed by miles of county roads
 - Can accumulate
 - 12 Mile and Novi Intersection, 10 Mile Road
- **Corridor Improvement Authority (CIA)**
 - Tax Increment Finance capture that can be used on capitol projects
 - Helped fund Ring Roads



Funding, continued

- **Local Road Improvement Program (LRIP)**
 - County Commissioners Office
 - Based on economic development
 - Questionable availability in future
 - Crescent Blvd (NE Ring), Lee BeGole (2019)
- **Highway Safety Improvement Program (HSIP)**
 - Federal program to improve safety
 - Data driven
 - Intersections, 9 Mile and Taft RAB (2023) combined with FAC
- **Transportation Economic Development Fund (TEDF)**
 - Federal job creation and job retention
 - Awarded on case by case basis
- **Better Utilizing Investments to Leverage Development (BUILD)**
 - Federal rigorous merit-based process
 - Beck Road

Other Utilities

- **Road Commission for Oakland County (RCOC)**
 - Even Mile Roads (east-west) and Haggerty, Napier & Novi (8 to 12) (north-south)
 - Strategic Planning, bi-annual
 - 10 Mile, 12 Mile
- **Wayne County Roads Division**
 - 8 Mile (Center to Haggerty)
- **Michigan Department of Transportation (MDOT)**
 - I-96, M-5, etc.
 - Flex Route I-96 (Kensington Road to I-275)
- **Great Lakes Water Authority (GLWA)**
 - Coordinate and planning
 - 14 Mile Redundancy Route
- **DTE Energy**
 - Overhead and Underground relocation
 - NW & SW Ring Roads

Utilities, cont'd

- **Water Resources Commission (WRC)**
 - County water and sewer infrastructure
 - Storm water
- **Environment, Great Lakes & Energy (EGLE)**
 - Formerly MDEQ
 - Permitting wetlands, waters of the state, SESC (Novi handles own)
- **Consumers (natural gas)**
 - Underground relocation
- **ITC Holdings**
 - Independent electricity transmission
 - ITC Trail, Taft Bridge over I-96
- **Franchise Fiber/Cable**
 - Various in Right-of-Way (ROW)

Roadway Jurisdiction

City of Novi, Michigan

LEGEND		
City of Novi-Local	Oakland County	Railroad
City of Novi-Major	Wayne County	Lakes
City of Novi-Private	State	Parks
Novi Township	City of Northville	City of Novi
City-Shared (Northville)	City of Wixom	Novi Township



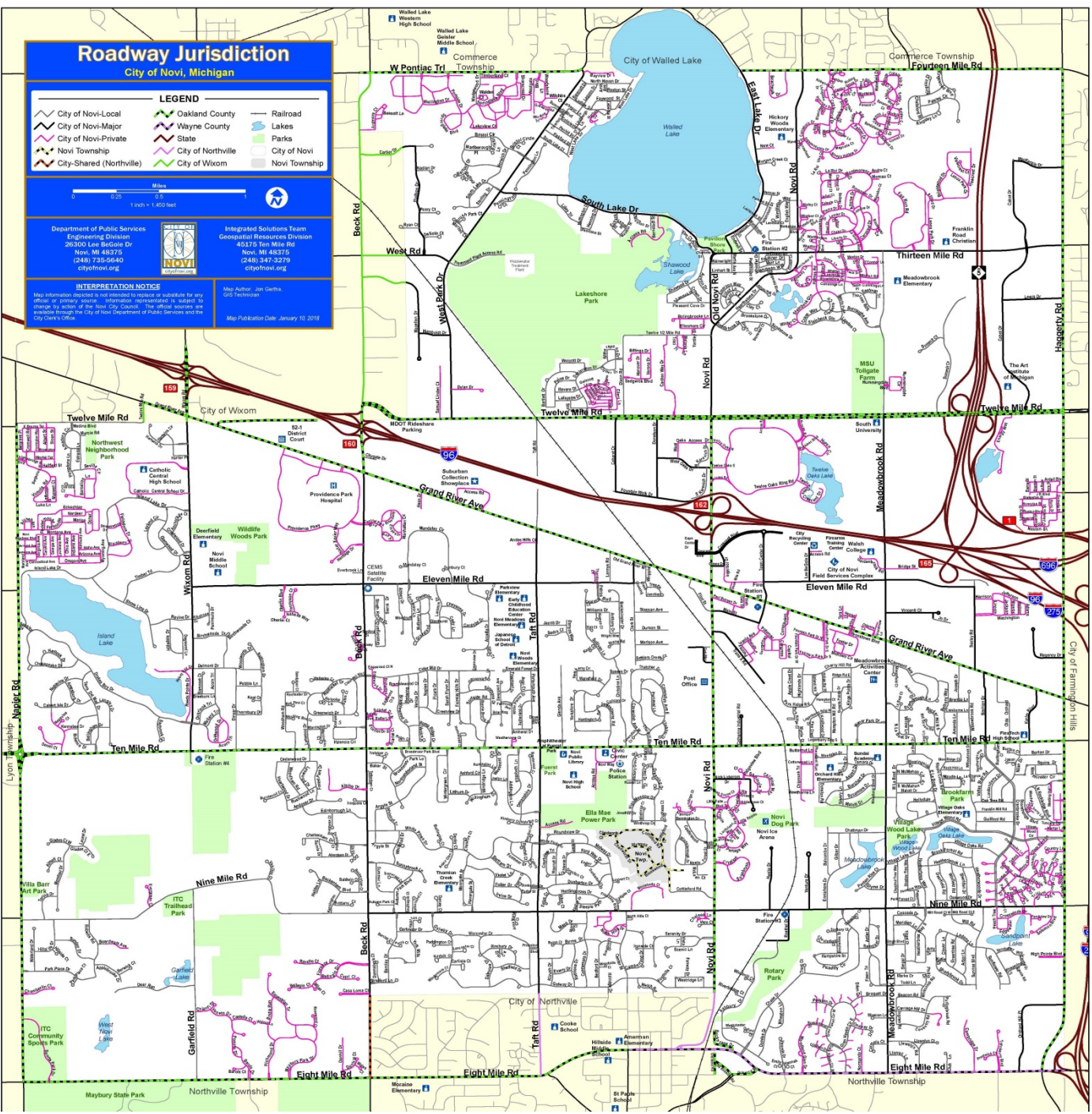
Department of Public Services
Engineering Division
26300 Lee BeGole Dr
Novi, MI 48275
(248) 735-5640
cityofnovi.org



