Traverse City Downtown Development Authority Study Session

Friday, March 3, 2023

12:00 pm

Training Room, Governmental Center
400 Boardman Avenue
Traverse City, Michigan 49684

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If you are planning to attend and you have a disability requiring any special assistance at the meeting and/or if you have any concerns, please immediately notify the ADA Coordinator.

The City of Traverse City and Downtown Development Authority are committed to a dialog that is constructive, respectful and civil. We ask that all individuals interacting verbally or in writing with board members honor these values.

Downtown Development Authority:
c/o Jean Derenzy, CEO
(231) 922-2050
Web: www.dda.downtowntc.com
303 East State Street, Suite C
Traverse City, MI 49684

Welcome to the Traverse City Downtown Development Authority study session

Agenda

Page

1. CALL TO ORDER

2. ROLL CALL

3. TOPICS OF DISCUSSION

A. West End Parking Structure Considerations — 5 - 20

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Parking Map One. 2023-2027 (Aggregate) - PDF
Parking Map Two. 2023 - PDF
Parking Map Three. 2024 - PDF
Parking Map Four. 2025 - PDF
Parking Map Five. 2026 - PDF
Parking Map Six. 2027 - PDF
Estimated Walk Time Maps - PDF

B. Lower Boardman/Ottaway Downtown Riverwalk Considerations — 21 - 26

Lower Boardman/Ottaway Downtown Riverwalk Memo (Jean Derenzy) - PDF
Lower Boardman Potential Riverwalk Segments Working Costs - PDF
Civic Engagement Activity Summary Related to the Lower Boardman Riverwalk Project - PDF

C. Mobility Action Plan Update — 27 - 52

Mobility Plan Update Memo (Jean Derenzy) - PDF
Draft Mobility Maps - PDF

4. PUBLIC COMMENT

5. ADJOURNMENT

CITY COMMISSION

GOALS & OBJECTIVES

2022-2023

HOUSING & HOMELESSNESS

Increase opportunities for more diverse housing through public and private options.

ACCESS & MOBILITY

Invest in multi-modal mobility strategies and existing and future infrastructure so that individuals of all ages, abilities and income have a network of complete, barrier free, safe, year round access to our community's amenities and basic needs.

CONNECTING PEOPLE WITH EACH OTHER AND NATURE

Invest in facilities and amenities in order to create vibrant City spaces that connect all people to nature and to each other.

ECONOMIC DEVELOPMENT

The City will foster economic development by adopting a growth mentality and by conserving and maintaining natural resources. It will work with partners to invest in and maintain amenities that support a wide variety of industries, build the workforce, and attract well-paying jobs with the region's future in mind.

WATER SYSTEMS

Proactively and consistently maintain, conserve, and manage water and water systems to reduce harm to the systems themselves as well as public health and safety.

CLIMATE CHANGE

Address climate within all of our City priorities, goals, policies, and actions.

Downtown Development Authority
303 E. State Street
Traverse City, MI 49684
jean@downtowntc.com
231-922-2050

Memorandum

To: DDA Board of Directors

From: Jean Derenzy, DDA CEO

Date: February 23, 2023

Subject: Study Session

West End Parking Structure and Downtown Parking

In December, the City Commission approved a land purchase & property swap with Socks Construction that provides a footprint for the west-end parking structure on the west end of downtown. This approval marks the culmination of efforts to aggregate land for a west-end parking structure that began in 2015. As a reminder, a west-end parking structure was first identified in 1997, and is listed in the TIF 97 Financing Plan. More recently, a west-end parking structure was identified as a capital project priority in the Moving Downtown Forward Plan.

As we have discussed in previous meetings, a west-end parking structure allows the DDA and City to: provide parking in an emerging part of downtown (and within a five-minute walk of a third of downtown); transition public surface parking lots throughout downtown into better and more valuable uses; create a more walkable and appealing pedestrian environment throughout downtown; and eliminate onerous costs for small local independent businesses. As a reminder, in 1973, the city adopted an ordinance to eliminate parking requirements for the downtown for many of the same reasons listed above.

The timing of construction for a west-end parking structure will have implications for the pace at which public surface parking lots are repurposed (including other capital projects such as the Lower Boardman Riverwalk) as well as the availability of parking for downtown visitors, including current permit holders. It will be important that we continuously provide parking access to downtown businesses throughout this transition.

We have created a series of maps to illustrate the potential transition of surface parking lots over time as it relates to the proposed west-end parking structure. The first map illustrates the potential transition of downtown surface parking lots between 2023 and 2026 (as an aggregate). The next four maps illustrate the incremental transition of downtown surface parking lots between 2023 and 2026. The last two maps illustrate the

estimated “walktime” (and coverage for downtown) as it relates to the two existing parking structures and the proposed west-end parking structure.

As you will see, there are a number of developments that are either planned or under construction throughout downtown over the next four years. Most of these new developments will include residential units on the top floors and commercial/retail space on the ground floor (and some parking, primarily for residential use). However, additional parking will be needed to support new (and existing) downtown employees and shoppers at the new retail spaces.

I look forward to discussing the timing of the potential transition of parking downtown over time - including the next steps toward implementation of the west end parking structure (i.e., design and engineering) - as it relates to our goals, objectives and priorities. Based on our discussion, I will bring formal action back to you at your March 17th meeting. Any request for design and engineering would then be presented to the City Commission for their consideration.

Map One. 2023 - 2027

Existing Downtown Surface/Deck Parking Spaces

Lot X:	56	Lot P:	52
Lot V:	103	Lot K:	22
Lot E:	57	Lot N:	51
Lot T:	141	Lot J:	38
Lot B:	129	Lot I:	5
Lot C:	58	Lot Q:	18
Lot D:	48	Lot W.	10
Lot A:	84	Lot L:	30
Lot R:	11	Lot CG:	18
Lot G:	55	Lot RB:	30
Lot O:	25	Lot M:	117

Hardy Garage: 537
Old T. Garage: 521
Total: 2,216
* Lots labeled in orange above are considered "parkland" and likely not to change

Planned Infill Development & Lost Surface Parking Spaces
Lot B -30 Partial (2023)
Lot V -103 (2023)
Lot O -25 (2025)
Lot G -55 (2025)
Lot: A -84 (2026)
Total: -297

Dedicated Infill Development & Lost Surface Parking Spaces
Lot T -141
Lot X -56
Total: -197

Lose Lot P to Construct West End Parking Structure (2025- 2026) -52 spaces

Combined Total Lost Parking Spaces: 494

New West End Parking Structure (2027)
Parking Spaces: 625

Net Gain Parking Spaces: 79

Other Anticipated Infill Development
- A 309 W. Front (2023)
- B 232 E. State (2024)
- C 211 Grandview PKWY (2025)
- D Hall Street (2025)
- E 326 E. State (2025)
- F 124 W. Front (2026)

*Some Parking Provided On-site
* Several Developments Include Retail on First Floor

March 2023

Map Two. 2023

Existing Downtown Surface/Deck Parking Spaces

Lot X:	56	Lot P:	52
Lot M:	117	Lot K:	22
Lot E:	57	Lot N:	51
Lot T:	141	Lot J:	38
Lot B:	99	Lot I:	5
Lot C:	58	Lot Q:	18
Lot D:	48	Lot W.	10
Lot A:	84	Lot L:	30
Lot R:	11	Lot CG:	18
Lot G:	55	Lot RB:	30
Lot O:	25		

Hardy Garage: 537
Old T. Garage: 521
Total: 2,083
* Lots labeled in orange above are considered "parkland" and likely not to change

Planned Infill Development & Lost Surface Parking Spaces
A Lot B -30 Partial (2023)
B Lot V -103 (2023)
Total: -133

Anticipated Infill Development
A 309 W. Front (2023)
*Some Parking Provided On-site
* Retail on First Floor

March 2023

Map Three. 2024

Existing Downtown Surface/Deck Parking Spaces

Lot X:	56	Lot P:	52
Lot M:	117	Lot K:	22
Lot E:	57	Lot N:	51
Lot T:	141	Lot J:	38
Lot B:	99	Lot I:	5
Lot C:	58	Lot Q:	18
Lot D:	48	Lot W.	10
Lot A:	84	Lot L:	30
Lot R:	11	Lot CG:	18
Lot G:	55	Lot RB:	30
Lot O:	25		

Hardy Garage: 537
Old T. Garage: 521
Total: 2,083
* Lots labeled in orange above are considered "parkland" and likely not to change

Planned Infill Development & Lost Surface Parking Spaces
A Lot B -30 Partial (2023)
B Lot V -103 (2023)
Total: -133

Anticipated Infill Development
A 309 W. Front (2023)
B 232 East State Street (2024)
*Some Parking Provided On-site
* Retail on First Floor

March 2023

Map Four. 2025

Existing Downtown Surface/Deck Parking Spaces

Lot X:	56		
Lot M:	117	Lot K:	22
Lot E:	57	Lot N:	51
Lot T:	141	Lot J:	38
Lot B:	99	Lot I:	5
Lot C:	58	Lot Q:	18
Lot D:	48	Lot W.	10
Lot A:	84	Lot L:	30
Lot R:	11	Lot CG:	18

Lot RB: 30
Hardy Garage: 537
Old T. Garage: 521
Total: 1,951
* Lots labeled in orange above are considered "parkland" and likely not to change

Planned Infill Development & Lost Surface Parking Spaces
- A Lot B -30 Partial (2023)
- B Lot V -103 (2023)
- C Lot O -25 (2025)
- D Log G -55 (2025)

Total: -213

Lose Lot P to Construct West End Parking Structure (2025 – 2026) -52 Spaces

Combined Total Lost Parking Spaces: 265

Anticipated Infill Development
- A 309 W. Front (2023)
- B 232 East State Street (2024)
- C Hall Street (2025)
- D 211 Grandview PKWY (2025)
- E 326 E. State (2025)

*Some Parking Provided On-site
* Retail on First Floor

March 2023

Map Five. 2026

Existing Downtown Surface/Deck Parking Spaces

Lot X:	56		
Lot M:	117	Lot K:	22
Lot E:	57	Lot N:	51
Lot T:	141	Lot J:	38
Lot B:	99	Lot I:	5
Lot C:	58	Lot Q:	18
Lot D:	48	Lot W:	10
Lot L:	30	Loc CG:	18
Lot R:	11		
Lot RB:	30		

Hardy Garage: 537
Old T. Garage: 521
Total: 1,867
* Lots labeled in orange above are considered "parkland" and likely not to change

Planned Infill Development & Lost Surface Parking Spaces
- A Lot B -30 Partial (2023)
- B Lot V -103 (2023)
- C Lot O -25 (2025)
- D Log G -55 (2025)
- E Lot A -84 (2026)

Total: -297

Lose Lot P to Construct West End Parking Structure (2025-2026) -52 spaces

Total Lost Parking Spaces: 349

Anticipated Infill Development
- A 309 W. Front (2023)
- B 232 East State Street (2024)
- C Hall Street (2025)
- D 211 Grandview PKWY (2025)
- E 326 E. State (2025)
- F 124 W. Front (2026)

*Some Parking Provided On-site
* Retail on First Floor

March 2023

Map Six. 2027

Existing Downtown Surface/Deck Parking Spaces

Lot X:	56		
Lot M:	117	Lot K:	22
Lot E:	57	Lot N:	51
Lot T:	141	Lot J:	38
Lot B:	99	Lot I:	5
Lot C:	58	Lot Q:	18
Lot D:	48	Lot W:	10
Lot L:	30	Loc CG:	18
Lot R:	11		
Lot RB:	30		

Hardy Garage: 537
Old T. Garage: 521 West End Garage: 625
Total: 2,462
* Lots labeled in orange above are considered "parkland" and likely not to change

Planned Infill Development & Lost Surface Parking Spaces

- A Lot B -30 Partial (2023)
- B Lot V -103 (2023)
- C Lot O -25 (2025)
- D Log G -55 (2025)
- B Lot A -84 (2026)

