

# COMPREHENSIVE OPERATIONS ANALYSIS (COA) PLAN

April 14, 2020



**AECOM**

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# 1.0 INTRODUCTION AND SERVICE OVERVIEW

SMART Path is an intensive, year-and-a-half-long study that identifies, analyzes, and prioritizes a series of transit improvements to create a more efficient bus system in Metro Detroit. The study included a thorough technical analysis of SMART's transit services and regional transportation and mobility characteristics. In addition, a thorough public engagement effort was completed that included a focus on existing and new riders' needs through on-vehicle surveys, in person meetings within all three counties, and digital engagement through an online MetroQuest survey. The intent of the SMART Path Plan is to create the best possible transit network for SMART riders within SMART's available budget. This Plan outlines and explains the SMART Path recommendations for fixed route service to be phased in over the next five years. The goal of these recommendations is to maximize the impact of taxpayer funding for transit by improving system efficiency, heightening quality of service, and piloting new service delivery options to address existing challenges.

## 1.1 SERVICE AREA

SMART is responsible for transportation to the counties of Macomb, Oakland, and Wayne. Communities in Oakland and Wayne counties may opt into or out of SMART services individually through the decision of their municipal governments, while communities in Macomb County opt into or out of services on a county-wide level. The service area of 1,074 square miles has a population of 3,424,477 people<sup>1</sup>. **Figure I** shows the current SMART system, and **Table I** shows all of SMART's current opt-in communities.

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<sup>1</sup> Federal Transit Administration. (2017). *2017 Annual Database Agency Information*. Retrieved from National Transit Database: <https://www.transit.dot.gov/ntd/data-product/2017-annual-database-agency-information>

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Table I: Opt-In Communities by County

Macomb County	Oakland County	Wayne County
Macomb County is opt-in at a countywide level; all its communities are part of SMART's service area.	Auburn Hills Berkley Beverly Hills Bingham Farms Birmingham Bloomfield Township Clawson Farmington Farmington Hills Ferndale Franklin Hazel Park Huntington Woods Lathrup Village Madison Heights Oak Park Pleasant Ridge Pontiac Royal Oak Royal Oak Township Southfield Troy Walled Lake West Bloomfield	Allen Park Dearborn Dearborn Heights Ecorse Garden City Grosse Pointe Grosse Pointe Park Grosse Pointe Shores Grosse Pointe Woods Grosse Pointe Farms Hamtramck Harper Woods Highland Park Inkster Lincoln Park Melvindale Redford Township River Rouge Riverview Romulus Southgate Taylor Trenton Wayne Westland Wyandotte

## 1.2 FIXED ROUTE

SMART has six different types of routes:

- **Main Corridor:** Operates in and between suburban communities on major roads
- **Community:** Operates within suburban communities
- **Crosstown:** Operates between suburban communities, connecting to Main Corridor routes
- **Commuter:** Operates between suburban communities during peak/rush hours only
- **Park-&-Ride:** Connects Park-&-Ride lots to Downtown Detroit during peak/rush hours only



- **FAST:** Stands for “Frequent Affordable Safe Transit” and connects the suburbs to Downtown Detroit with limited-stop, high-frequency, WiFi-equipped service

### 1.3 OTHER SERVICES

**Connector** service is directly operated by SMART and is an advance reservation, curb-to-curb transportation option which provides trips within a 10-mile radius from the pickup point as long as it is located within the SMART service area. Riders must live further than 1/3 of a mile from a fixed route unless they are a senior or an individual with a disability. This service is meant to supplement fixed route in providing connectivity throughout the region but is unable to meet demand with its current capacity.

Americans with Disabilities Act (**ADA**, also referred to as Paratransit) service is an advance reservation, curb-to-curb or door-to-door transportation option directly operated by SMART specifically for people who are unable to use fixed route because of a disability. Riders must be ADA certified and trips must be to and from locations within ¾ of a mile of a SMART bus stop. This service mimics fixed route service.

**Small Bus/Shuttle** services are directly operated by SMART and are meant to supplement fixed route by providing curb-to-curb transportation options to specific areas where there is limited or no access to fixed route. Small Bus services include the Groesbeck Flex Route, Oakland Mall Shuttle, Somerset Shuttle, and Farmington and Farmington Hills Dial-A-Ride.

**Community Transit** services are transportation programs provided through partnerships between SMART and local communities and organizations, and each one looks different. These services are meant to meet specific transportation needs in each community and complement SMART’s directly operated Connector service.

This plan focuses on the fixed route services.



Source: <https://www.smartbus.org/ridesmart-fast>



## 2.0 MARKET ANALYSIS

Public transportation is most efficient and effective in areas of high population and employment density. Where greater concentrations of people and jobs exist, ridership is likely to be higher. However, most transit agencies also strive to provide comprehensive service to the communities in their jurisdiction and to residents who have no other means of transportation.

This market analysis identifies the areas of Wayne, Oakland, and Macomb counties that have the highest potential for transit ridership as well as the areas that have the highest need for transit services. The analysis focuses on opt-in communities that support SMART through a property tax millage, with additional attention given to regional job centers which include communities that have opted out and SMART does not currently provide with bus service. The first part of this market analysis, Transit Potential, identifies areas with high population and employment densities. The second part of the market analysis, Transit Need, uses the lenses of income, vehicle availability, age, and disability status to highlight communities with the greatest propensity to use transit. The final part of the market analysis, Activity Center and Travel Analysis, examines major attractors of transit trips and existing travel patterns between home, work, and other destinations.