Integrated Solutions Team
Geospatial Resources Division
46175 Ten Mile Rd
Novi, MI 48275
(248) 347-3279
cityofnovi.org

INTERPRETATION NOTICE
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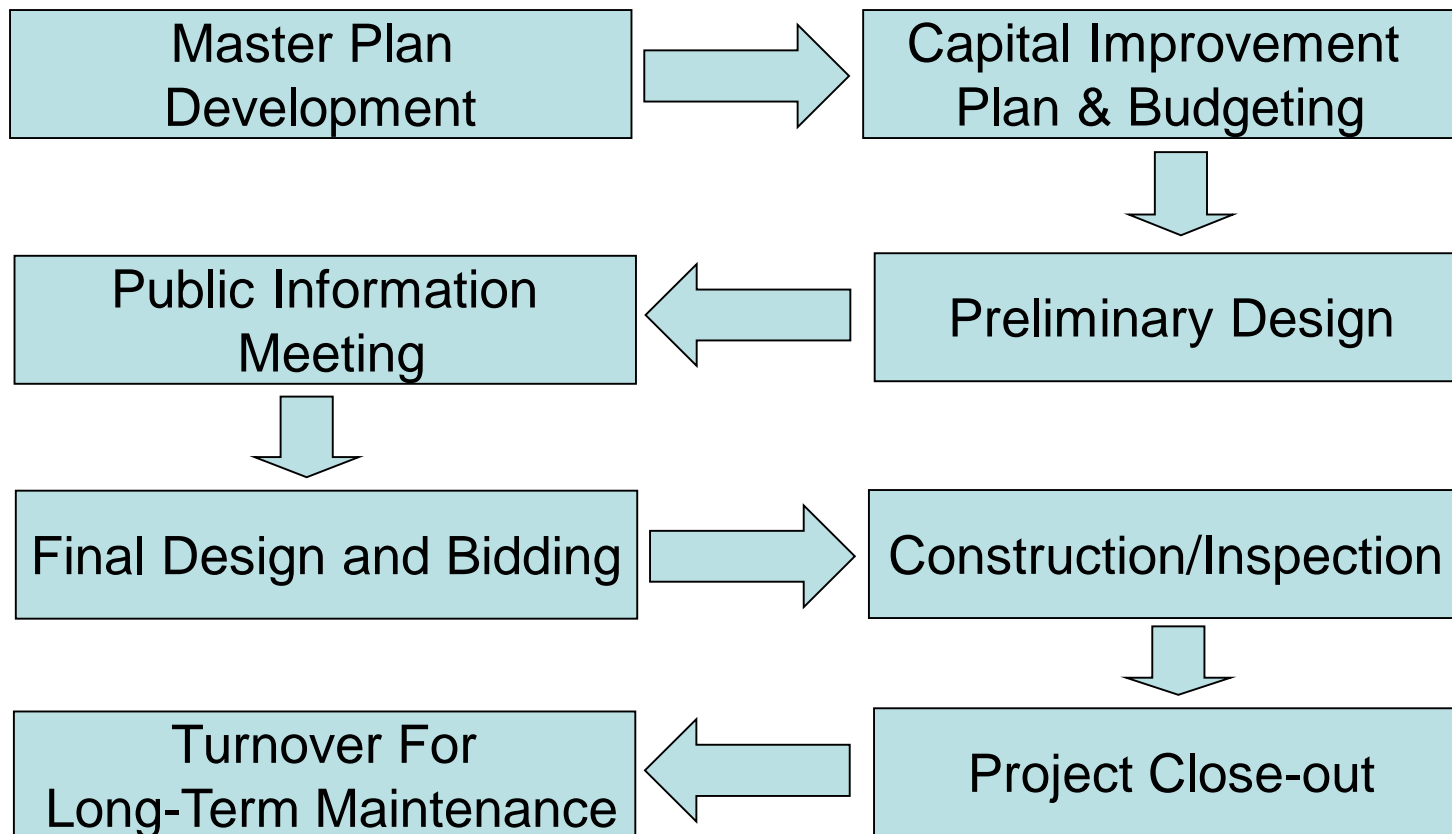
Map Author: Jon Gerlach
GIS Technician
Map Publication Date: January 10, 2018



