City of Madison Department of Transportation & City Engineering
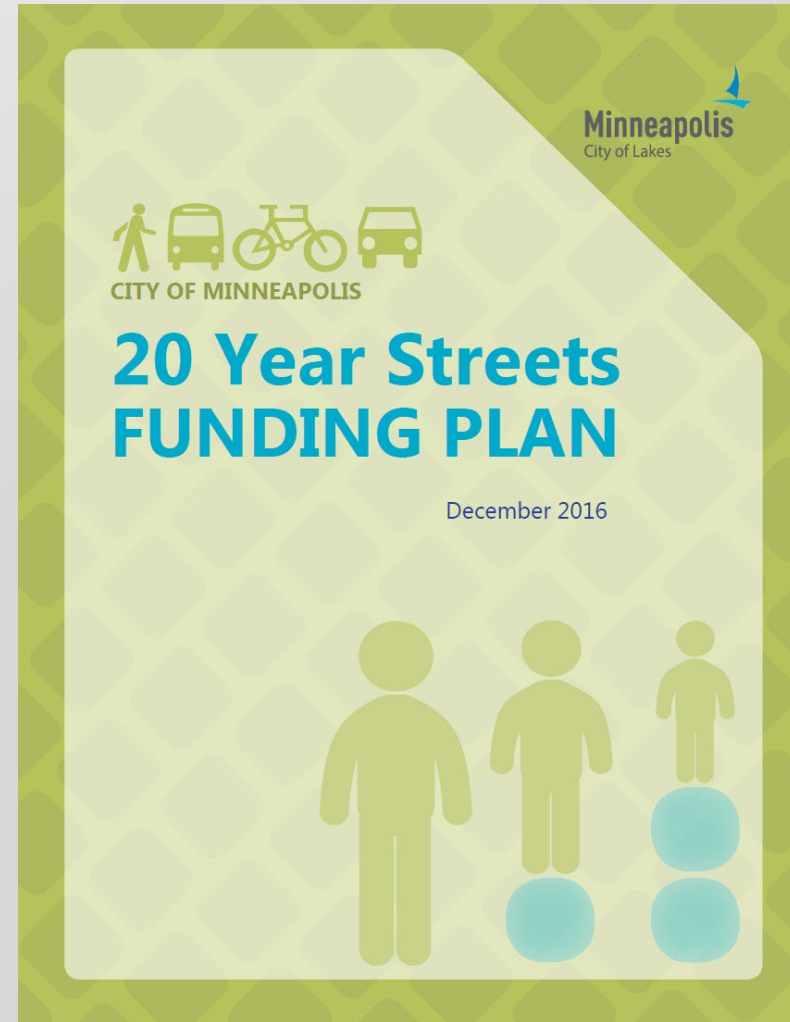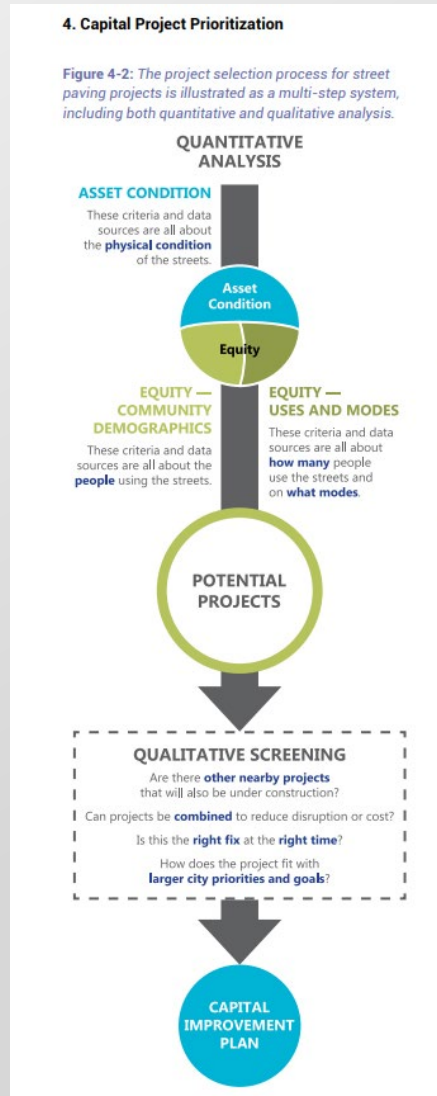
Transportation Improvement Program Screening and Project Development Tool

Philip L. Gritzmacher, Jr., AICP
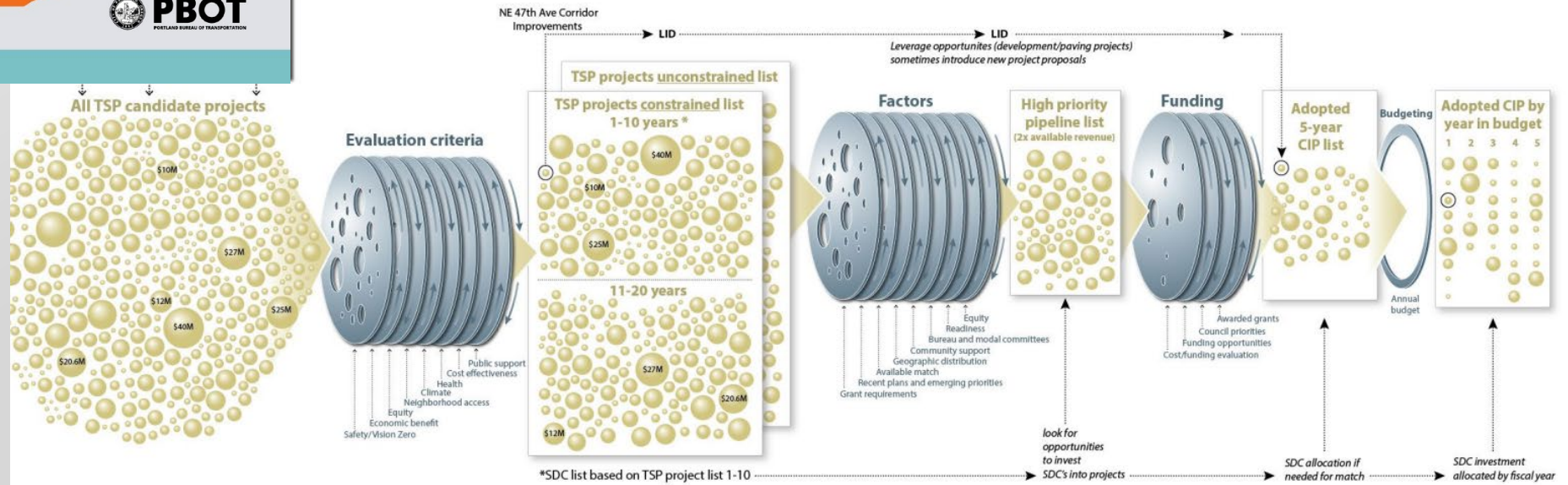
Early Desire to Document TIP Selection Process