Total: -297

Lose Lot P to Construct West End Parking Structure (2025-2026) -52 spaces

Combined Total Lost Parking Spaces: 349

New West End Parking Structure (2027) Parking Spaces: 625

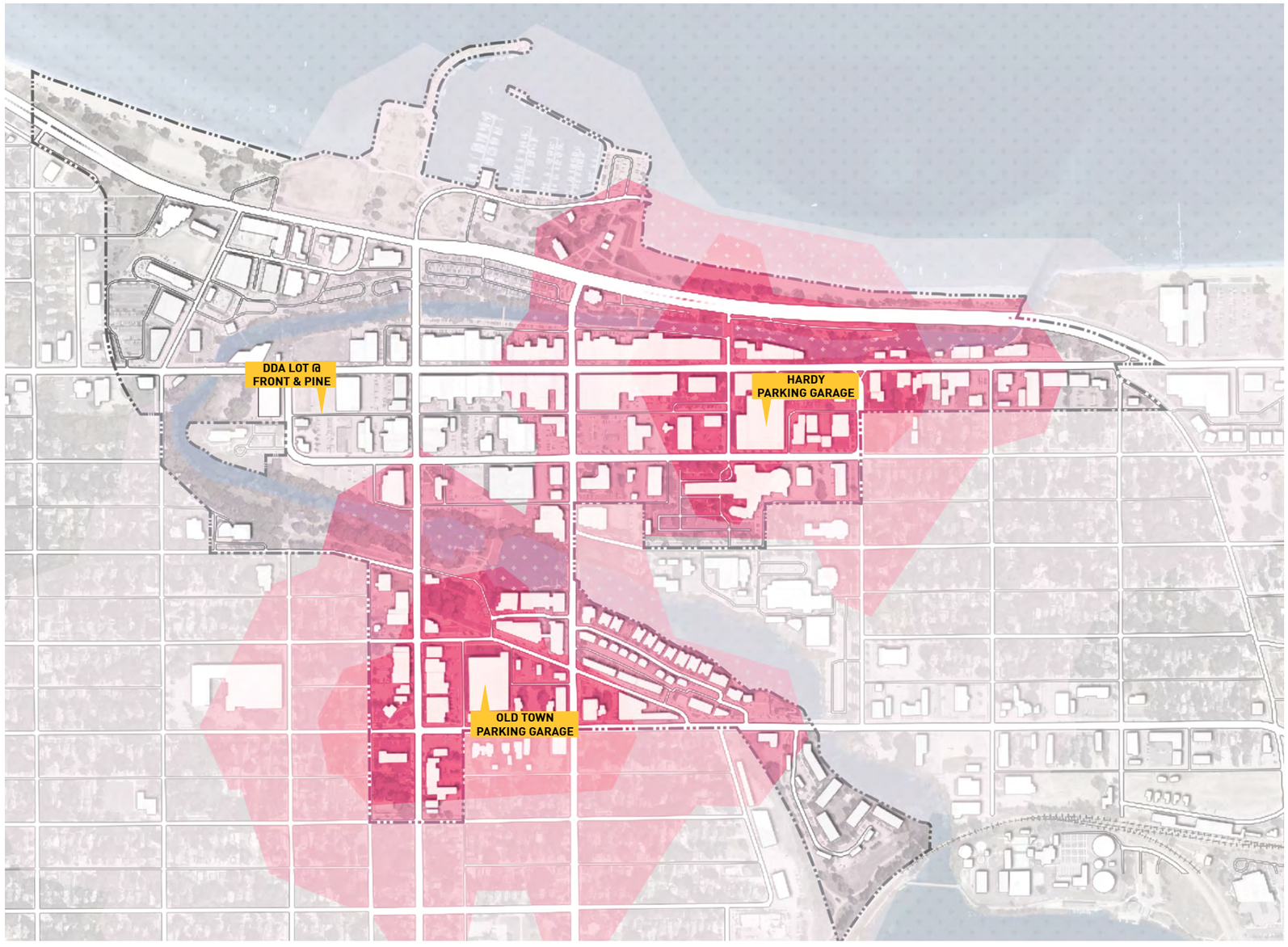
Net Gain Parking Spaces: 276

Anticipated Infill Development

- A 309 W. Front (2023)
- B 232 East State Street (2024)
- C Hall Street (2025)
- D 211 Grandview PKWY (2025)
- E 326 E. State (2025)
- F 124 W. Front (2026)

*Some Parking Provided On-site
* Retail on First Floor

March 2023



1/8 mile walking time
(2.5 minutes)

1/4 mile walking time
(5 minutes)

1/2 mile walking time
(10 minutes)

Integrated Architecture

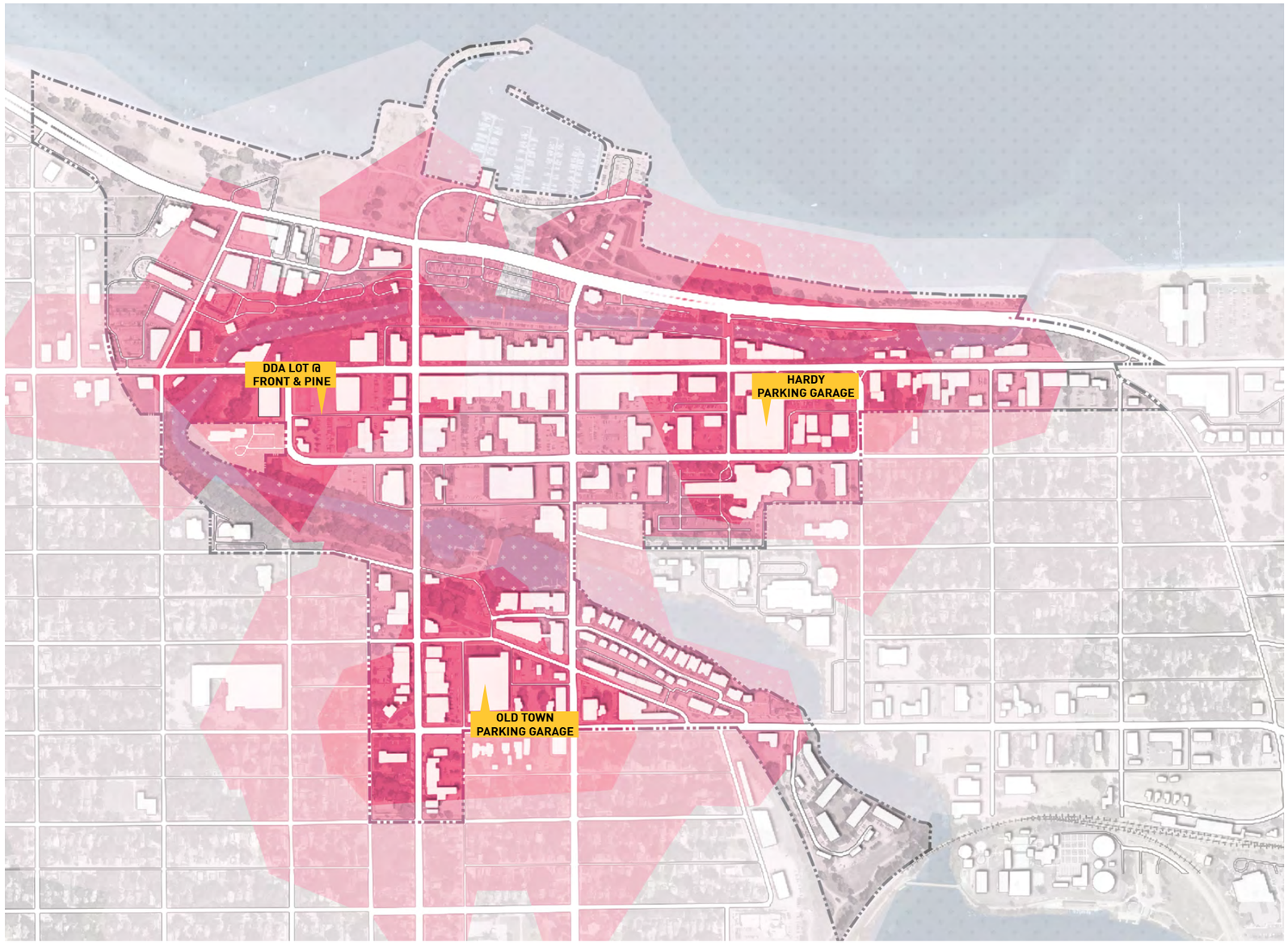
EXISTING WALKTIME MAP

N

0' 250' 500' 1000'

TRAVERSE CITY DDA
PARKING RAMP STUDY

10 MAR 2020
20190712



1/8 mile walking time
(2.5 minutes)

1/4 mile walking time
(5 minutes)

1/2 mile walking time
(10 minutes)

Integrated Architecture

WALKTIME MAP

N

0' 250' 500' 1000'

TRAVERSE CITY DDA
PARKING RAMP STUDY

10 MAR 2020
20190712

Downtown Development Authority
303 E. State Street
Traverse City, MI 49684
jean@downtowntc.com
231-922-2050

Memorandum

To: DDA Board of Directors

From: Jean Derenzy, DDA CEO

Date: February 23, 2023

Subject: Study Session

Lower Boardman/Ottaway Downtown Riverwalk

Last January, the DDA entered into a contract with Inform Studio and their team of urban designers, placemaking and mobility experts, architects, engineers and community engagement specialists to develop a conceptual design for a downtown riverwalk along the Boardman/Ottawa River between Union Street and Park Street.

As you recall, a downtown riverwalk along this stretch of the river was one of the top priorities listed in the *Unified Plan* for the Lower Boardman River and is part of the community's long-held desire to "turn and embrace" the river. In addition, the riverwalk was identified as a capital project priority in the recently completed *Moving Downtown Forward* Plan.

In November, following an 11-month planning and design process that included extensive public engagement, the DDA Board approved a conceptual design for the downtown riverwalk. Note: I have attached a summary of all the public engagement activities related to the Unified Plan and Conceptual Design. The conceptual design addresses several components, including mobility, public infrastructure (lighting, furniture, public restrooms, dumpsters, etc.), ecology, the built environment and water access, programming and placemaking (activation – 12 month a year), recreation and activities, and maintenance.

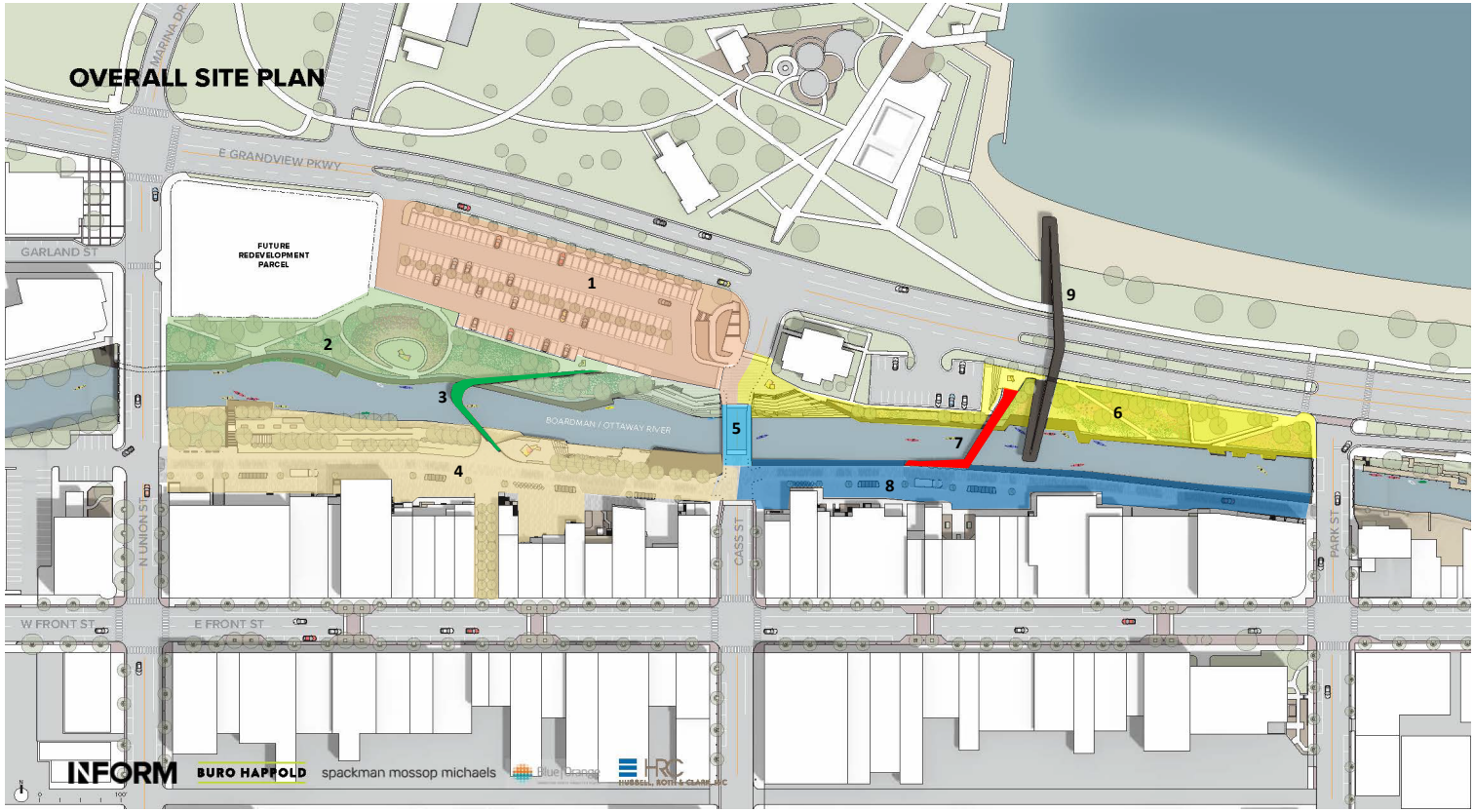
Upon the completion of the conceptual design, we worked with Inform Studio and Dharam Consulting (their construction cost and risk consultant) to develop basic construction estimates for the overall project as well as nine (9) "segments" of the project (see attached).