Infrastructure Master Planning

- Infrastructure master plans are important tools in the development of the Capital Improvement Program (CIP).
- The Engineering Division completed the following master plans that are used as the basis for the Year 6 CIP:
 - Pavement Condition Survey - PASER(2011, 2012, 2013, 2014, 2015, 2017 & 2018)
 - Chip Seal Evaluation and Plan (2013, 2014, 2015, 2016, 2017 & 2019)
 - Master Thoroughfare Plan (2016)
- **Scoping Studies**
 - 10 Mile Scoping Study (2019)
 - Beck Road Scoping Study (2018)
 - Novi and Grand River Corridor Update (2018)
 - Asset Management Plan (2012)
 - TAMC Road Report 2020-2024 (2019-2020)

Lifecycle of a Capital Project



Design & Construction of Capital Projects

- **Design tasks include:**

- Develop detailed project scope, schedule and budget
- Contracting with the consultant to complete design of project
- Easement acquisition (handled primarily by in-house staff)
- Managing the scope, schedule and budget throughout the design phase of project
- Communication with the public about the project using mailings and public meetings to deliver information and receive feedback
- Reviewing bids and recommending award for construction contracts

- **Construction tasks include:**

- Managing the scope, schedule and budget during construction
- Communication with residents and businesses during construction
- Oversight of consultant's inspection team and the contractor
- Final inspection and close out of the project

Pavement Condition Assessment: PASER

- **PASER = Pavement Surface Evaluation and Rating system**
 - Visually inspecting pavement's surface condition
 - Assigning a quantitative rating on a scale of 1 to 10
 - 1 = failed condition
 - 10 = excellent condition.
- **PASER helps provide the basis for determining the level of future investment required to achieve acceptable pavement conditions throughout the City.**
- **Guidelines for rating the pavement surface using the PASER system have been developed by the State of Michigan's Transportation Asset Management Council (TAMC).**
- **Having an asset management program is now a requirement for ACT 51 dollars.**

PASER Ratings

Asphalt Streets

PASER Rating	Condition	Treatment
9 & 10	Excellent	No maintenance required
8	Very Good	Little or no maintenance
7	Good	Crack sealing and minor patching
5 & 6	Fair – Good	Preservative treatments (non-structural)
3 & 4	Poor – Fair	Structural improvement (overlay)
1 & 2	Failed	Reconstruction

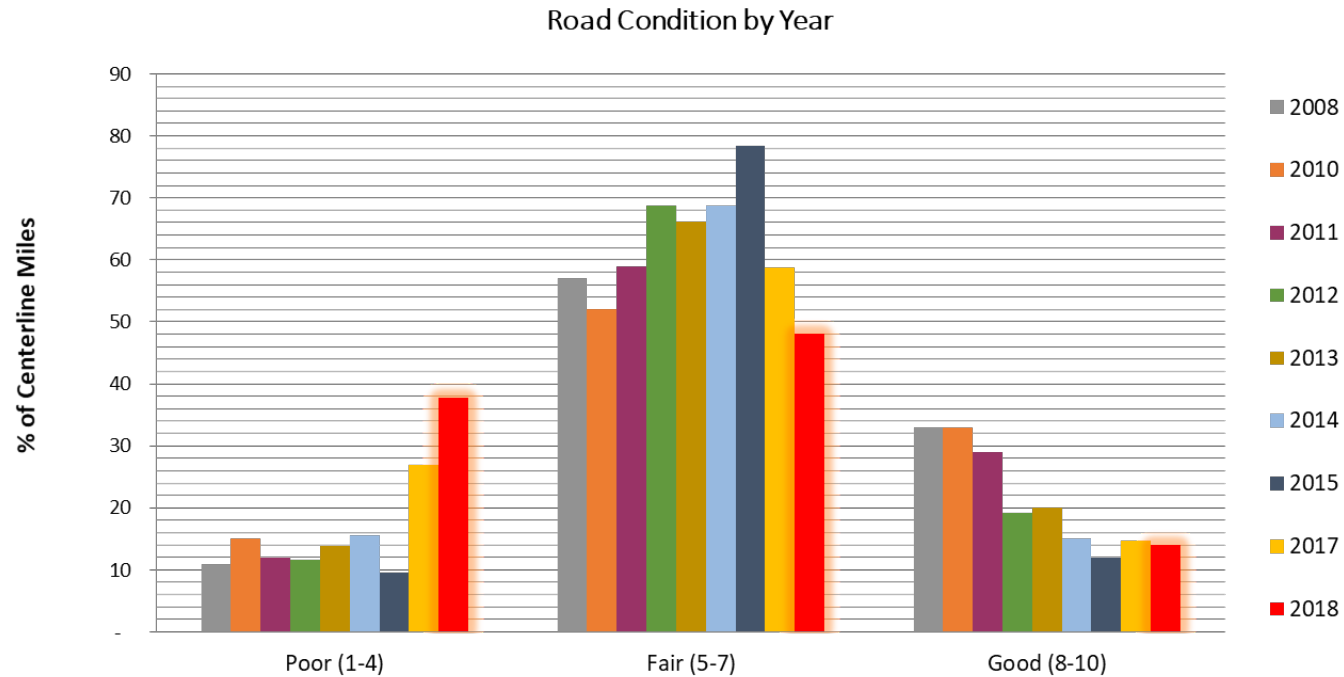
Concrete Streets

PASER Rating	Condition	Treatment
9 & 10	Excellent	No maintenance required
7 & 8	Very Good	Routine maintenance
5 & 6	Fair – Good	Surface repairs, sealing, partial-depth patching
3 & 4	Poor – Fair	Extensive slab or joint rehabilitation
1 & 2	Failed	Reconstruction