Minneapolis

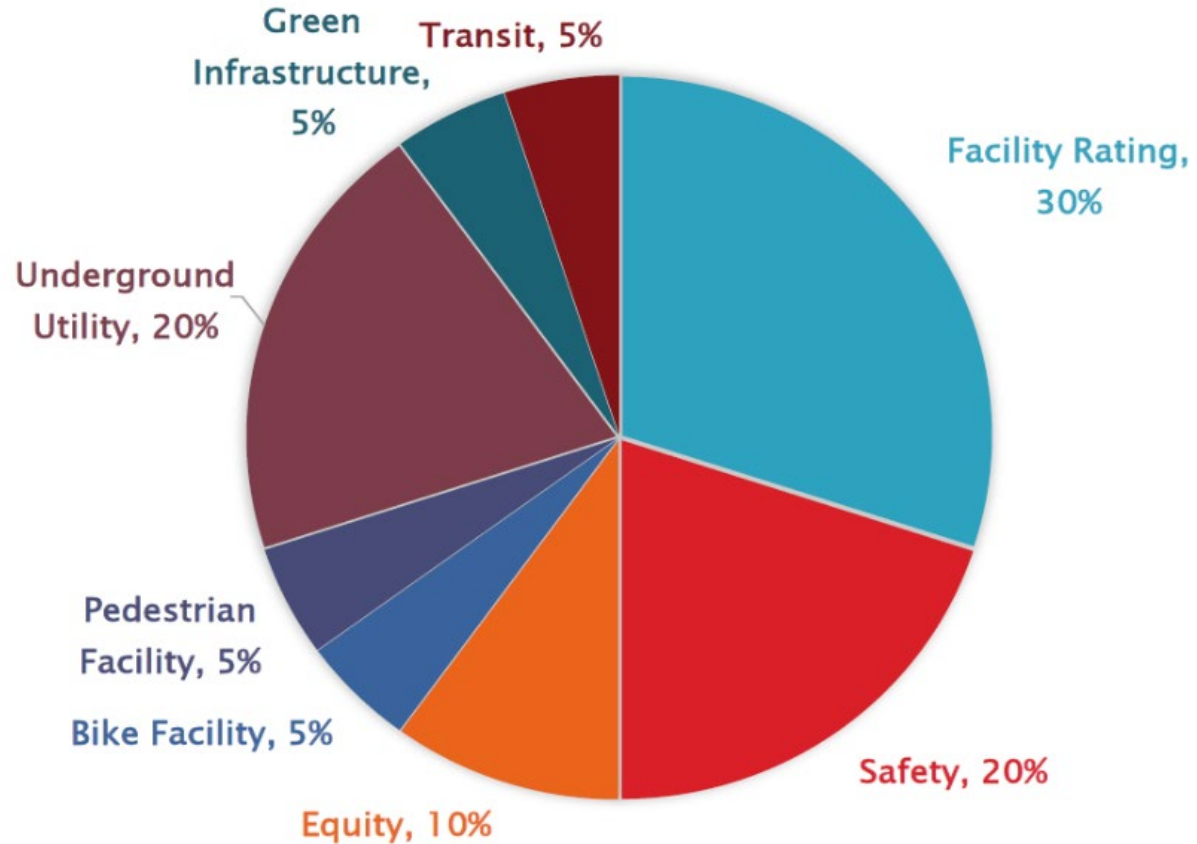# Early Desire to Document TIP Selection Process

City Engineering Proposal 2020 & 2021

- Similar to one used by Minneapolis's 20-year Capital Improvement Program.
- Created multiple factors to evaluate capital projects

Previous Proposal's Challenges

- **Weighting categories allowed streets without a reconstruction need to score higher than streets with a reconstruction need.**

  - Defeats key objective of reconstruction program.

- **Difficult to incorporate Utility reconstruction needs and utility funding ability.**

- **Difficult to score some categories – such as "green infrastructure"**

- **Doesn't consider development opportunities**

- **Submittal of Capital Projects to Finance is due two months earlier in 2022**

TPPB Approved Proposal

2023 TIP
- Provide scores for projects already in TIP with a few modifications
  - Pavement Cond
  - Equity
  - Safety
  - Utilities
- Submit to Finance 4/22

Refining criteria….

2024-2028 TIP
- Pilot a multi-stage process
- Provide interim results to policymakers in spring/summer 2022
- Use for TIP submittal in 2023

TIP

RECONSTRUCTS Pavements & Utilities with Critical Needs

Eligible Segment Screening
- Pavements ≤ 4
- Water med. or high risk
- Sanitary ≤ 3
- Proposed Storm
- Platted Roads
- HIN segments
- City-maintained Roads

GIS

Assign Raw Score
- Pavement (0-30)
- Sanitary (0-10)
- Water (0-10)
- Storm (0-10)
- Ped (0-8)
- Bike (0-6)
- Transit (0-6)
- Unique Factors (0-20)

GIS

Weight Segments
- + 5% raw score if on HIN
- + 15% raw score if in equity area

GIS

Scope & Budget
- Assemble into logical groupings
- Eliminated non-reconstructs
- Prioritize Groupings
- Recommend for budget

Discretion

SAFE STREETS

NON-RECONSTRUCTS Pavements without critical needs

Identify Needs
- Candidate projects identified through community input, NRTs, staff observations

Evaluate Projects
- Evaluate candidate projects using safety, equity, ability to fill gaps, cost as metrics
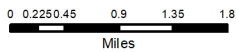- Prioritize

TC Approval
- Review evaluation
- Modify prioritization as appropriate
- Approve

Eligible Segment Screening
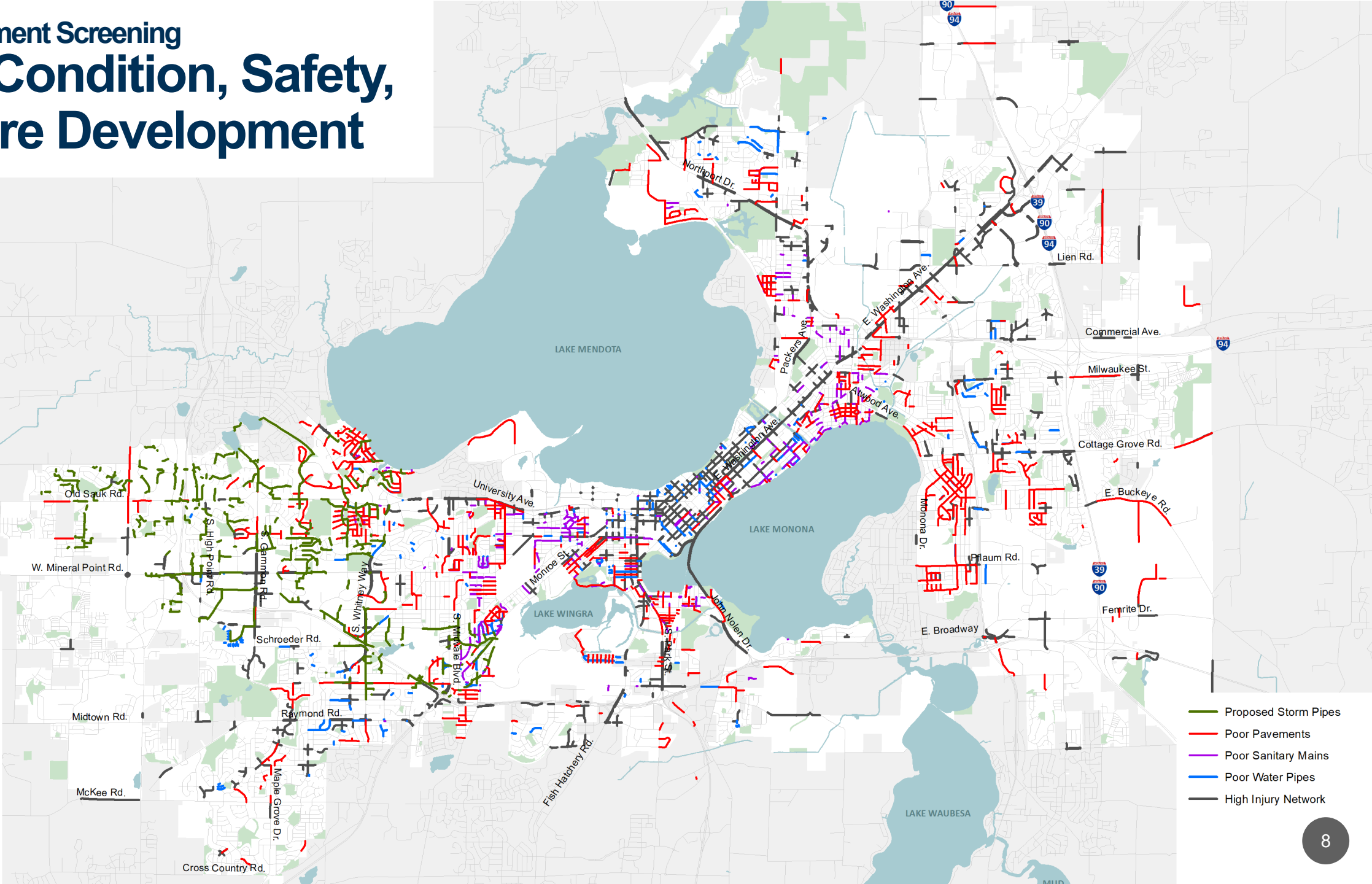**Asset Condition, Safety, & Future Development**

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.225 0.45   0.9   1.35   1.8
Miles