It is important to note that when looking at these “segments”, Lot B is already scheduled to be rebuilt and repaved in 2023, including pulling back some parking from the riverbank, new stormwater management elements and new tree canopy. Many of these elements will be recommended that the DDA incur as costs. Lot B will be presented for your consideration at your March 17th meeting.

Given the location and potential scope of the conceptual design, the riverwalk has the potential to be a truly transformational project for downtown. Given the potential costs associated with a project of this significance, we will want to consider all potential applications for implementation and funding. The potential phasing of implementation for the riverwalk needs to be discussed as well as the need for design and engineering services. Design and engineering services will provide a more accurate cost for construction as well as other project expenses (e.g., permitting, preconstruction services, etc.). Given the scope of the conceptual design, the board may want to consider requesting design and engineering services for the entire project or specific sections. Based on our discussion, I will bring formal action back to you at your March 17th meeting. Any request for design and engineering would then be presented to the City Commission for their consideration.

I look forward to discussing the timing of the riverwalk project, including preferred phases of implementation and design and engineering as it relates to our goals, objectives, priorities and budget.

Lower Boardman Riverwalk Segments – Estimated Costs



1. Lot B - $4.7
2. North-West Riverwalk - $12.5
3. 100 Block Pedestrian Bridge - $2.5
4. 100 Block Alley Riverwalk & J-Smith Walkway - $17
5. Cass Street Bridge - $440,000
6. North-East Riverwalk - $8.8
7. 200 Block Pedestrian Bridge - $2.7
8. 200 Block Alley Riverwalk - $6.4
9. Grandview Parkway Bridge - $8.5

Civic Engagement Activities Related to the Lower Boardman Riverwalk Project

Lower Boardman River Unified Plan
Lead Consultant: SmithGroup
Project Timeframe: 2019 - 2021

The planning process for the Unified Plan featured extensive public engagement opportunities.

The first round of public engagement occurred in the summer of 2019, which served as the kick-off to the entire project. These activities included:

- One (1) large community workshop under the tent along the river, in which over 100 people actively participated
- Eleven (11) pop-up meetings at various public venues throughout the city
- Four (4) focus group/stakeholder meetings, in which nearly 100 people participated (each meeting was open to the public)

This round of engagement was supported by an online survey, scavenger-hunt, press releases, social media posts, a postcard invitation, DDA website, and direct emails from our large email distribution list.

The second round of public engagement occurred in 2021. These activities included:

- One (1) large community day-long workshop at the Opera House
- Ten (10) pop-up meetings at various public venues throughout the city
- Four (4) focus group/stakeholder meetings, in which nearly 100 people participated (each meeting was open to the public)

This round of engagement was also supported by an online survey, press releases, social media posts, DDA website and direct emails from our large email distribution list

A third round of public engagement featured one (1) additional public meeting at the Governmental Center to focus on priorities for projects/funding.

Unified Leadership Team Meetings (which began in 2018) were conducted throughout the duration of the project, both in person and on-line (during the pandemic), in total we had:

- (32) Leadership Team Meetings
- (9) Riparian Subcommittee (of the Leadership Team) meetings

All meetings were public and noticed through the city's meeting identification system. Meeting notice was also provided through direct emails through our large email distribution list.

We also provided in-person project updates to the following city commissions (on three occasions) throughout the planning process:

- Planning Commission
- Parks and Recreation Commission
- City Commission

We also presented once to the Grand Traverse Tribe of Ottawa and Chippewa Indians

The DDA Board created a Lower Boardman Unified Plan Board Liaison, who provided a verbal update to the entire DDA Board at each board meeting (supplemented with a monthly memo dedicated to the project). These meetings were open to the public and can be reviewed on-line.

One of the top projects and priorities listed the Unified Plan is public space improvements (e.g., riverwalk and pedestrian plaza) along the alley/river of the 100 and 200 blocks of Front Street.

Unified Plan Adopted
DDA: Dec. 2021
Planning Commission: Jan. 2022
Parks and Recreation Commission: Feb. 2022
City Commission: Feb. 2022
*Each of these meetings was open to the public and can viewed on-line

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Lower Boardman Riverwalk Conceptual Design Process
Lead Consultant: INFORM
Project Timeframe:

The conceptual design process also featured extensive public engagement opportunities.

The first round of engagement occurred in June of 2022, which served as the public kick-off of the project. This featured two days of stakeholder meetings at the Park Place Hotel, with downtown business owners, downtown property owners, stakeholder organizations and city staff.

The second round of engagement occurred in July of 2022, with a large community open house in the alley along the river. Over 150 people participated in this event. This event provided the public an opportunity to provide input on their vision for the riverwalk.

The third round of engagement occurred in September of 2022, with a second large community open house in the alley along the river. This event provided the public an opportunity to provide feedback on preferences related to the three different design options ("takes") for the riverwalk. Images of the three "takes" were placed in the window of the arcade building along with a link to a virtual survey where people could provide additional input.

Each of these engagement activities was supported by press releases, social media posts, the DDA website and direct emails from our large email distribution list.

DDA staff provided verbal and written updates to the DDA Board at each board meeting (which are open to the public and can be reviewed on-line).

Conceptual Design Adopted
The conceptual design was approved by the DDA Board at their November 2022 meeting.
*This meeting was open to the public and can viewed on-line

Downtown Development Authority
303 E. State Street
Traverse City, MI 49684
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231-922-2050