2019 PASER Roads by Percentage

Category	Rating					Total (lane miles)
	Excellent (9-10)	Very Good (8)	Good (6-7)	Fair (4-5)	Poor (1-3)	
Major	16	4	9	46	6	81
Local	16	24	94	138	37	309
Total Mileage	32	29	103	184	44	391
% of Road Network	8%	7%	26%	47%	11%	

PASER Average by Year



City of Novi Current PASER Ratings

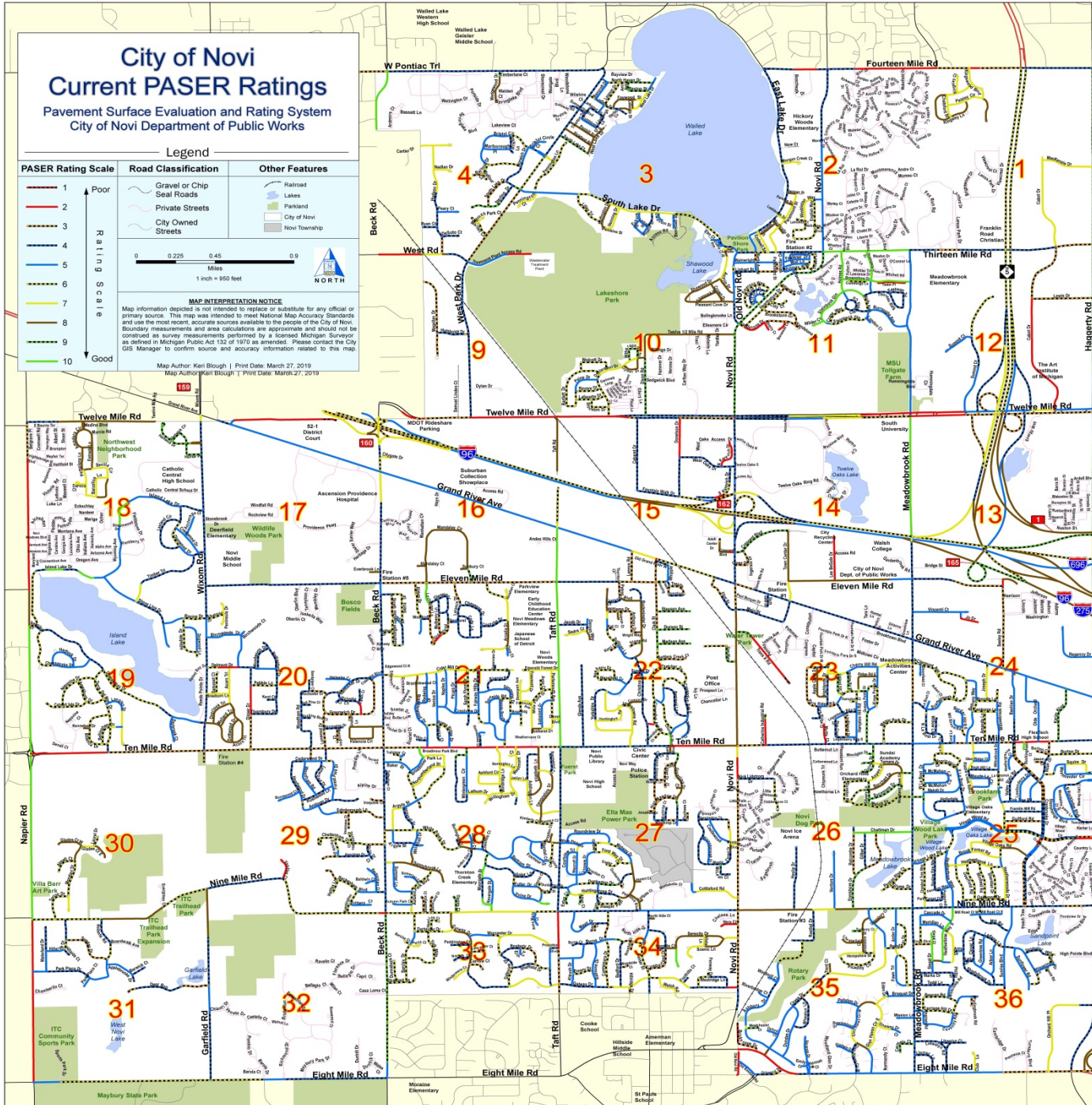
Pavement Surface Evaluation and Rating System
City of Novi Department of Public Works

Legend

PASER Rating Scale	Road Classification	Other Features
1 - Poor	Gravel or Chip Seal Roads	Railroad
2	Private Streets	Lakes
3	City Owned Streets	Parkland
4		City of Novi
5		Novi Township
6		
7		
8		
9		
10 - Good		