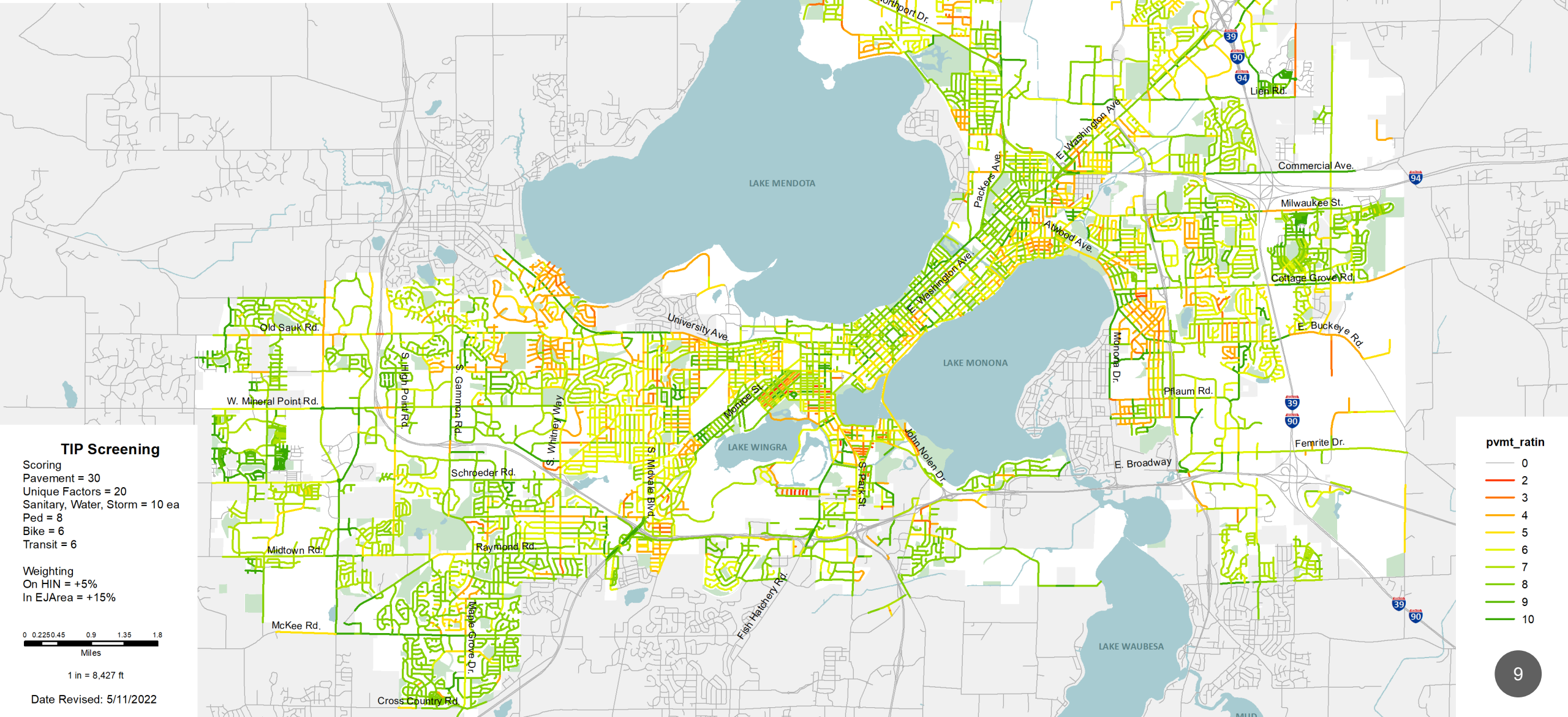1 in = 8,427 ft

Date Revised: 5/11/2022

Legend:
— Proposed Storm Pipes
— Poor Pavements
— Poor Sanitary Mains
— Poor Water Pipes
— High Injury Network

8

Assign Raw Score
Pavement Condition
Up to 30 Points

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022
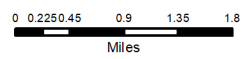
pvmt_ratin
0
2
3
4
5
6
7
8
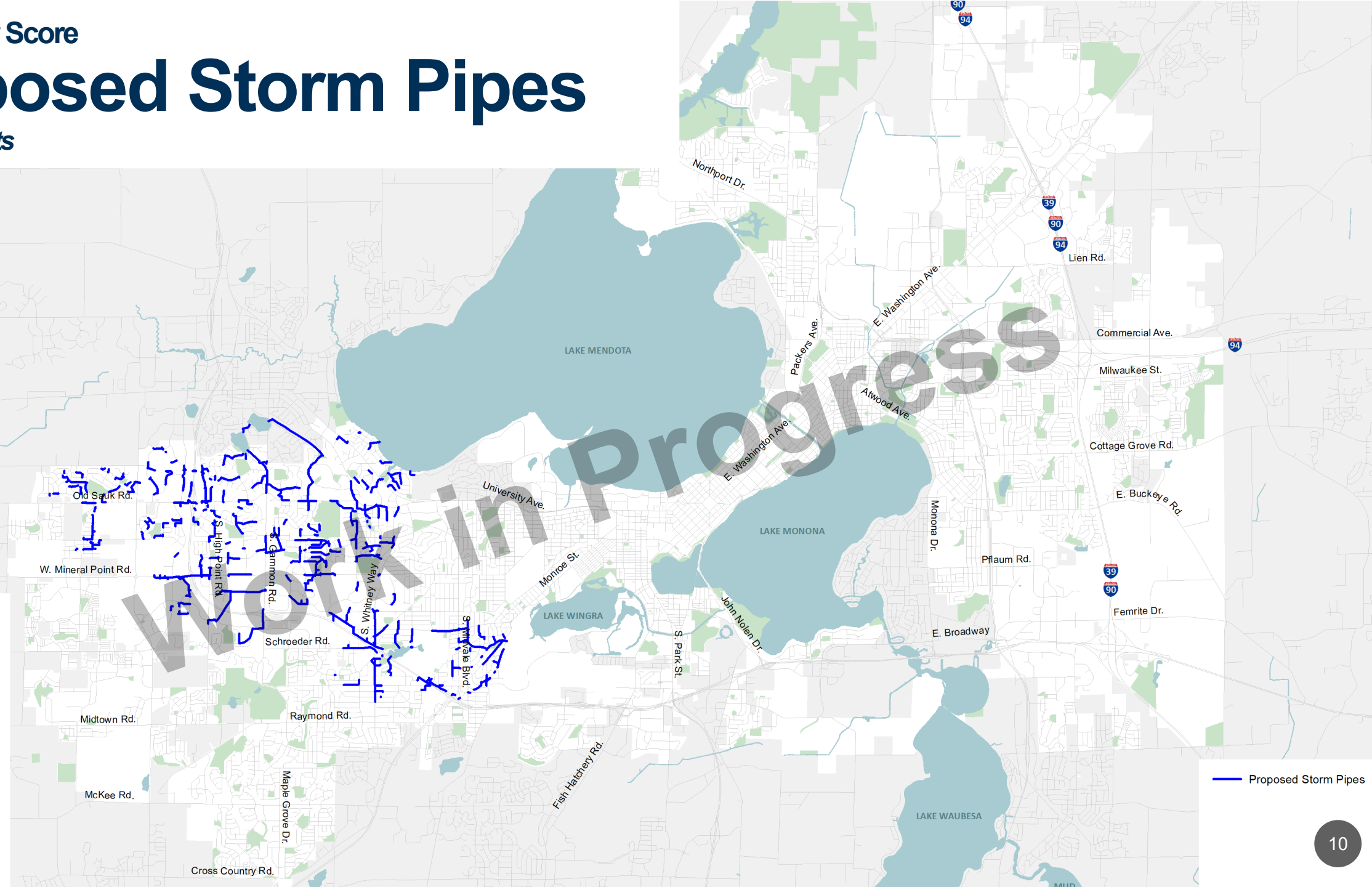9
10

9

Assign Raw Score
Proposed Storm Pipes
Up to 10 Points

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

— Proposed Storm Pipes
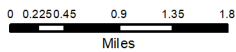
10

Assign Raw Score
Sanitary Main Ratings
Up to 10 Points

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

Sanitary Main Ratings

— 1 (poor)
— 2
— 3
— 4
— 5 (good)