Memorándum

To: Downtown Development Authority Board

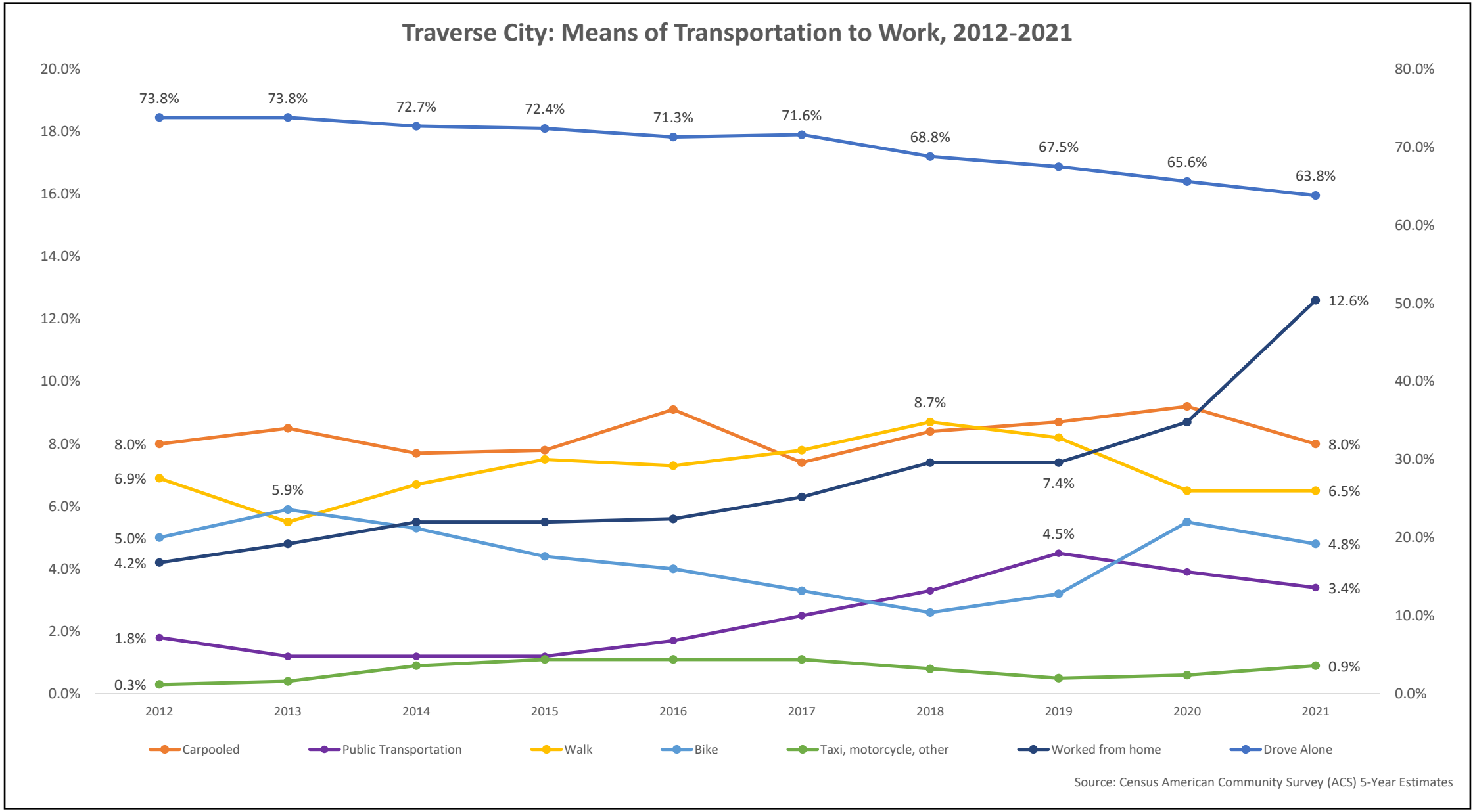
From: Jean Derenzy, DDA CEO

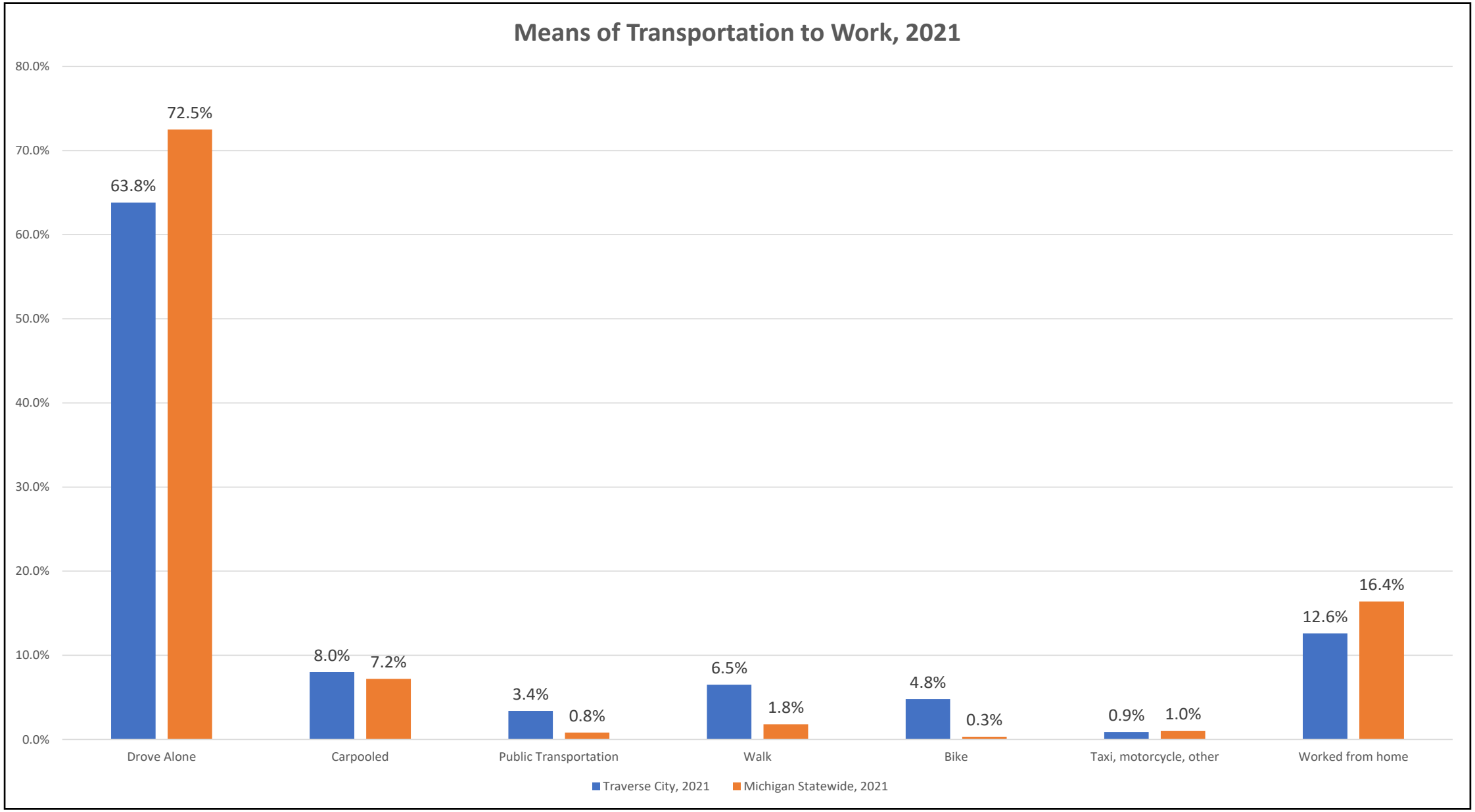
Date: February 26, 2023

Subject: Mobility Action Plan Update

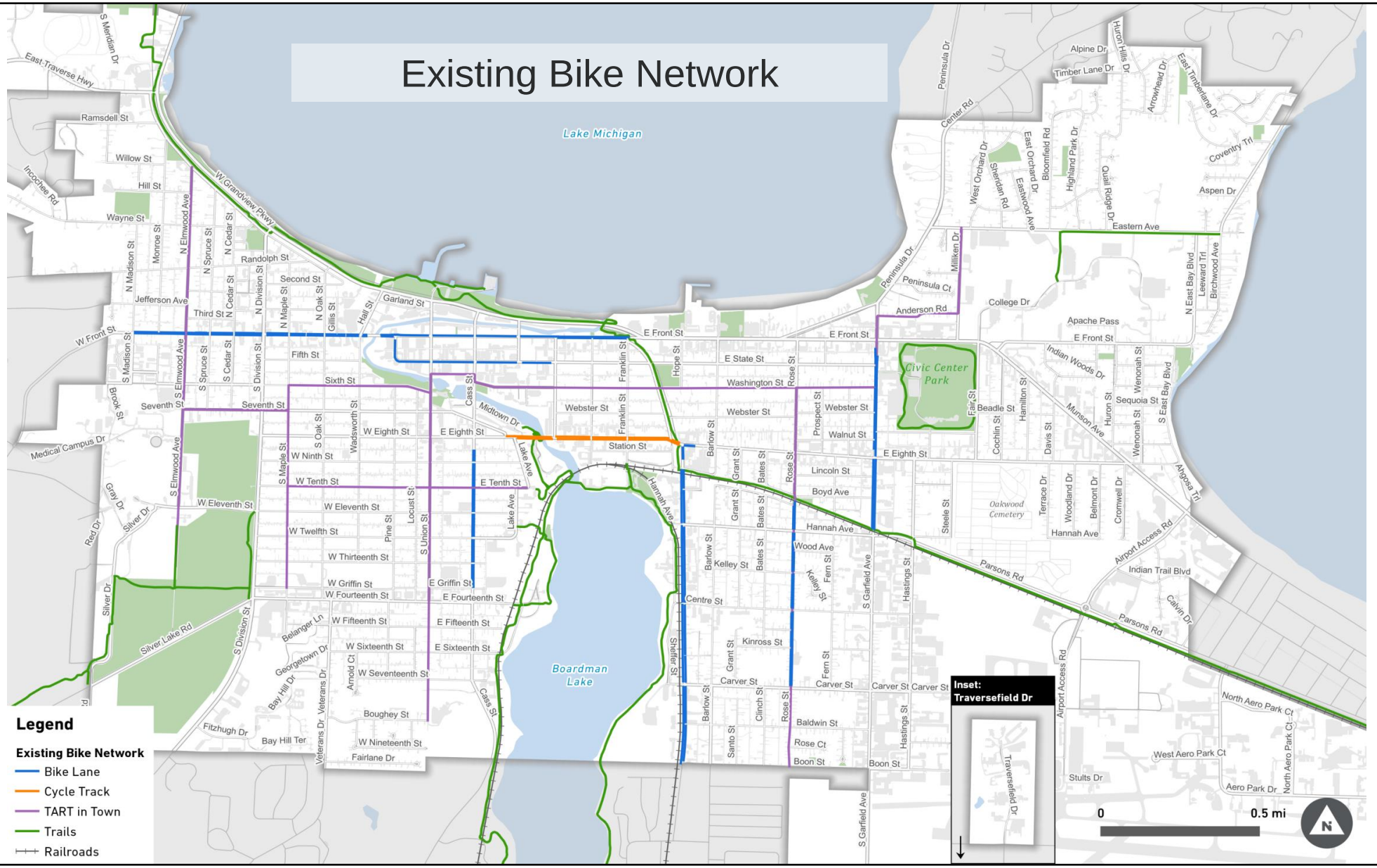
As you recall, Chris Zull from Progressive AE attended our January board meeting to discuss the Mobility Action Plan, including the results of the first round of public engagement and potential themes for a localized version of complete streets. A second public meeting is scheduled for Wednesday, March 15th at the City Opera House to discuss the results of the network analysis (maps) and a conceptual network map. I have attached the maps, including the conceptual network map for your review. These maps will be presented and discussed at a joint city commission/planning commission meeting on March 13th, but I wanted to be sure you had an opportunity to review the draft maps.

As a reminder, information on the Mobility Action Plan can be found on their project websites:
Mobility Action Plan: https://tcmobility-pae.hub.arcgis.com/


Traverse City: Means of Transportation to Work, 2012-2021
20.0%
18.0%
16.0%
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
73.8%
73.8%
72.7%
72.4%
71.3%
71.6%
68.8%
67.5%
65.6%
63.8%
8.0%
6.9%
5.9%
5.0%
4.2%
1.8%
0.3%
8.7%
7.4%
4.5%
12.6%
8.0%
6.5%
4.8%
3.4%
0.9%
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Carpooled
Public Transportation
Walk
Bike
Taxi, motorcycle, other
Worked from home
Drove Alone
Source: Census American Community Survey (ACS) 5-Year Estimates

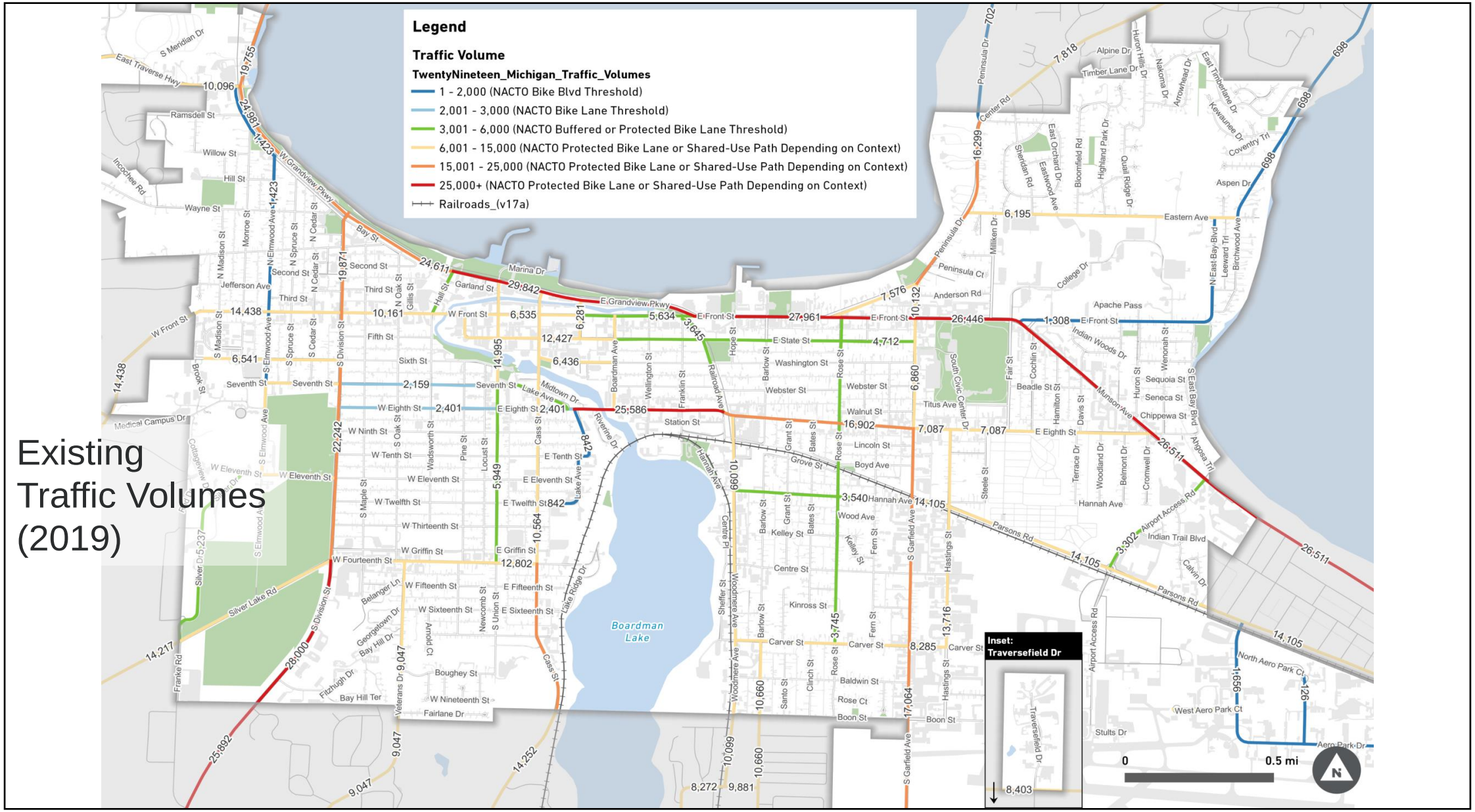

Means of Transportation to Work, 2021
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
63.8%
72.5%
8.0%
7.2%
3.4%
0.8%
6.5%
1.8%
4.8%
0.3%
0.9%
1.0%
12.6%
16.4%
Drove Alone
Carpooled
Public Transportation
Walk
Bike
Taxi, motorcycle, other
Worked from home
Traverse City, 2021
Michigan Statewide, 2021