MAP INTERPRETATION NOTICE
 Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

Map Author: Ken Blough | Print Date: March 27, 2019
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General Pavement Considerations

- **Drainage Provisions**
 - Surface & subsurface drainage
- **Subgrade**
 - Support capacity for pavement & during construction
- **Traffic & Loading**
 - Traffic volumes, heavy vehicles
- **Coordination with utility improvements**

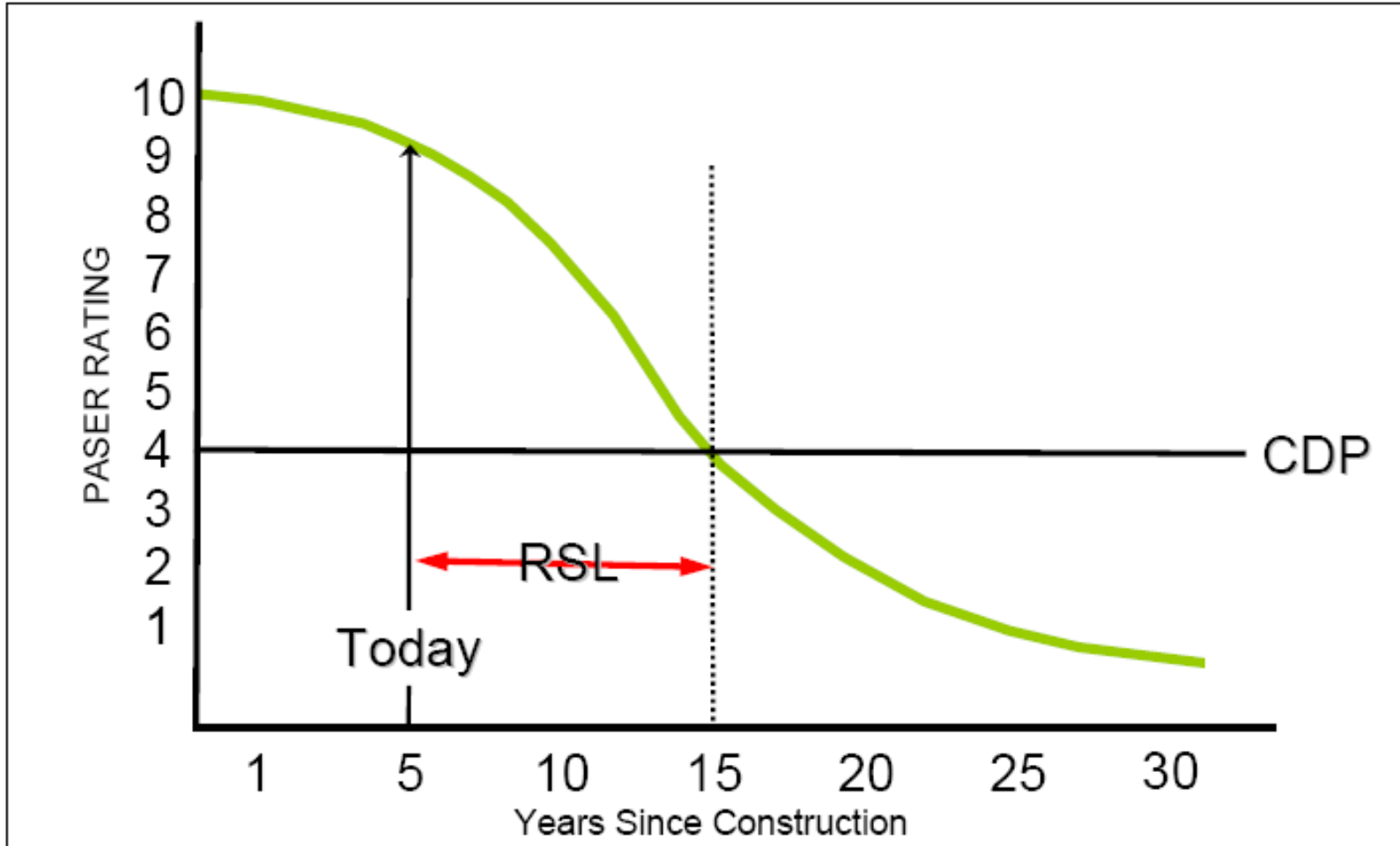
Asphalt Pavement

- “Flexible” pavement – loads distribute to base
- Typical design life 15-20 years
 - 30+ years of life with maintenance/rehab
- Lower initial construction cost vs. concrete
- More frequent maintenance required
- Shorter initial construction & less impactful maintenance durations
- Overall lifecycle cost considers service life and required maintenance

Concrete Pavement

- Rigid” pavement – higher loads & distribution
- Typically long service life - 25 to 35 years design
 - 70+ years of life with proper maintenance
- Higher initial construction cost vs. asphalt
- Less frequent maintenance, but repairs impactful
- Overall lifecycle cost considers pavement longevity and required maintenance

Pavement Deterioration Curve



Typical Pavement Section

Asphalt

Gravel Base

Sand Sub- Base

Native Soil (sub grade)