11

Assign Raw Score
Water Pipe Core Risk
Up to 10 Points

TIP Screening

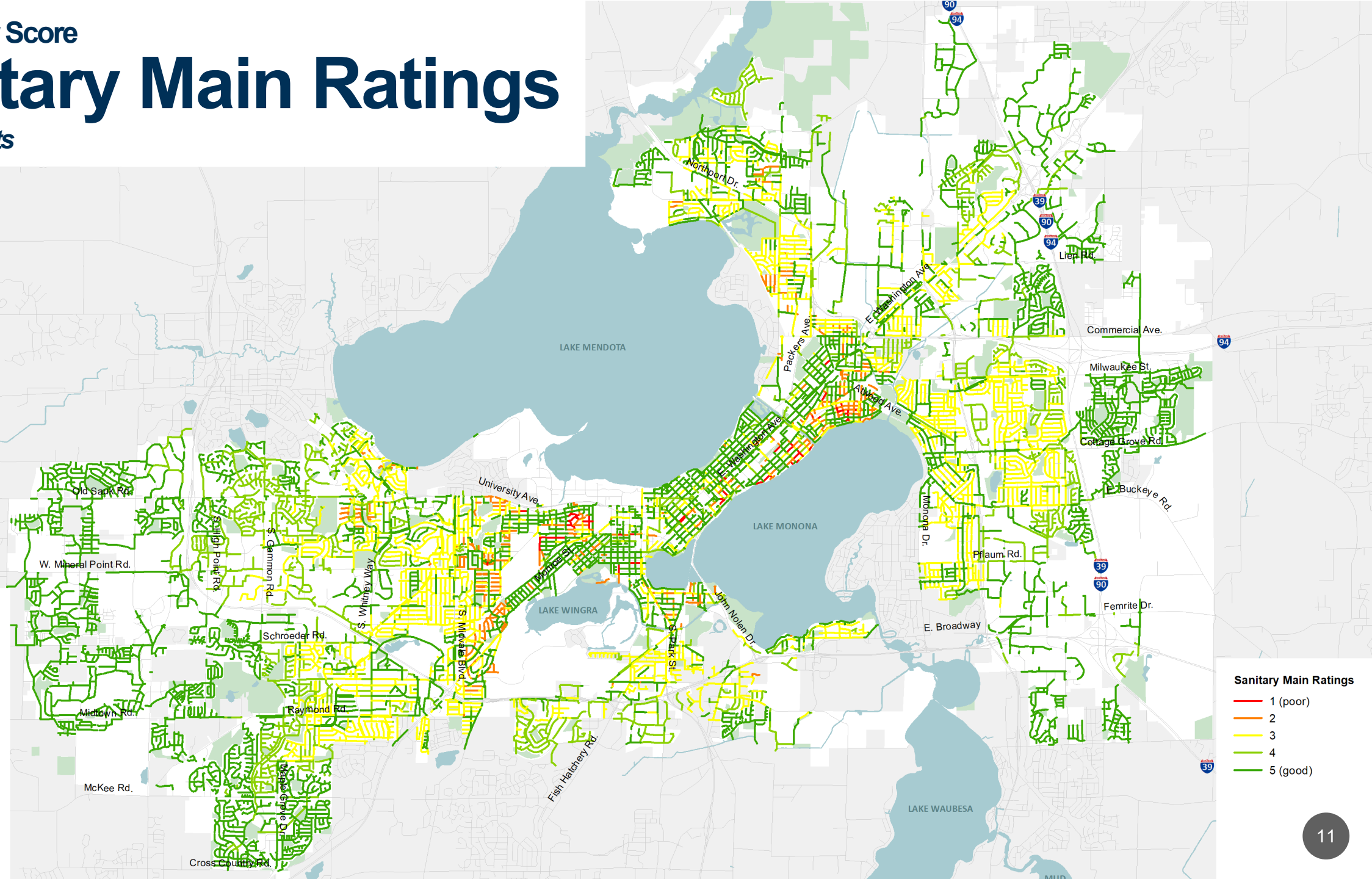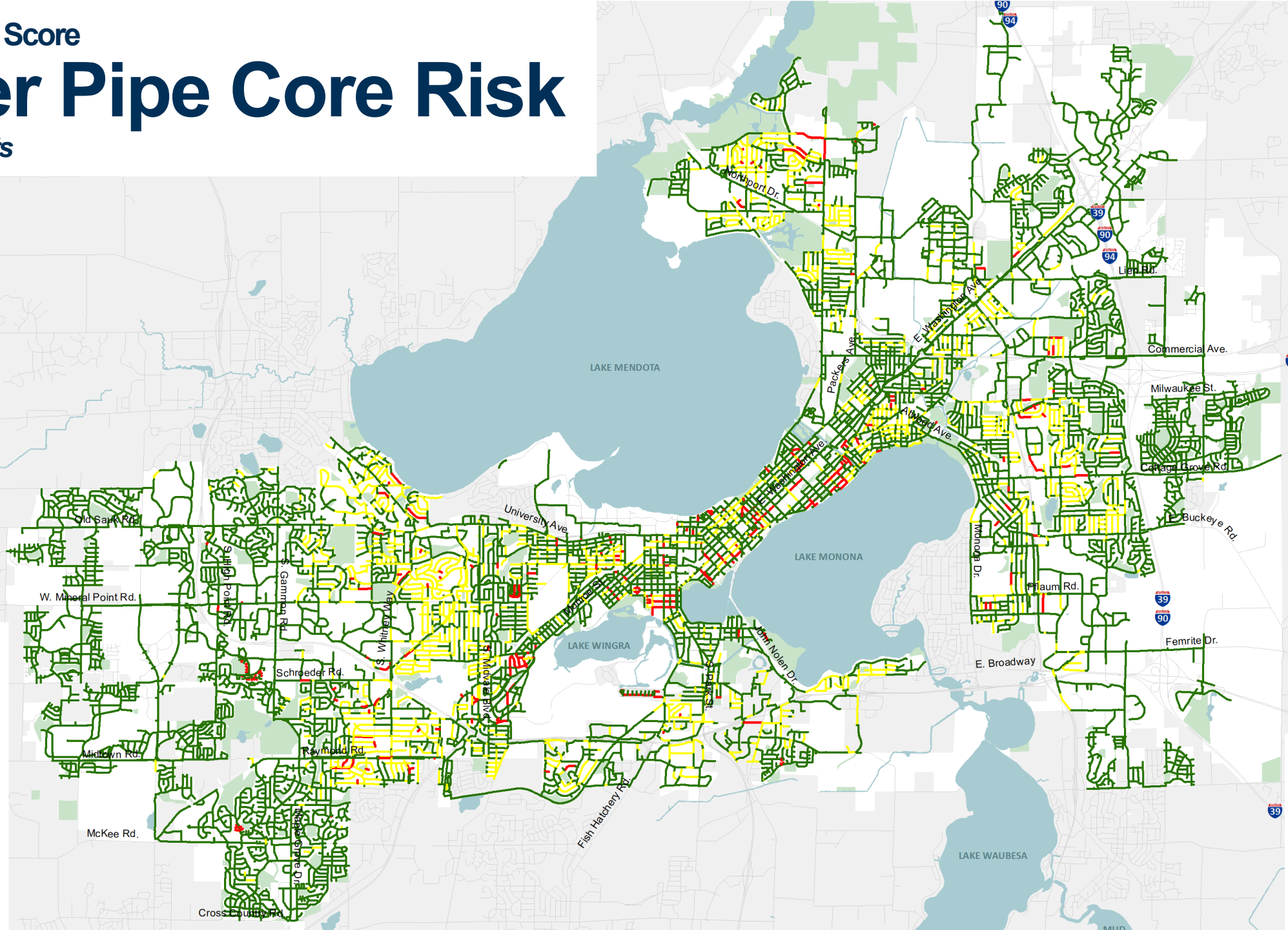Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.2250.45   0.9   1.35   1.8
                    Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

Water Pipe "Core Risk"
— Low
— Medium
— High
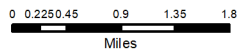
12

Assign Raw Score

Pedestrian Needs

Up to 8 Points

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJ Area = +15%

0 0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

Sidewalk Status
— Missing Both Sides
— Planned One Side
— Missing One Side
— Sidewalk Both Sides