Existing Bike Network

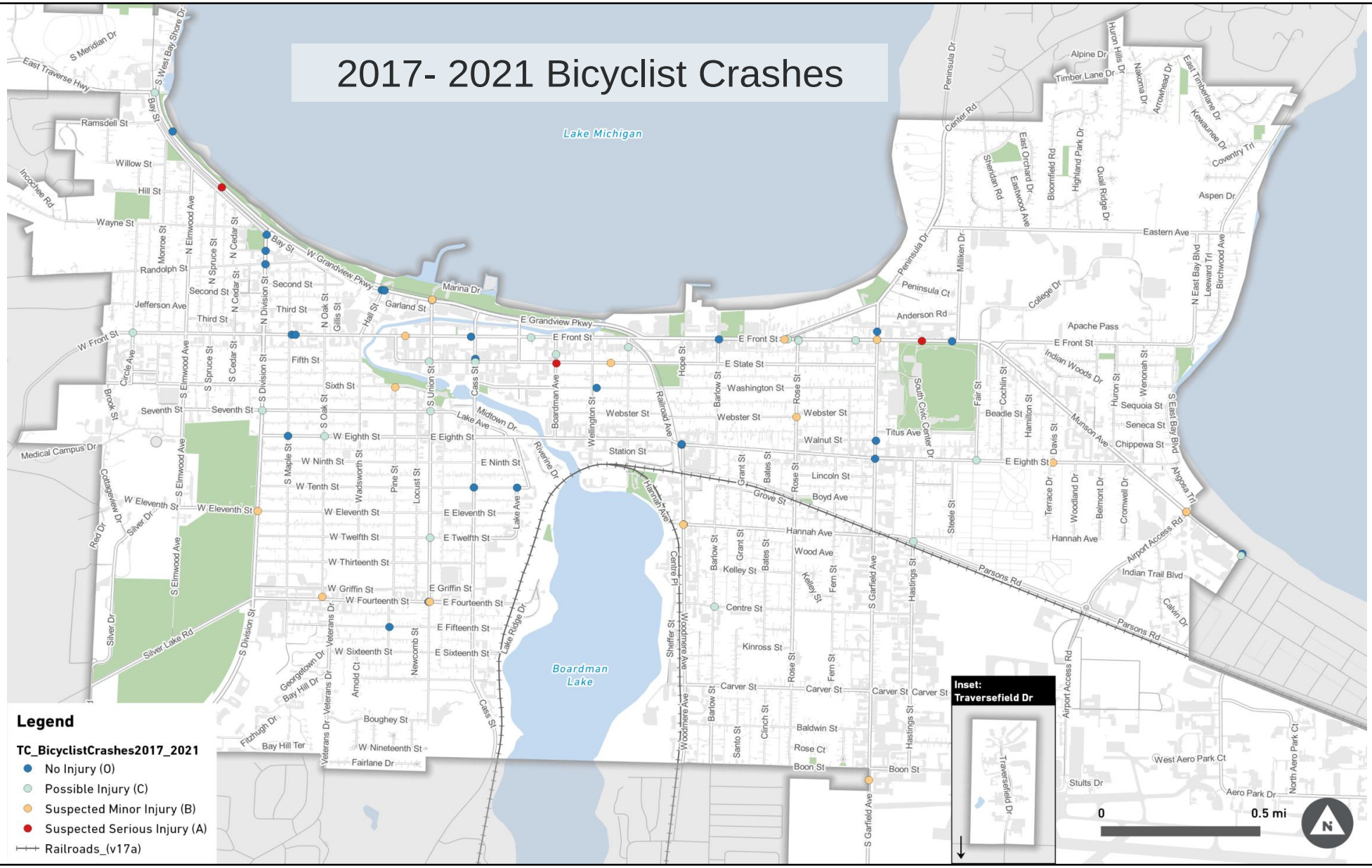



Existing Sidewalks
Lake Michigan
Boardman Lake
Civic Center Park
Oakwood Cemetery
Inset: Traversefield Dr
Legend
Sidewalk
Trails
Railroads
0
0.5 mi
N

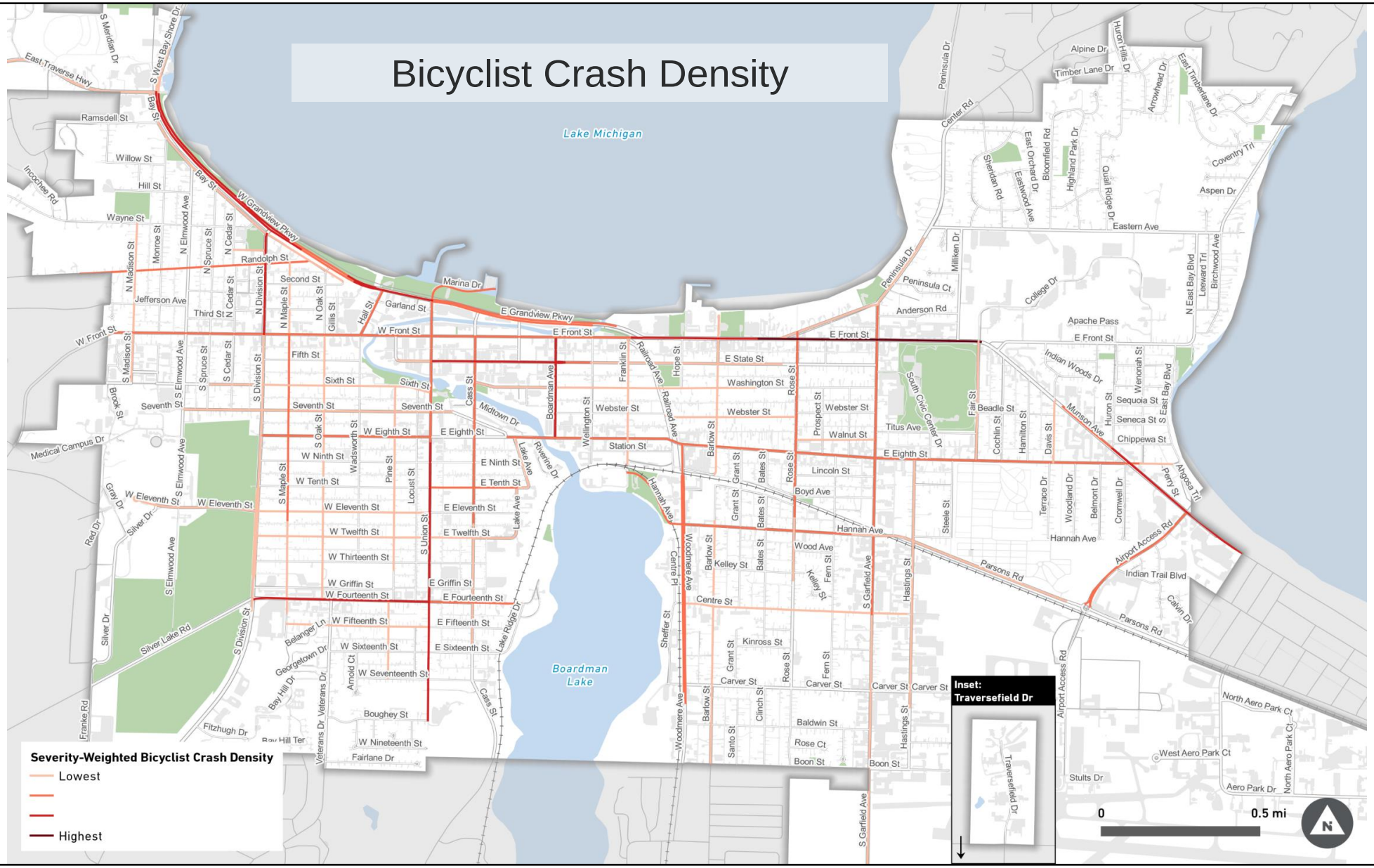
Existing Traffic Volumes (2019)