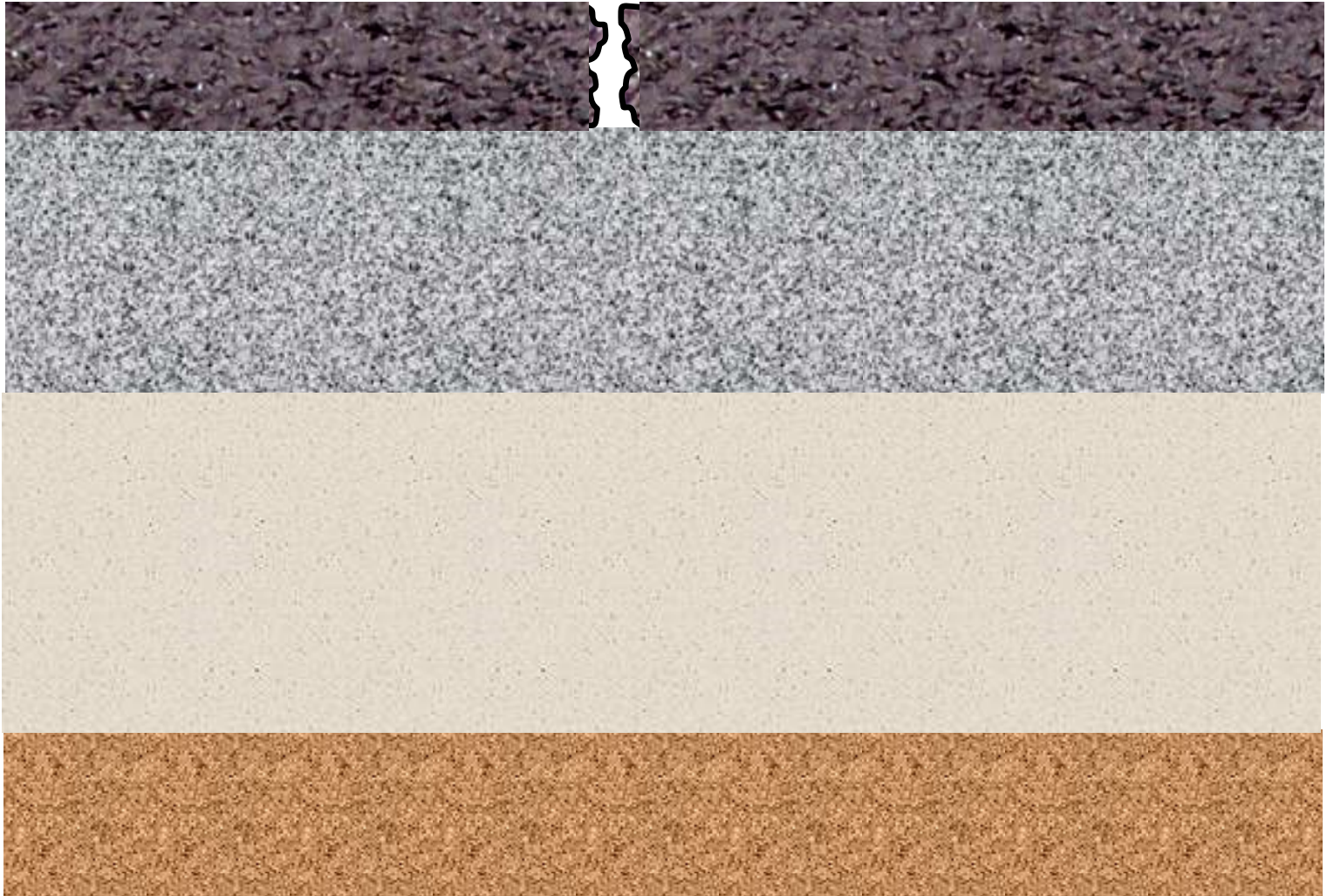
Environment



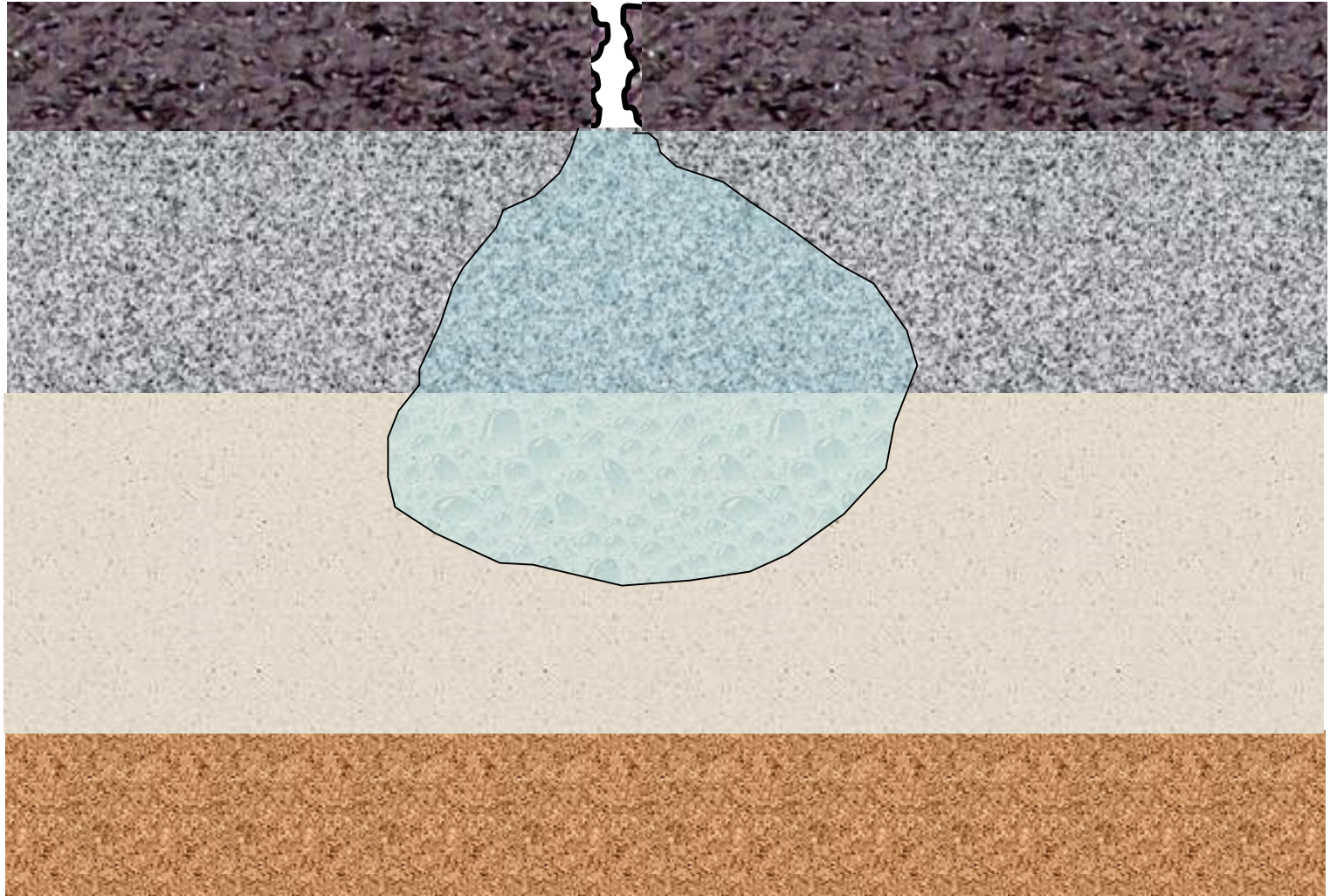
Environment



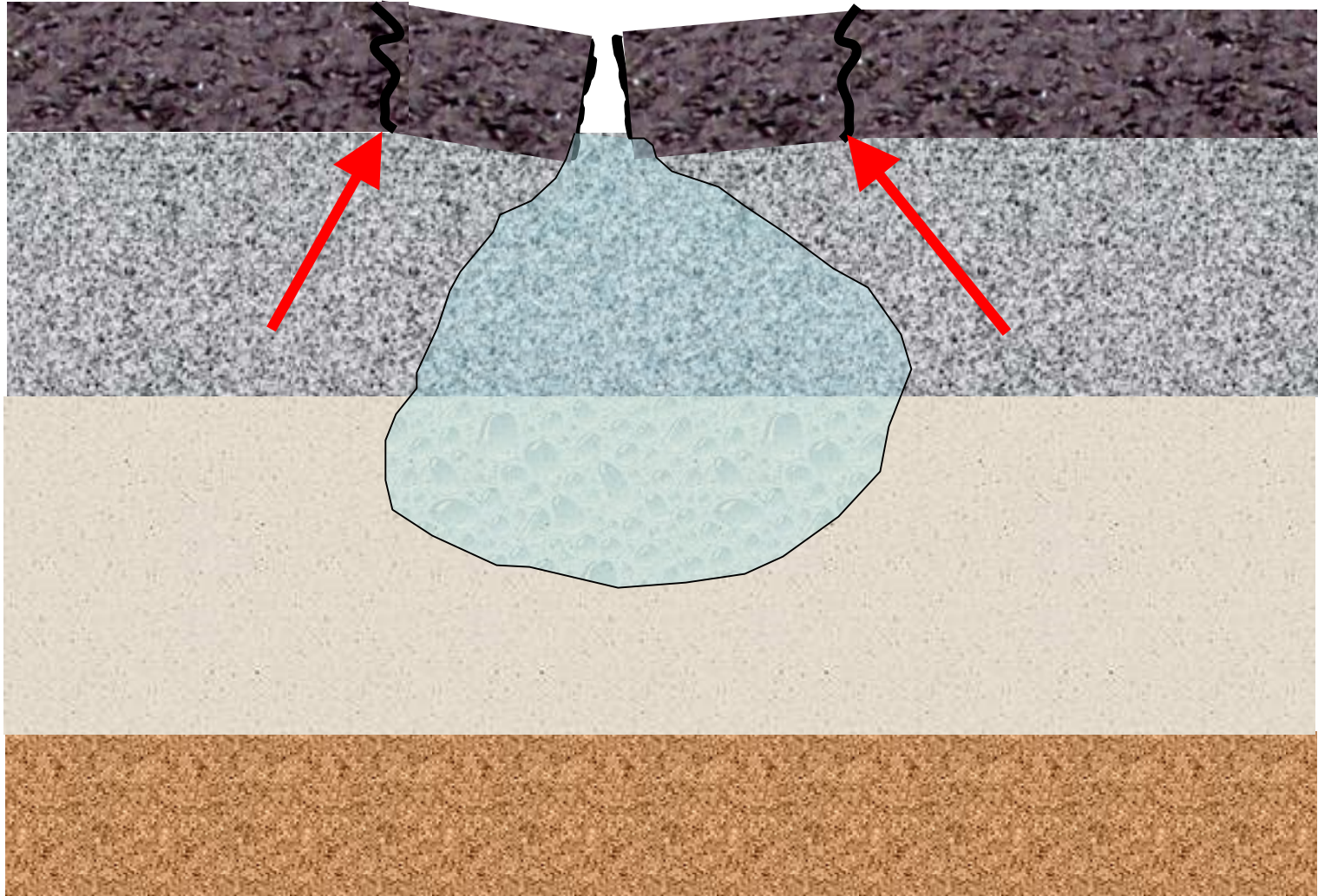
Pavement Crack



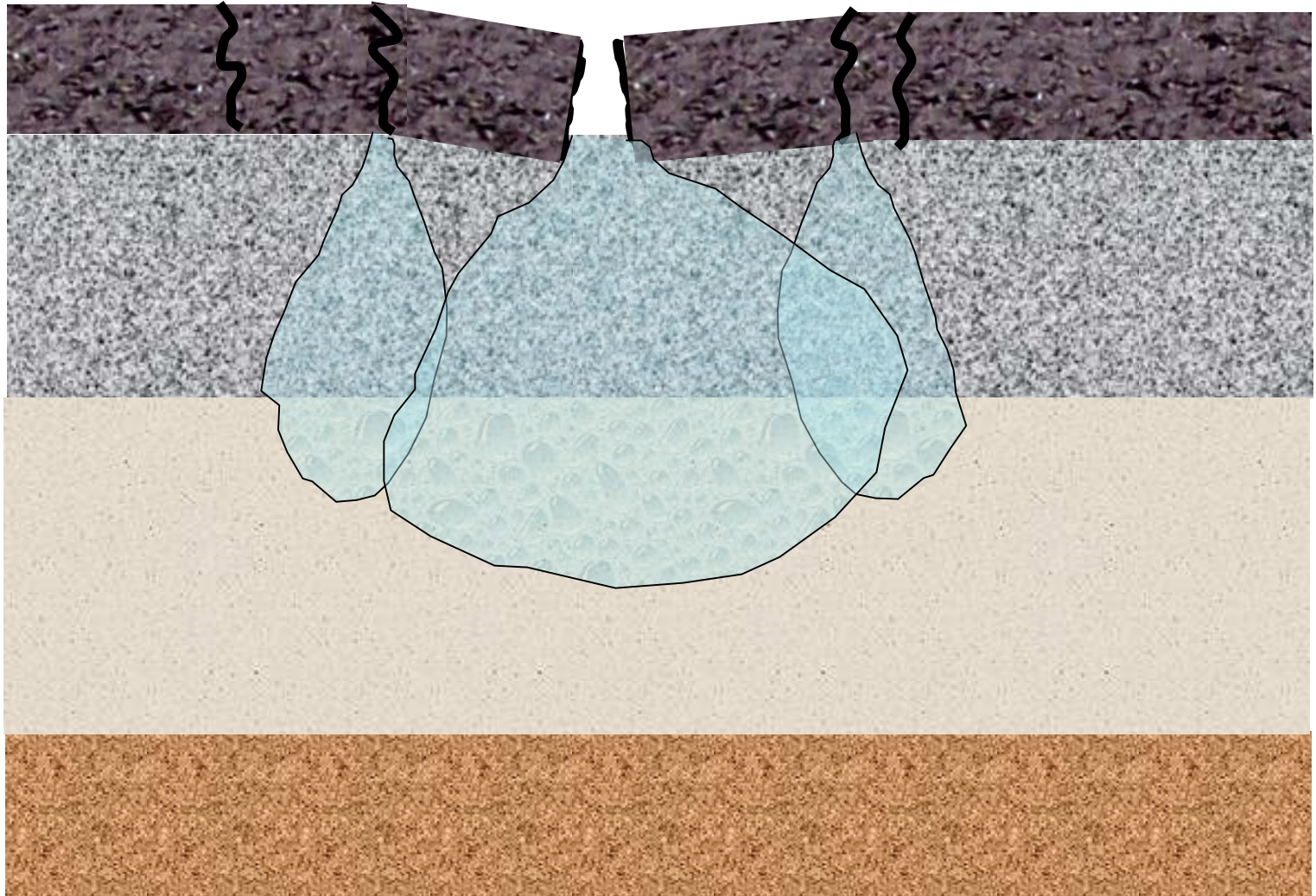
Water Intrusion



Base Weakening



Distress Propagation





Pavement Costs

Pavement Type	Treatment	Cost per Lane Mile
Asphalt	Crack Sealing/Minor Patching	\$1000 - \$7500
Asphalt	Preservation Treatment (non-structural)	\$150,000 - \$350,000
Asphalt	Structural Improvement (Overlay)	\$350,000 - \$500,000
Asphalt	Reconstruction	\$800,000 - \$1,250,000
Concrete	Joint & Crack Sealing	\$1000 - \$5000
Concrete	Surface Repairs, Minor Patching	\$175,000 - \$250,000
Concrete	Major Slab or Joint Replacement	\$350,000 - \$500,000
Concrete	Reconstruction	\$1,000,000 - \$1,500,000

Questions???

- Introduction to Meeting 2 – 2019 Road Report