13

Assign Raw Score
Bicycle Network
Up to 6 Points

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
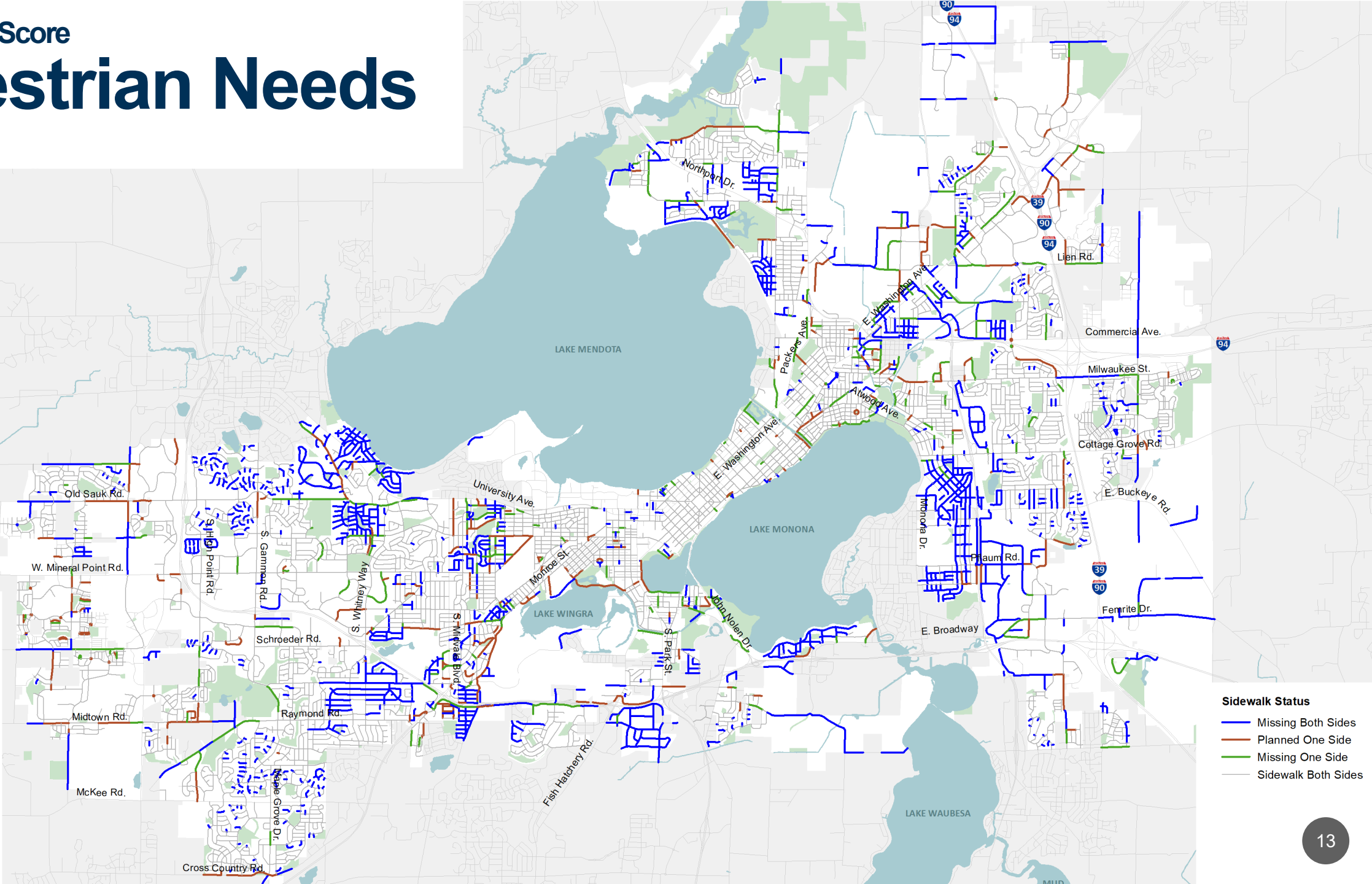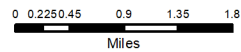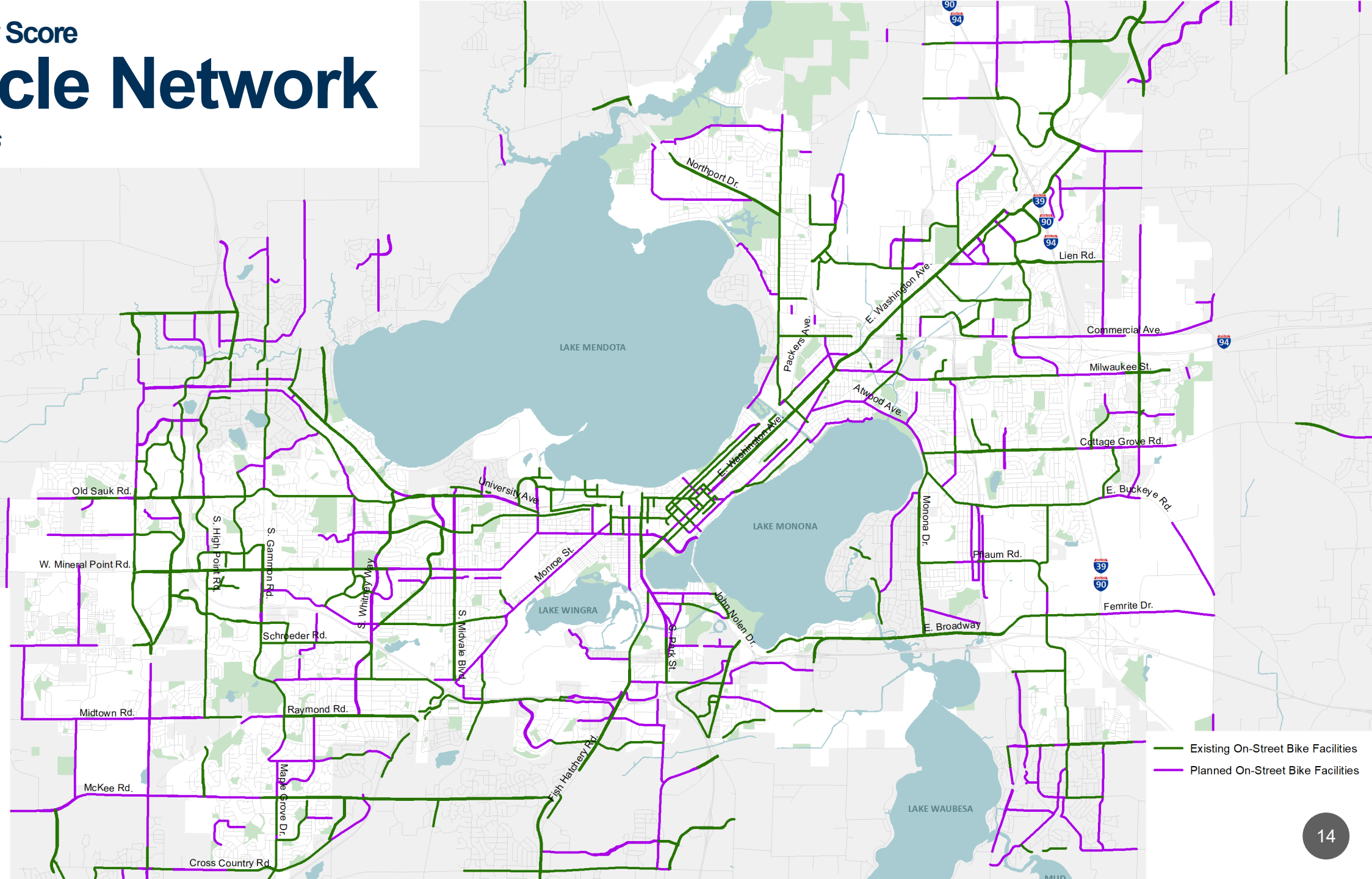Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0   0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

Existing On-Street Bike Facilities
Planned On-Street Bike Facilities
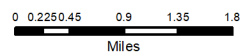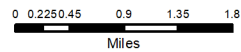
14

Assign Raw Score
Transit Network
Up to 6 Points

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.2250.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

—— Draft Redesign Network (Feb 2022)