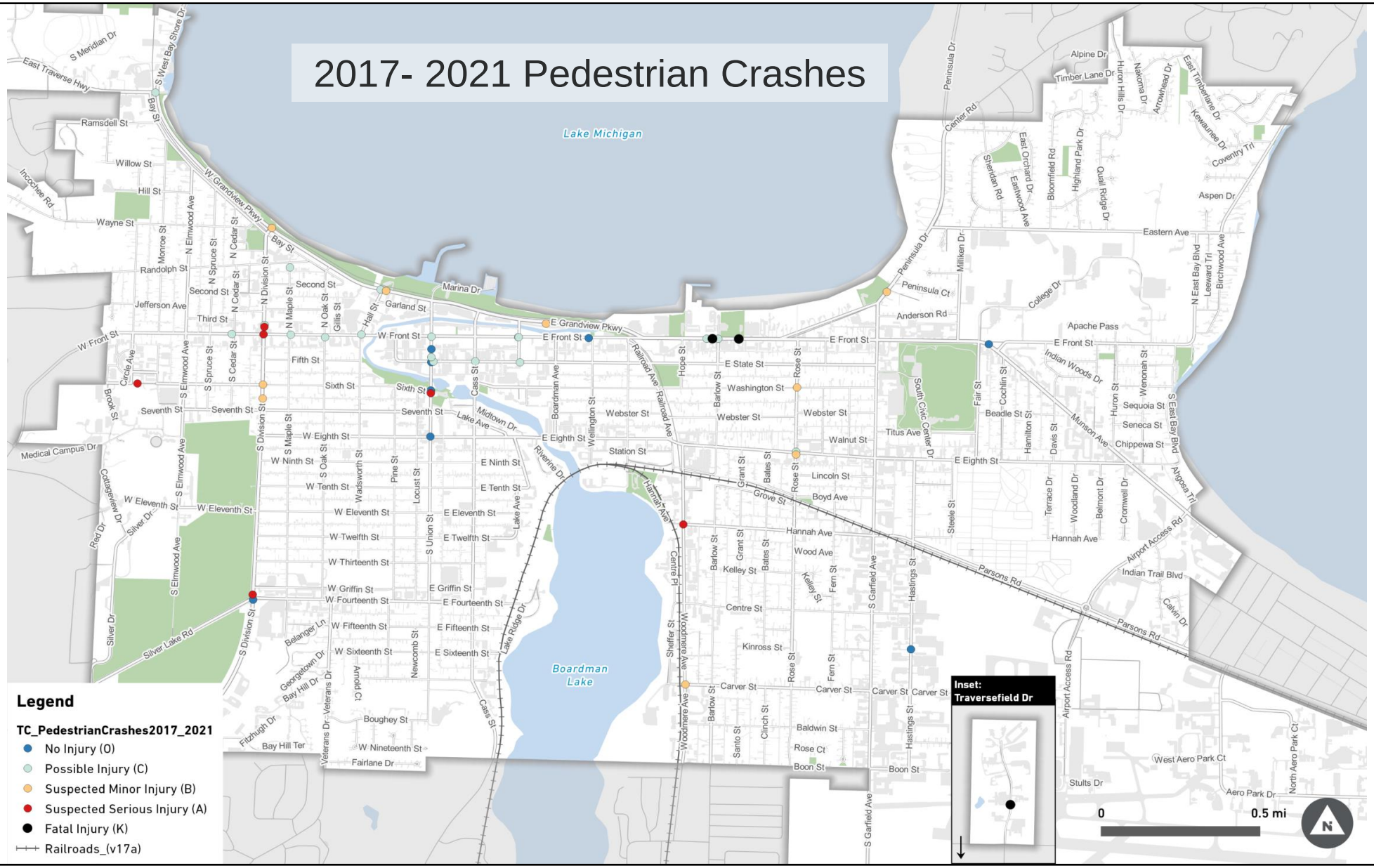
2017- 2021 Bicyclist Crashes

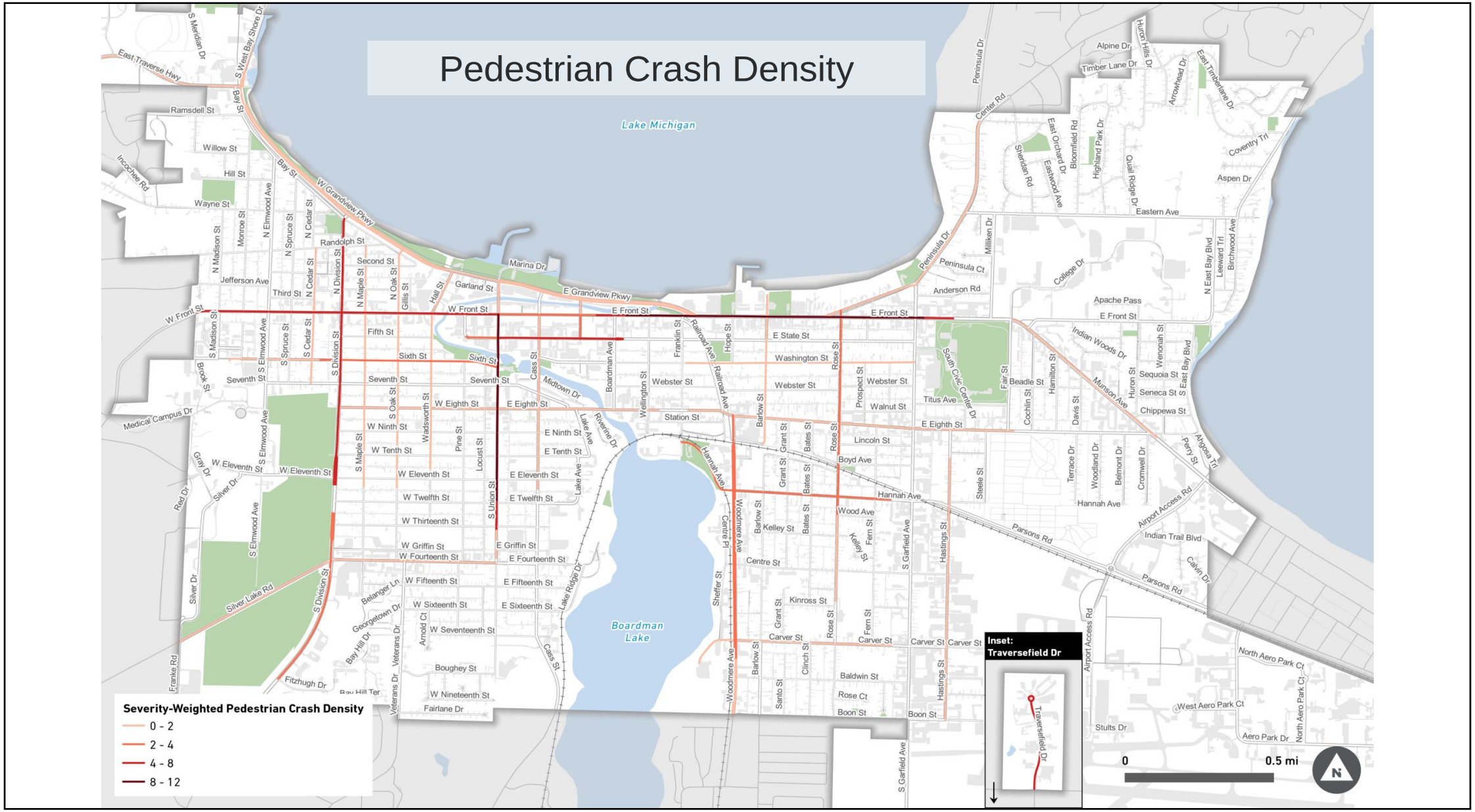


Bicyclist Crash Density



2017- 2021 Pedestrian Crashes

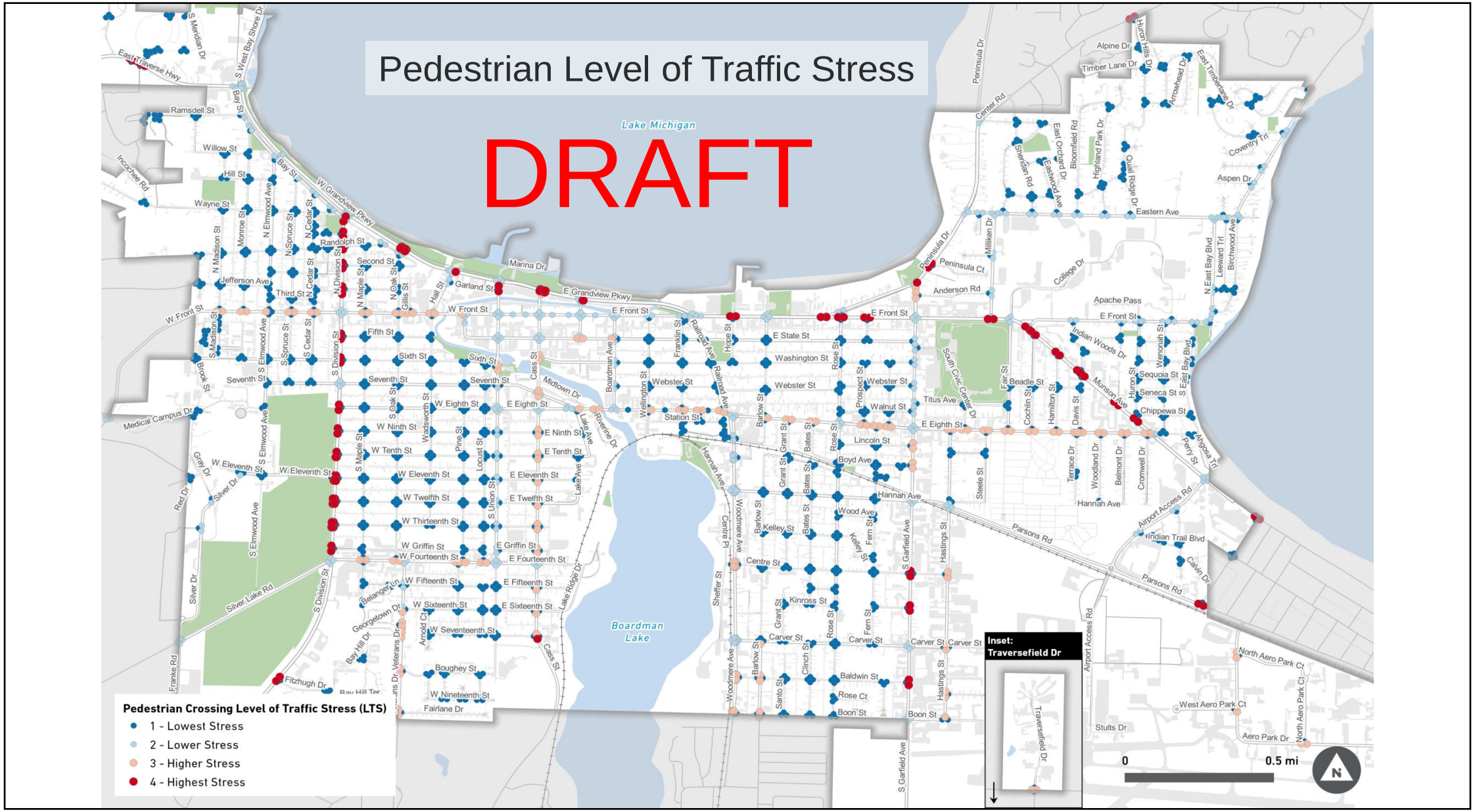



Pedestrian Crash Density
Lake Michigan
Boardman Lake
Severity-Weighted Pedestrian Crash Density
0 - 2
2 - 4
4 - 8
8 - 12
Inset: Traversefield Dr
Traversefield Dr
0
0.5 mi
N

Bicyclist Level of Traffic Stress

TOOLE DESIGN

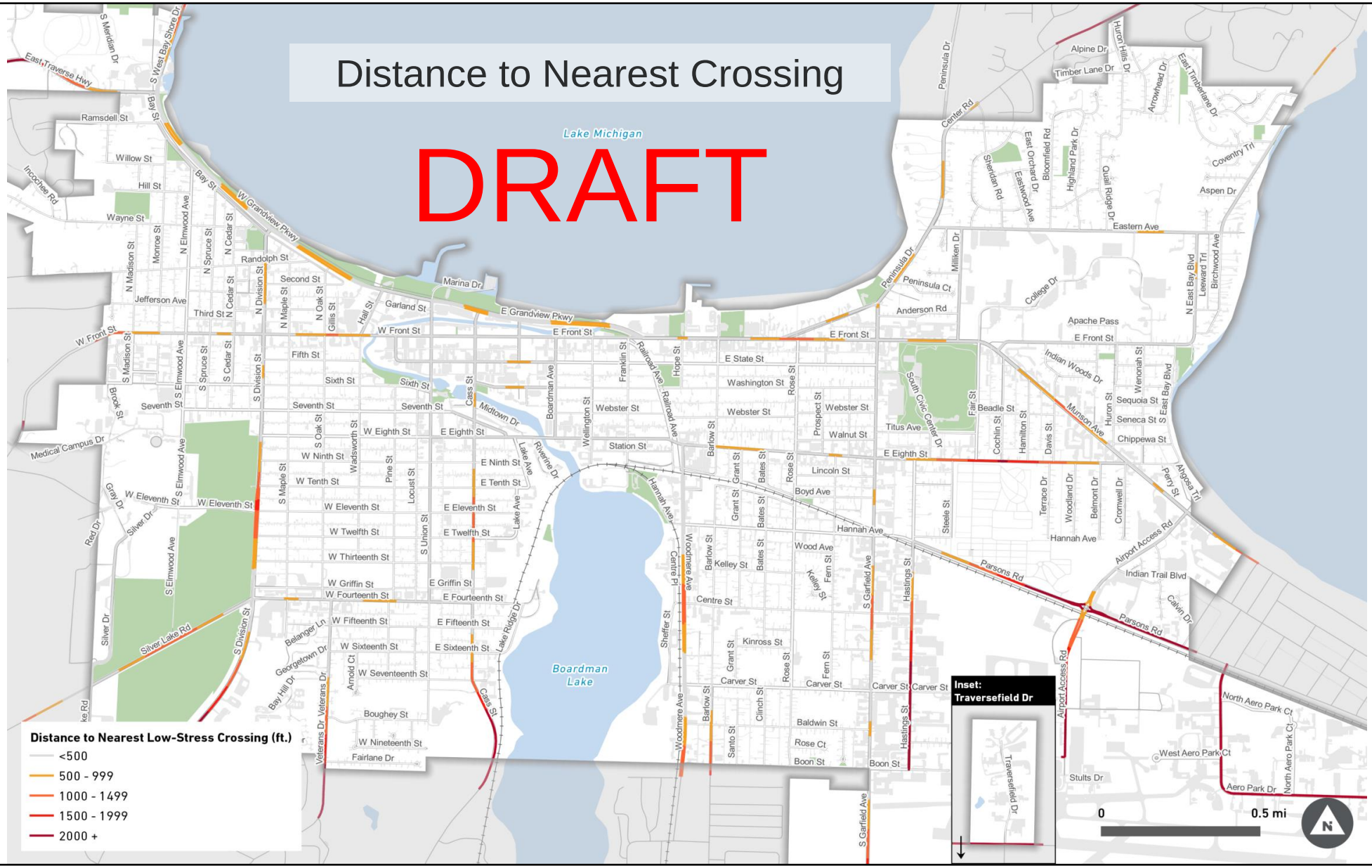

Bicycle Level of Traffic Stress
DRAFT
Lake Michigan
Boardman Lake
Level of Traffic Stress (LTS)
1 - Lowest Stress
2 - Lower Stress
3 - Higher Stress
4 - Highest Stress
Inset: Traversefield Dr
0
0.5 mi
N


Pedestrian Level of Traffic Stress
DRAFT
Lake Michigan
Boardman Lake
Pedestrian Crossing Level of Traffic Stress (LTS)
1 - Lowest Stress
2 - Lower Stress
3 - Higher Stress
4 - Highest Stress
Inset: Traversefield Dr
Traversefield Dr
0
0.5 mi
N
East Traverse Hwy
Ramsdell St
Willow St
Hill St
Wayne St
Jefferson Ave
Third St
W Front St
Fifth St
Sixth St
Seventh St
Medical Campus Dr
W Eleventh St
Silver Dr
Silver Lake Rd
Frankie Rd
Fitzhugh Dr
Bay Hill Dr
Georgetown Dr
Belanger Ln
Arnold Ct
Boughey St
W Nineteenth St
Fairlane Dr
Second St
Randolph St
Garland St
Marina Dr
E Grandview Pkwy
W Grandview Pkwy
E Front St
E State St
Washington St
Webster St
Station St
E Eighth St
E Ninth St
E Tenth St
E Eleventh St
E Twelfth St
E Griffin St
E Fourteenth St
E Fifteenth St
E Sixteenth St
Midtown Dr
Riverine Dr
Lake Ridge Dr
Sheffer St
Centre St
Kinross St
Carver St
Baldwin St
Rose Ct
Boon St
Lincoln St
Boyd Ave
Hannah Ave
Wood Ave
Kelley St
Parsons Rd
Titus Ave
Walnut St
Peninsula Dr
Peninsula Ct
Anderson Rd
College Dr
Eastern Ave
Apache Pass
Indian Woods Dr
Munson Ave
Chippewa St
Sequoia St
Seneca St
Hannah Ave
Airport Access Rd
Indian Trail Blvd
Calvin Dr
Stults Dr
North Aero Park Ct
West Aero Park Ct
Aero Park Dr
Alpine Dr
Timber Lane Dr
Aspen Dr
Coventry Trl
Center Rd
Sheridan Rd
East Orchard Dr
Eastwood Ave
Bloomfield Rd
Highland Park Dr
Quail Ridge Dr
Arrowhead Dr
Huron Hills Dr
East Timberlane Dr
Milliken Dr
Leeward Trl
Birchwood Ave
N East Bay Blvd
S East Bay Blvd
Wenonah St
Huron St
Davis St
Hamilton St
Cochlin St
Fair St
Beadle St
South Civic Center Dr
Steele St
Terrace Dr
Woodland Dr
Belmont Dr
Cromwell Dr
Perry St
Angosa Trl
Prospect St
Hope St
Railroad Ave
Franklin St
Wellington St
Boardman Ave
Cass St
Lake Ave
Locust St
Pine St
Wadsworth St
Oak St
Gillis St
Hall St
Maple St
Division St
Elmwood Ave
Cedar St
Spruce St
Madison St
Monroe St
Brook St
Gray Dr
Red Dr
Bay St
S West Bay Shore Dr
N Meridian Dr
Incochee Rd
Woodmere Ave
Central Pl
Barlow St
Grant St
Bates St
Rose St
Fern St
S Garfield Ave
Hastings St
Clinch St
Santo St
Carver St
Kinross St
Baldwin St
Rose Ct
Boon St

Existing Signals, HAWKs, RRFBs

Distance to Nearest Crossing

DRAFT




Missing Sidewalks
DRAFT
Lake Michigan
Boardman Lake
Civic Center Park
Oakwood Cemetery
Legend
Sidewalk
Trails
Missing Sidewalks
High Priority
Medium Priority
Railroads
Inset: Traversefield Dr
0
0.5 mi
N

NACTO *Designing for All Ages and Abilities*

Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed*	**Target Motor Vehicle Volume (ADT)**	**Motor Vehicle Lanes**	**Key Operational Considerations**	
Any		*Any*	*Any of the following:* high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts‡	**Protected Bicycle Lane**
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	**Shared Street**
≤ 20 mph	≤ 1,000 – 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	**Bicycle Boulevard**
≤ 25 mph	≤ 500 – 1,500			
	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	**Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane**
	≤ 3,000 – 6,000			**Buffered or Protected Bicycle Lane**
	Greater than 6,000			**Protected Bicycle Lane**
	Any	Multiple lanes per direction		
Greater than 26 mph†	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	**Protected Bicycle Lane, or Reduce Speed**
		Multiple lanes per direction		**Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed**
	Greater than 6,000	*Any*	*Any*	**Protected Bicycle Lane**

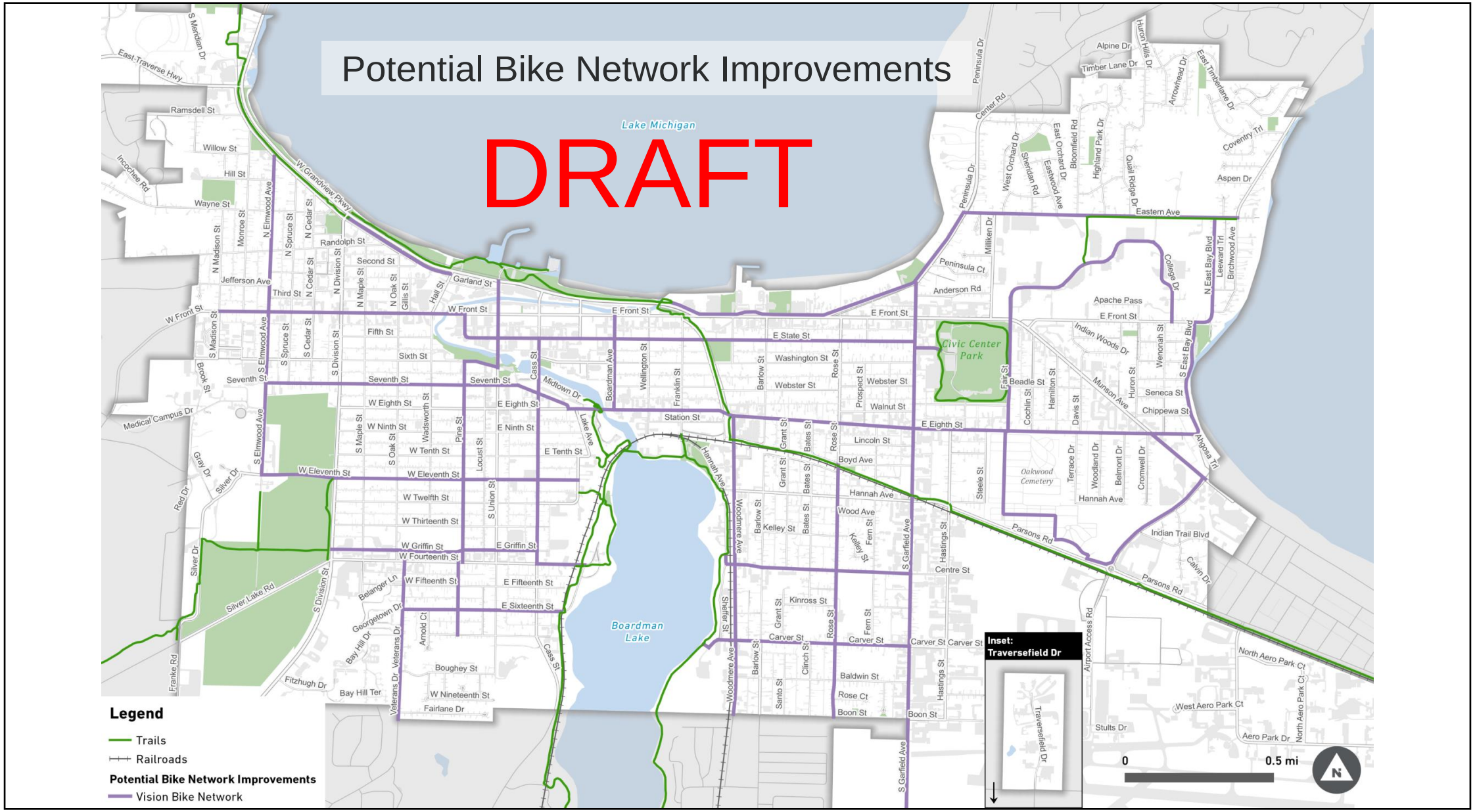
NOTES:

* While posted or 85th percentile motor vehicle speed are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to bicyclists and more frequent passing events. Setting target speed based on this threshold results in a higher level of bicycling comfort for the full range of riders.

† Setting 25 mph as a motor vehicle speed threshold for providing protected bikeways is consistent with many cities' traffic safety and Vision Zero policies. However, some cities use a 30-mph posted speed as a threshold for protected bikeways, consistent with providing Level of Traffic Stress level 2 (LTS 2) that can effectively reduce stress and accommodate more types of riders.

‡ Operational factors that lead to bikeway conflicts are reasons to provide protected bike lanes regardless of motor vehicle speed and volume.

Source: https://nacto.org/publication/urban-bikeway-design-guide/designing-ages-abilities-new/choosing-ages-abilities-bicycle-facility/

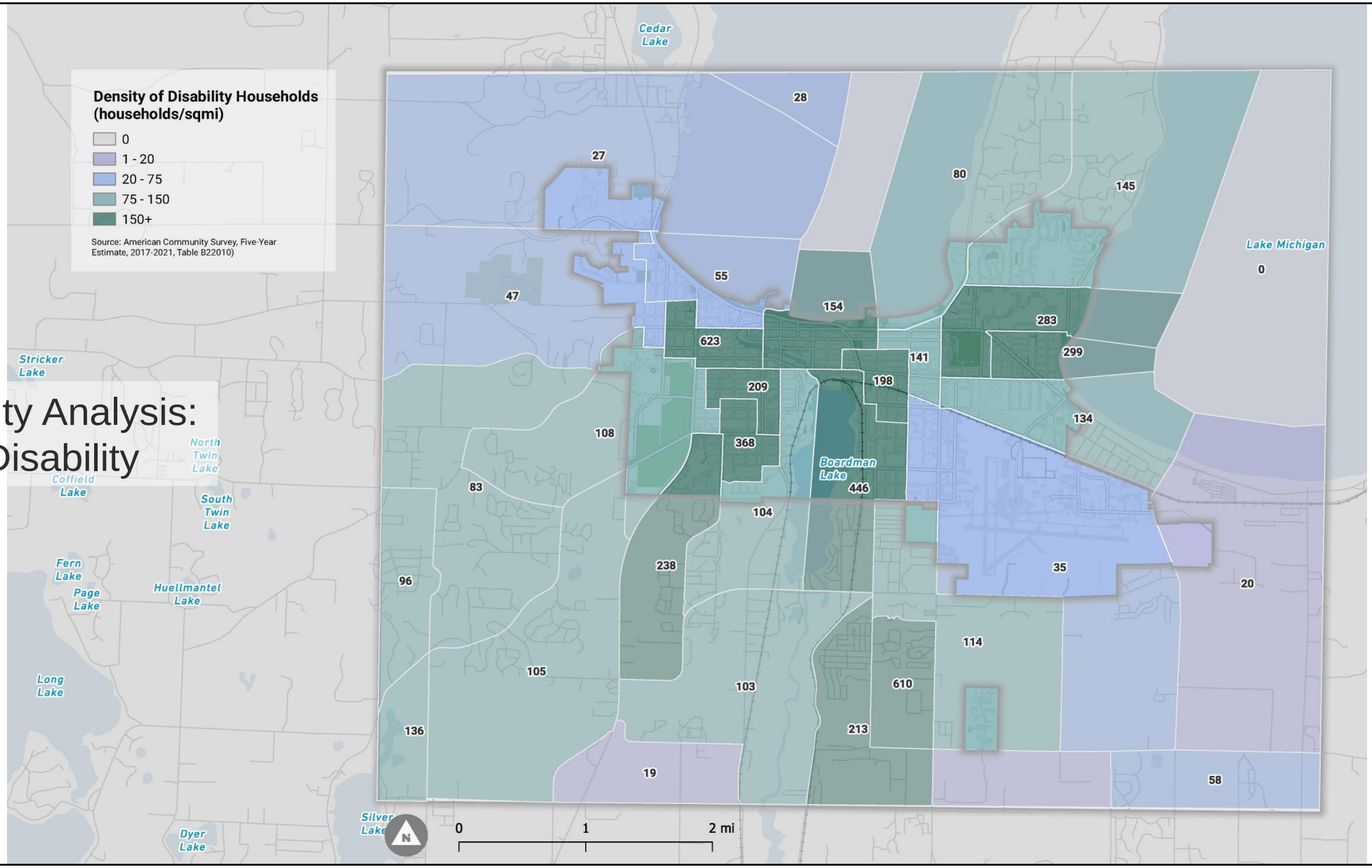

Potential Bike Network Improvements
DRAFT
Lake Michigan
Boardman Lake
Civic Center Park
Oakwood Cemetery
Inset: Traversefield Dr
Legend
Trails
Railroads
Potential Bike Network Improvements
Vision Bike Network
0
0.5 mi
N