15

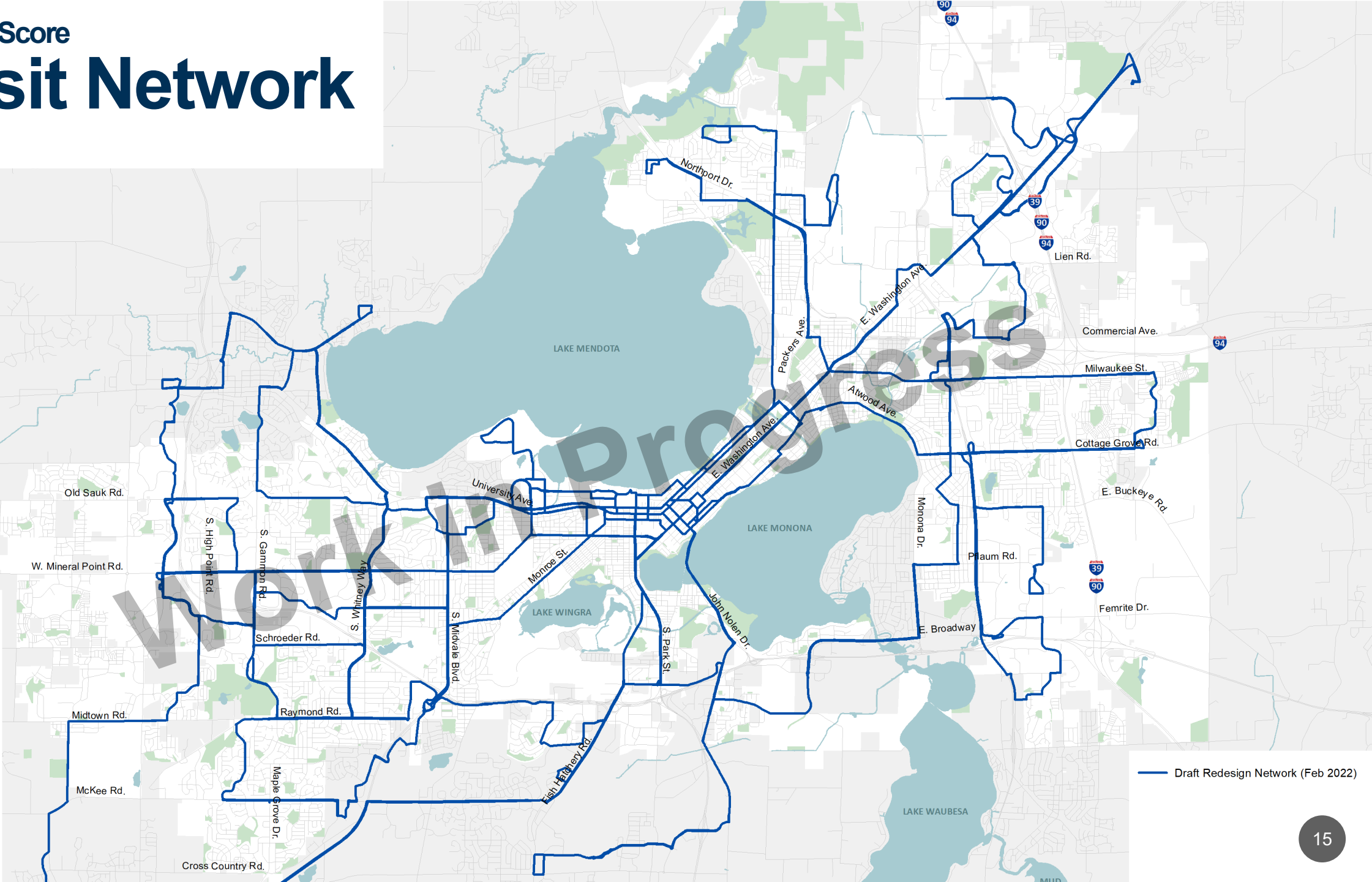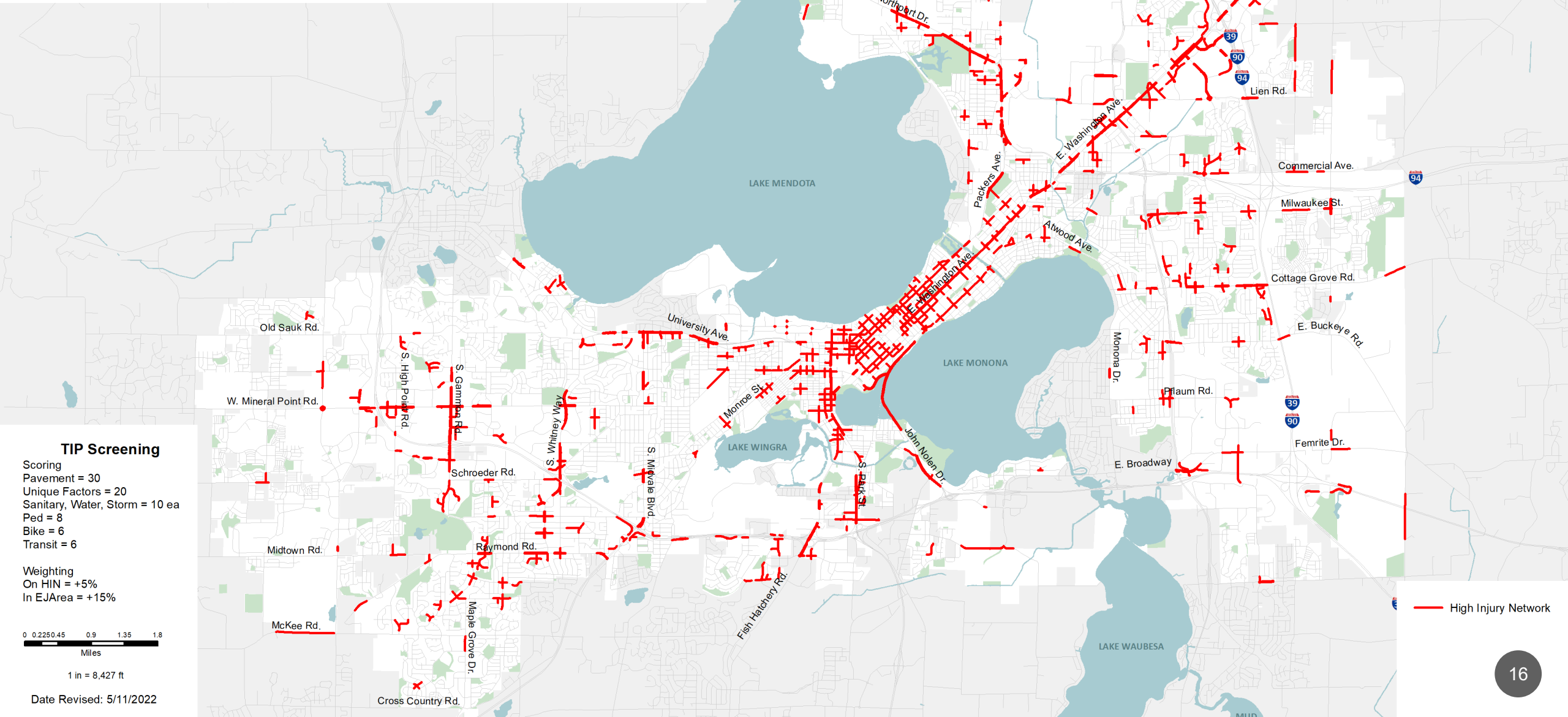# High Injury Network

Raw Score x 5%

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJ Area = +15%

0   0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

—— High Injury Network

16

Lake labels: LAKE MENDOTA, LAKE MONONA, LAKE WINGRA, LAKE WAUBESA, MUD

Street labels: Northport Dr., E. Washington Ave., Lien Rd., Commercial Ave., Milwaukee St., Cottage Grove Rd., E. Buckeye Rd., Packers Ave., Atwood Ave., Monona Dr., Pflaum Rd., Femrite Dr., E. Broadway, University Ave., Old Sauk Rd., S. High Point Rd., S. Gammon Rd., S. Whitney Way, S. Midvale Blvd., Monroe St., John Nolen Dr., S. Park St., W. Mineral Point Rd., Schroeder Rd., Raymond Rd., Maple Grove Dr., Fish Hatchery Rd., Midtown Rd., McKee Rd., Cross Country Rd.

Weight Segments
Equity Areas
Raw Score x 15%

LAKE MENDOTA

LAKE MONONA

LAKE WINGRA

LAKE WAUBESA

Northport Dr.

E. Washington Ave.

Packers Ave.

Atwood Ave.

Commercial Ave.

Milwaukee St.

Cottage Grove Rd.

E. Buckeye Rd.

Monona Dr.

Pflaum Rd.

University Ave.

Monroe St.

John Nolen Dr.

S. Park St.

E. Broadway

Femrite Dr.

Old Sauk Rd.

W. Mineral Point Rd.

S. High Point Rd.

S. Gammon Rd.

S. Whitney Way

S. Midvale Blvd.

Schroeder Rd.

Midtown Rd.

Raymond Rd.

McKee Rd.

Maple Grove Dr.