Potential Crossing Improvements

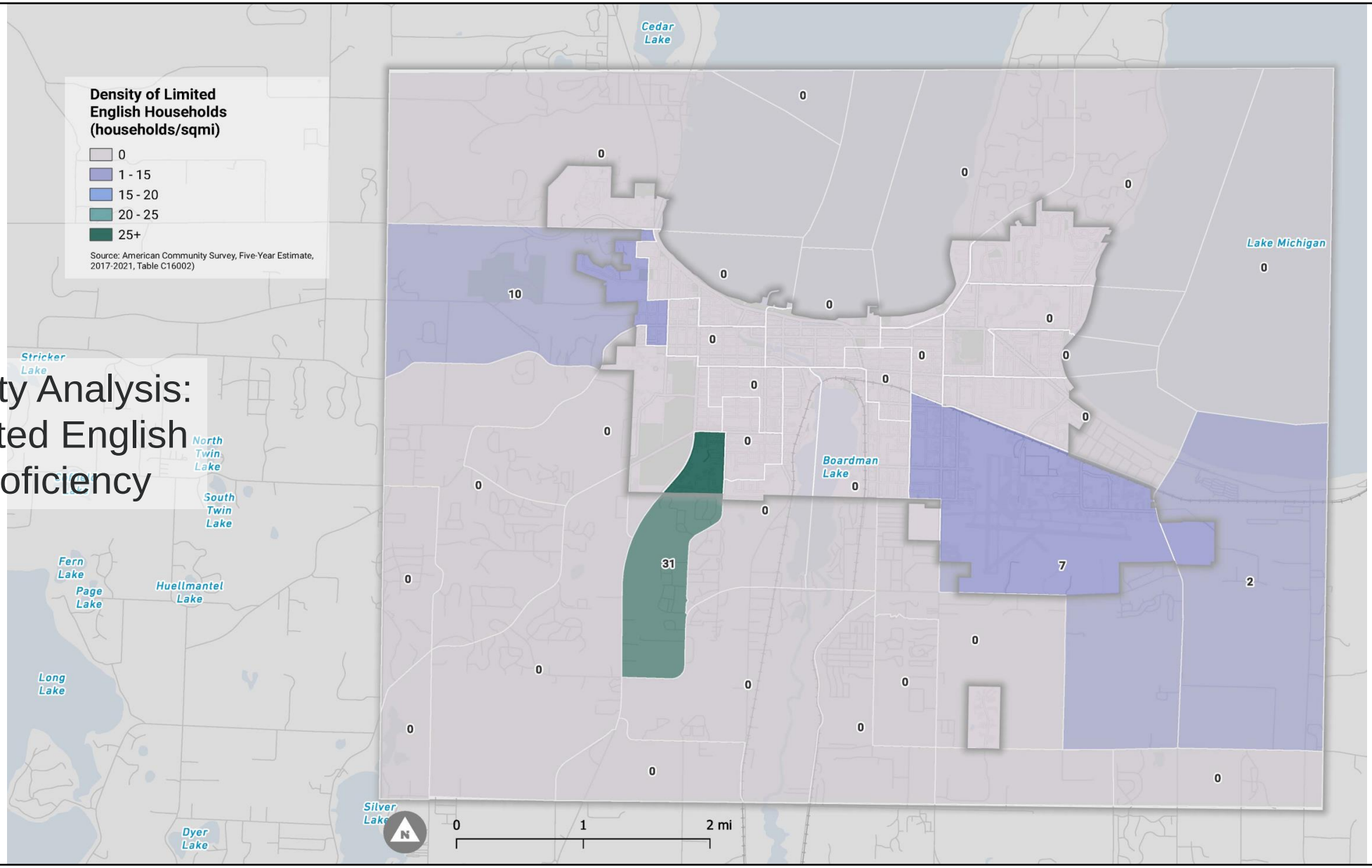
DRAFT


Legend
Trails
Existing Crossing Improvements
HAWK
RRFB
TrafficSignals
Potential Crossing Improvements
Crossing Improvement
RRFBs
Traffic Signal
Railroads
Potential Bike Network Improvements
Vision Bike Network
Boardman Lake
Civic Center Park
Oakwood Cemetery
Inset: Traversefield Dr
0
0.5 mi
N
Potential Improvements Combined
DRAFT

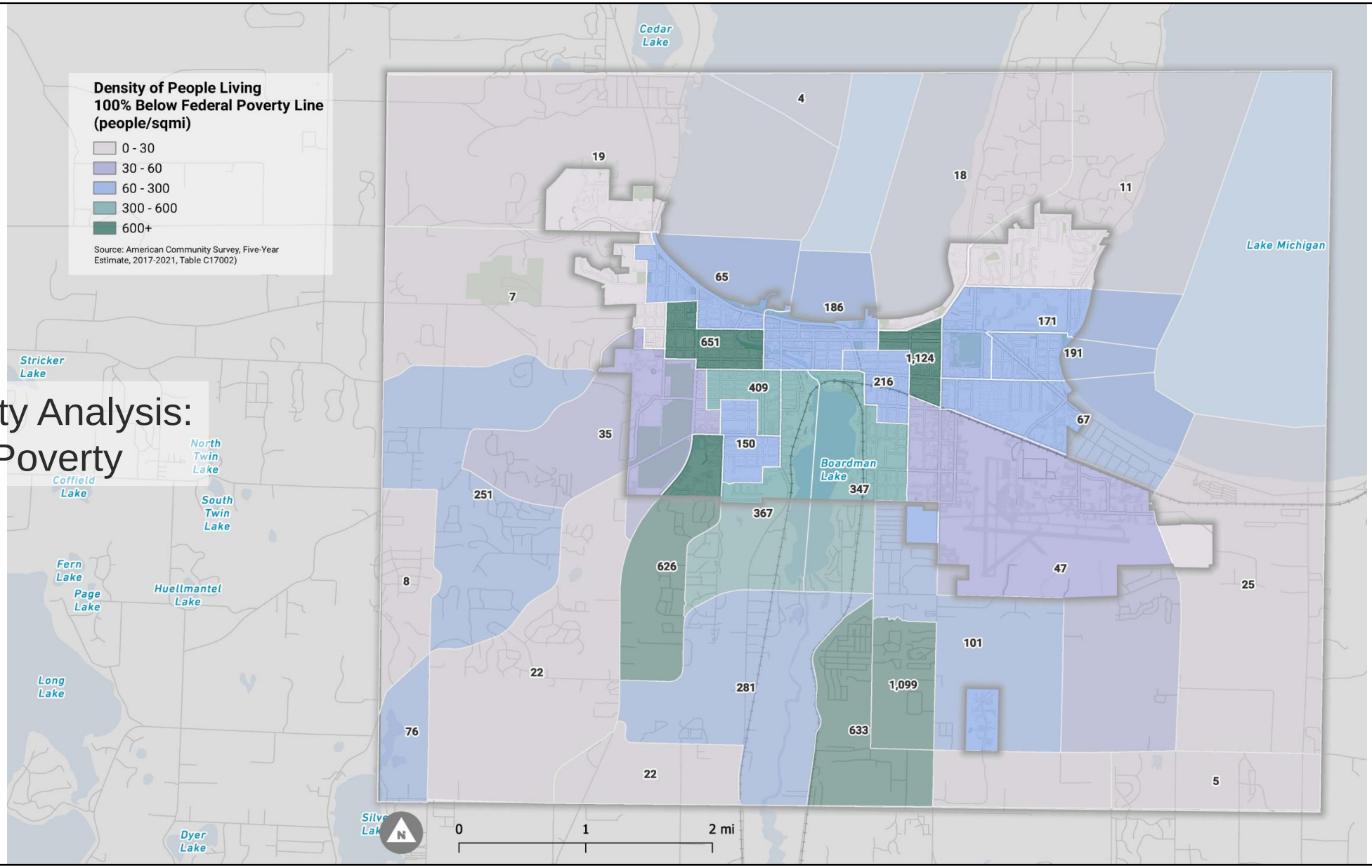
Equity Analysis: Disability



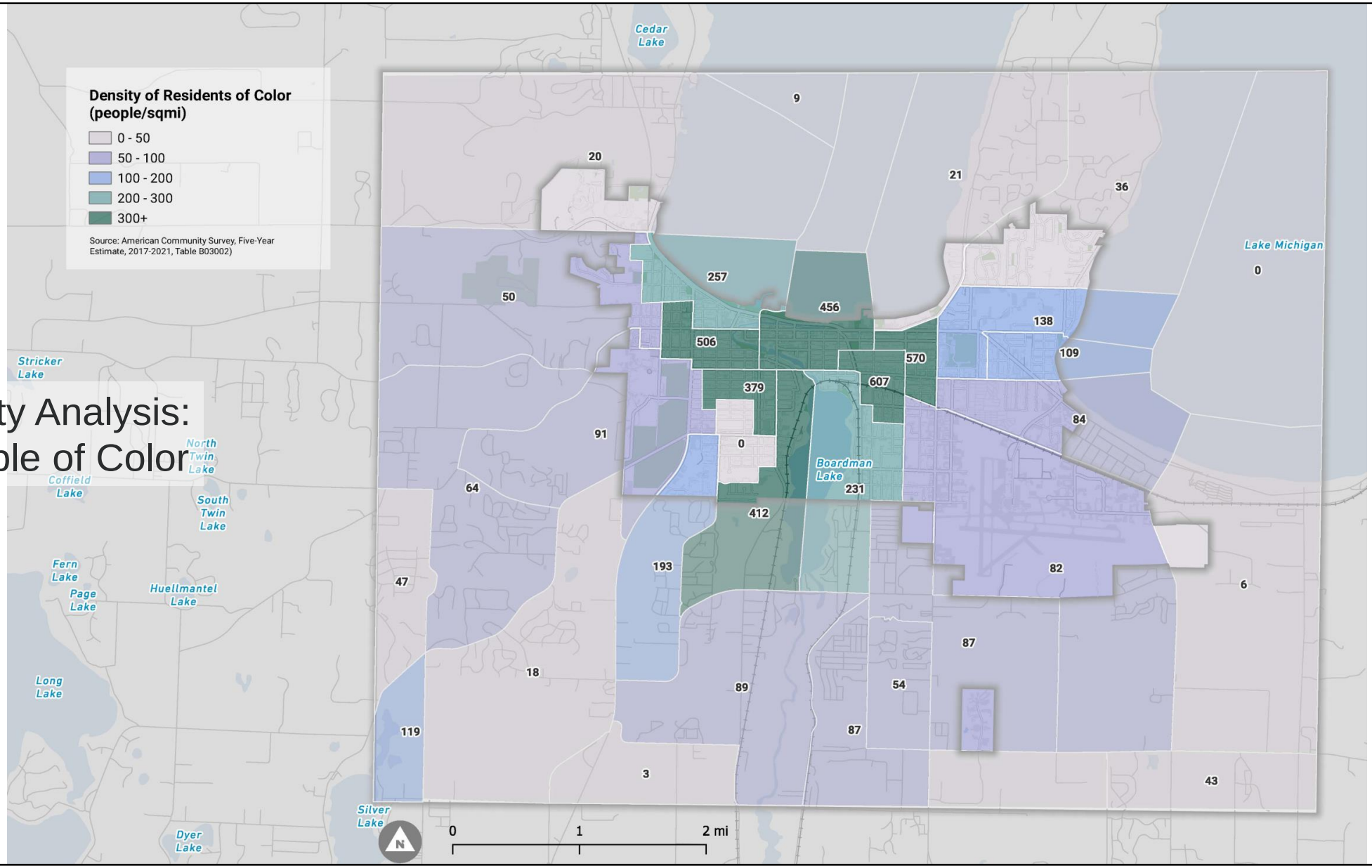
Equity Analysis: Limited English Proficiency



Equity Analysis: Poverty



Equity Analysis: People of Color



Equity Analysis: Zero Vehicle Households