Fish Hatchery Rd.
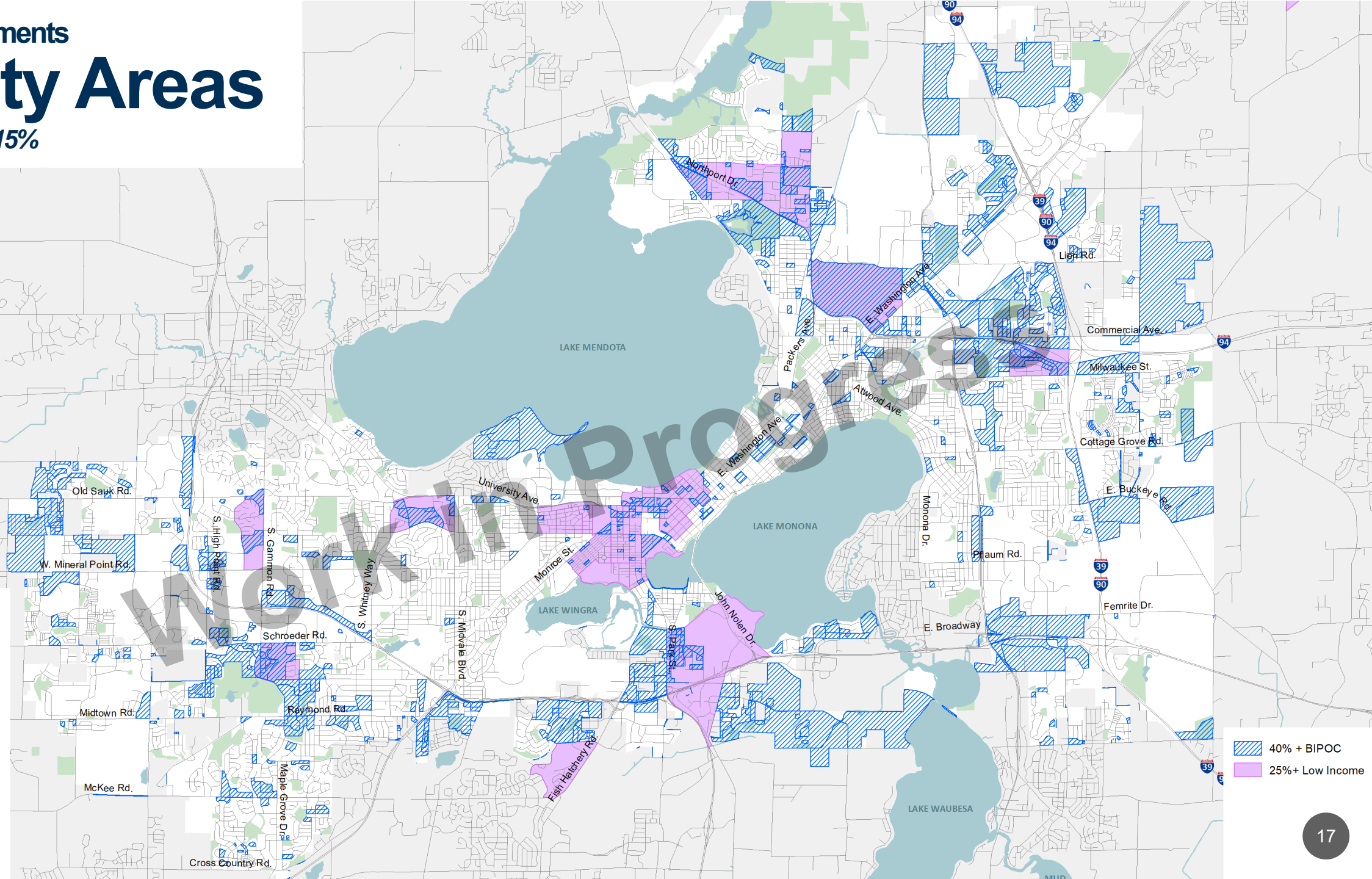
Cross Country Rd.

Light Rd.

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.225 0.45   0.9   1.35   1.8
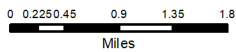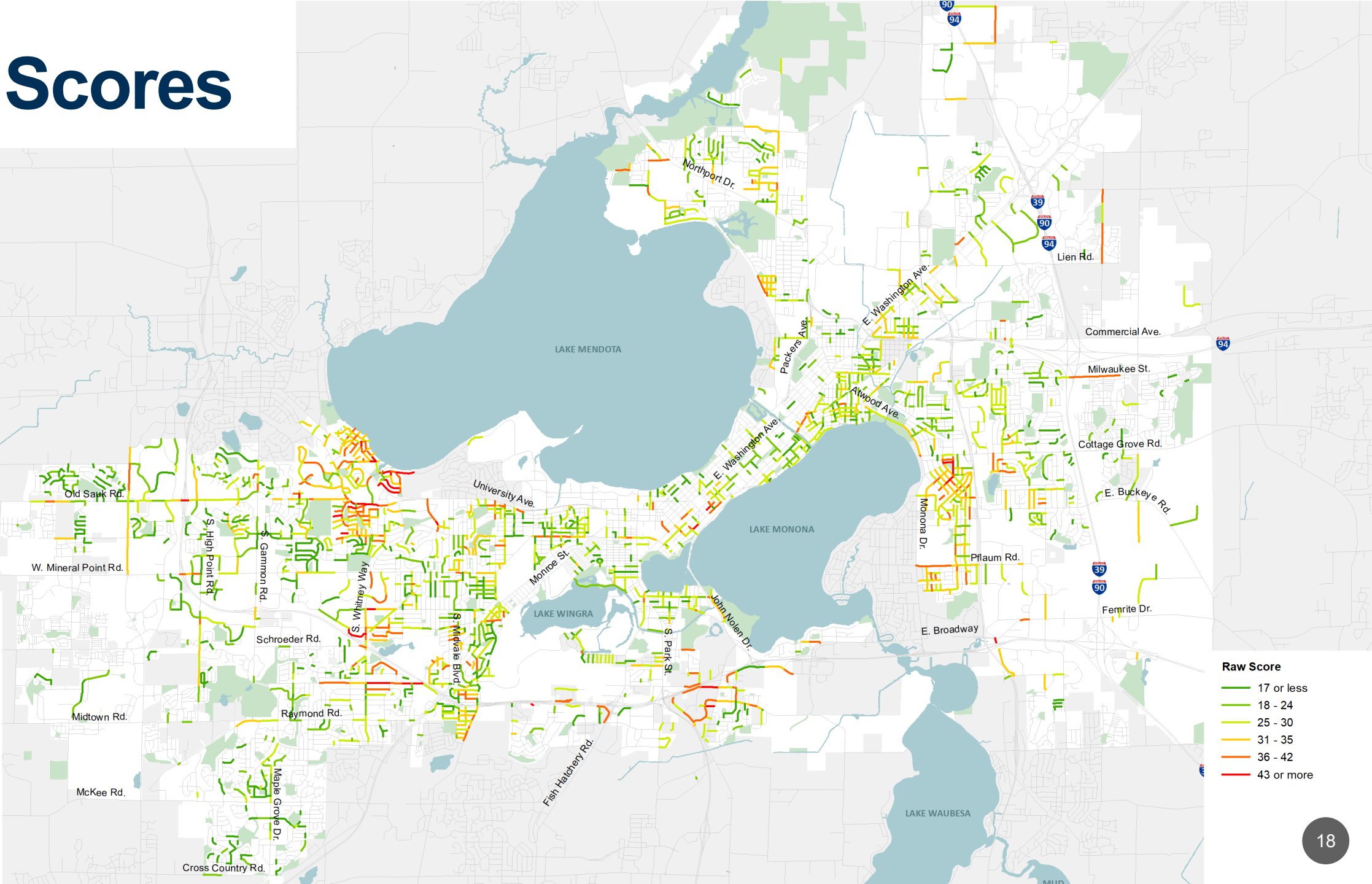Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

40% + BIPOC

25%+ Low Income

17

Raw Scores

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.2250.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft
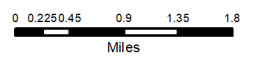
Date Revised: 5/11/2022

Raw Score

— 17 or less
— 18 - 24
— 25 - 30
— 31 - 35
— 36 - 42
— 43 or more

18

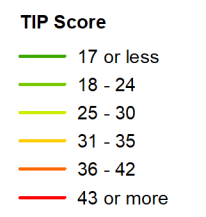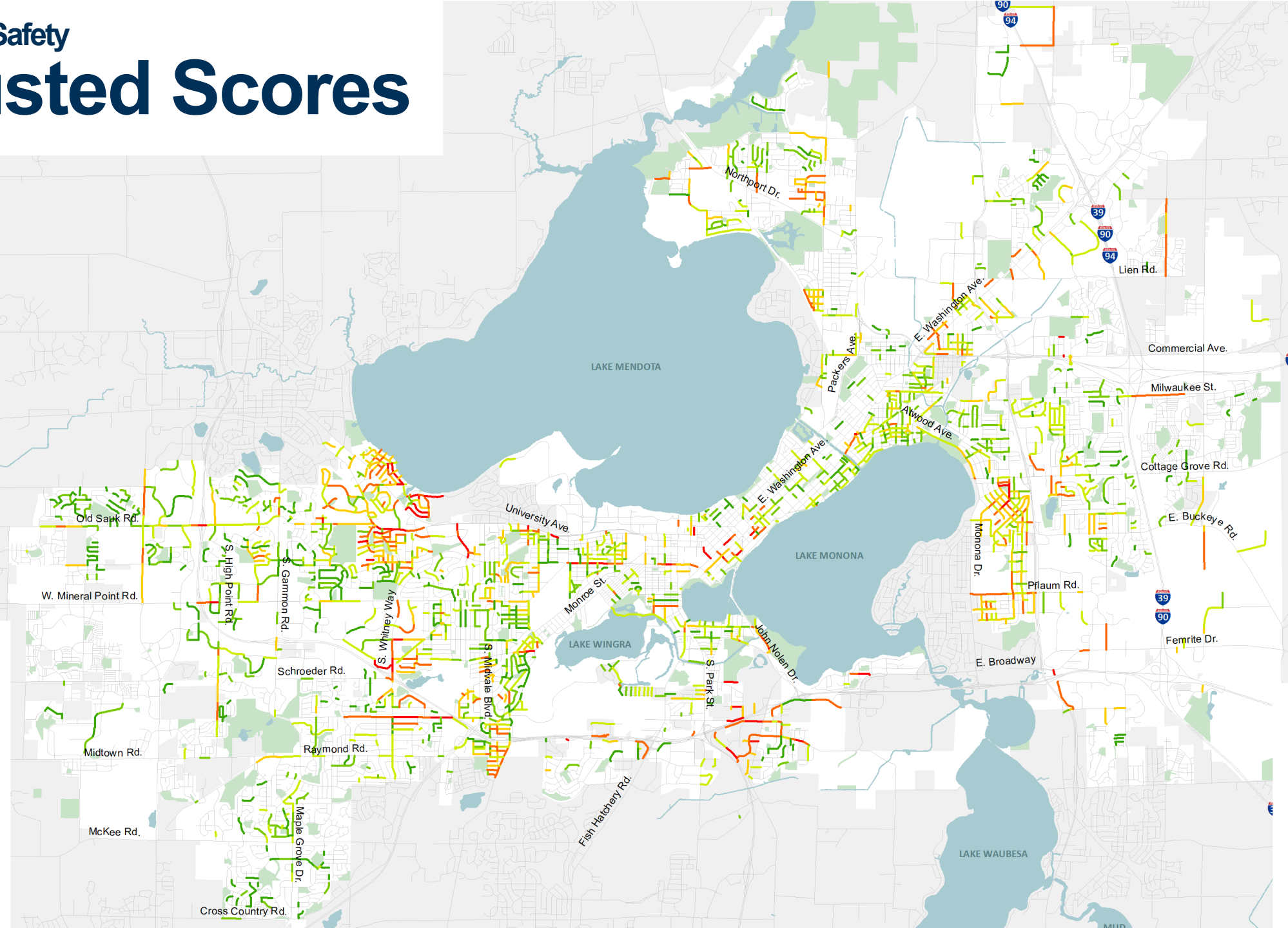# Equity and Safety
Adjusted Scores

TIP Screening

Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJArea = +15%

0 0.2250.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

TIP Score
- 17 or less
- 18 - 24
- 25 - 30
- 31 - 35
- 36 - 42
- 43 or more

19
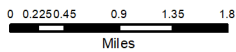
2023 & 2024
Programmed Projects

TIP Screening

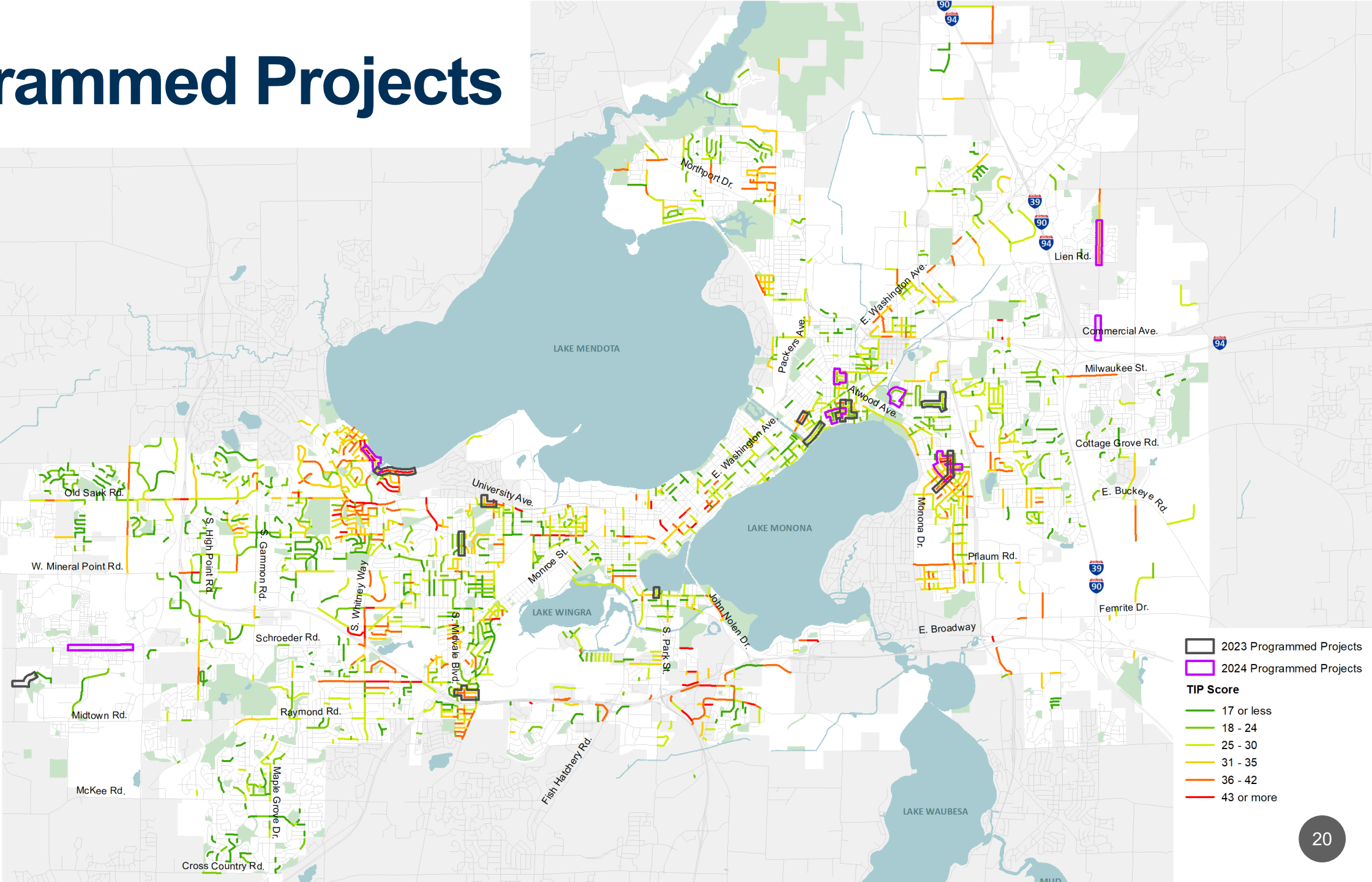Scoring
Pavement = 30
Unique Factors = 20
Sanitary, Water, Storm = 10 ea
Ped = 8
Bike = 6
Transit = 6

Weighting
On HIN = +5%
In EJ Area = +15%

0 0.225 0.45   0.9   1.35   1.8
Miles

1 in = 8,427 ft

Date Revised: 5/11/2022

2023 Programmed Projects
2024 Programmed Projects

TIP Score
17 or less
18 – 24
25 – 30
31 – 35
36 – 42
43 or more

20

Questions, Comments, or Suggestions?