### 2.1 TRANSIT POTENTIAL

High transit ridership is most likely to be found where high concentrations of population and employment exist. In the SMART service area, these areas include central Detroit, Dearborn, freeway corridors in Troy, Southfield, and Farmington Hills, as well as other commercial corridors in Warren and Sterling Heights. Livonia is another area with high concentrations of population and employment which lies just outside the SMART service area.

#### Population Density

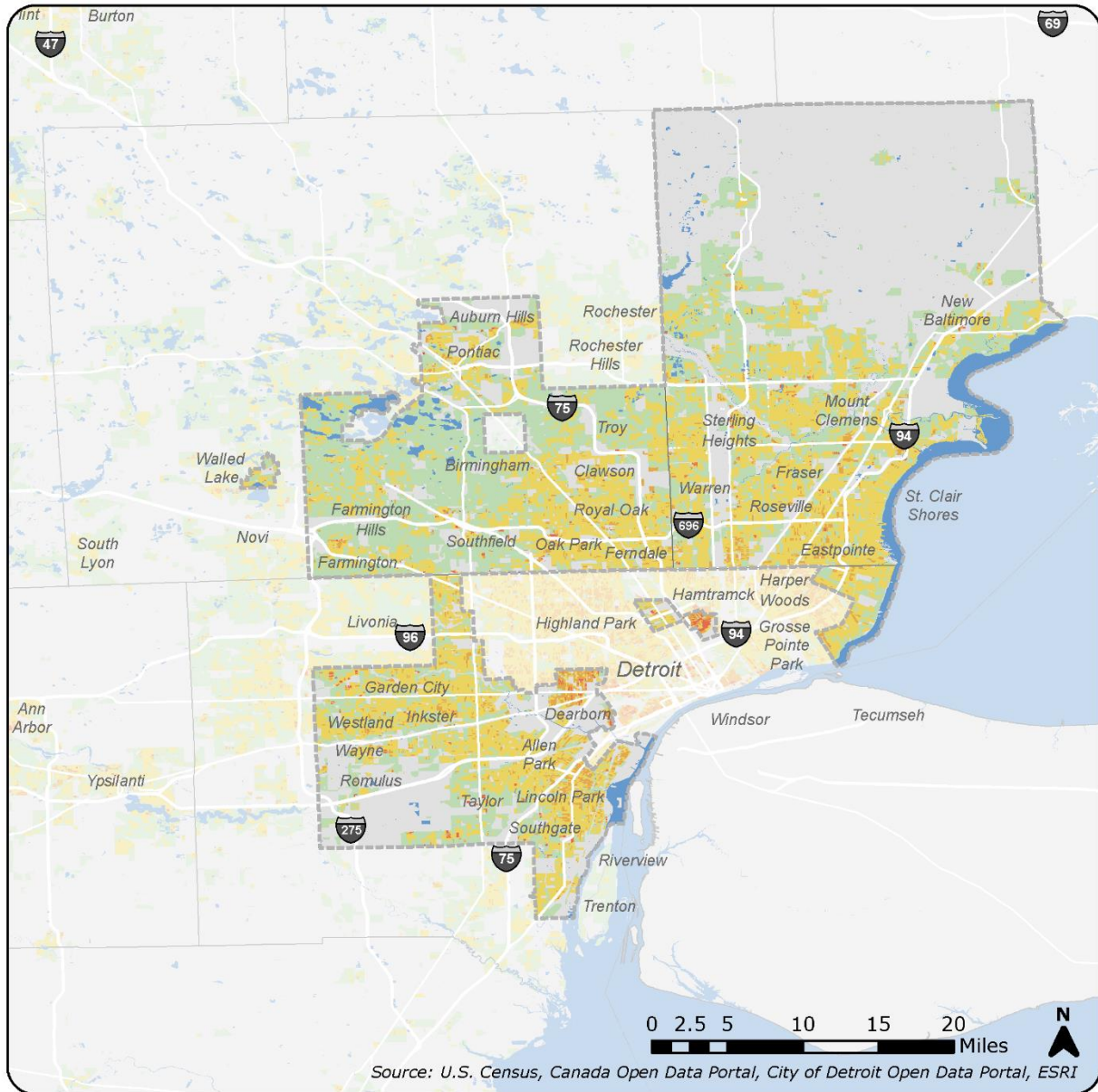
Most public transportation customers will access bus services by walking to a bus stop. Thus, the geographic areas served by transit are generally those within a quarter- or half-mile distance from a bus stop, or a ten-minute walk. As a result, the size of the market for transit is a function of the density of the population living in these areas. In general, at least six persons per acre are needed to support hourly service on fixed-route transit. **Figure 2** illustrates the population density of the SMART service area. Areas in yellow are able to support hourly service, with areas shaded in darker colors able to support higher levels of service.

Areas with moderate to high concentrations of population density include:

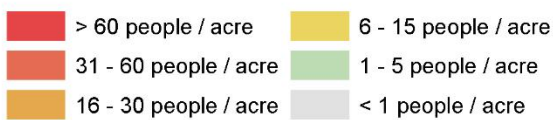
- Dearborn in the area north of Michigan Avenue and east of Greenfield Road
- Portions of Oak Park, Ferndale, and Royal Oak in Oakland County near I-696 and I-75
- Roseville, Eastpointe, Warren, and St. Clair Shores in Macomb County along Gratiot Avenue and Van Dyke Avenue
- Communities in northeastern Wayne County such as Harper Woods and Grosse Pointe Park
- The City of Hamtramck
- Outside the SMART service area: the City of Detroit, especially neighborhoods in and around downtown, Midtown, Elmwood Park, Lafayette Park, Springwells, and other portions of southwest Detroit



Figure 2: Population Density



**Population Density by Census Block**



SMART Opt-In Communities

Water



Source: Decennial Census (2010)



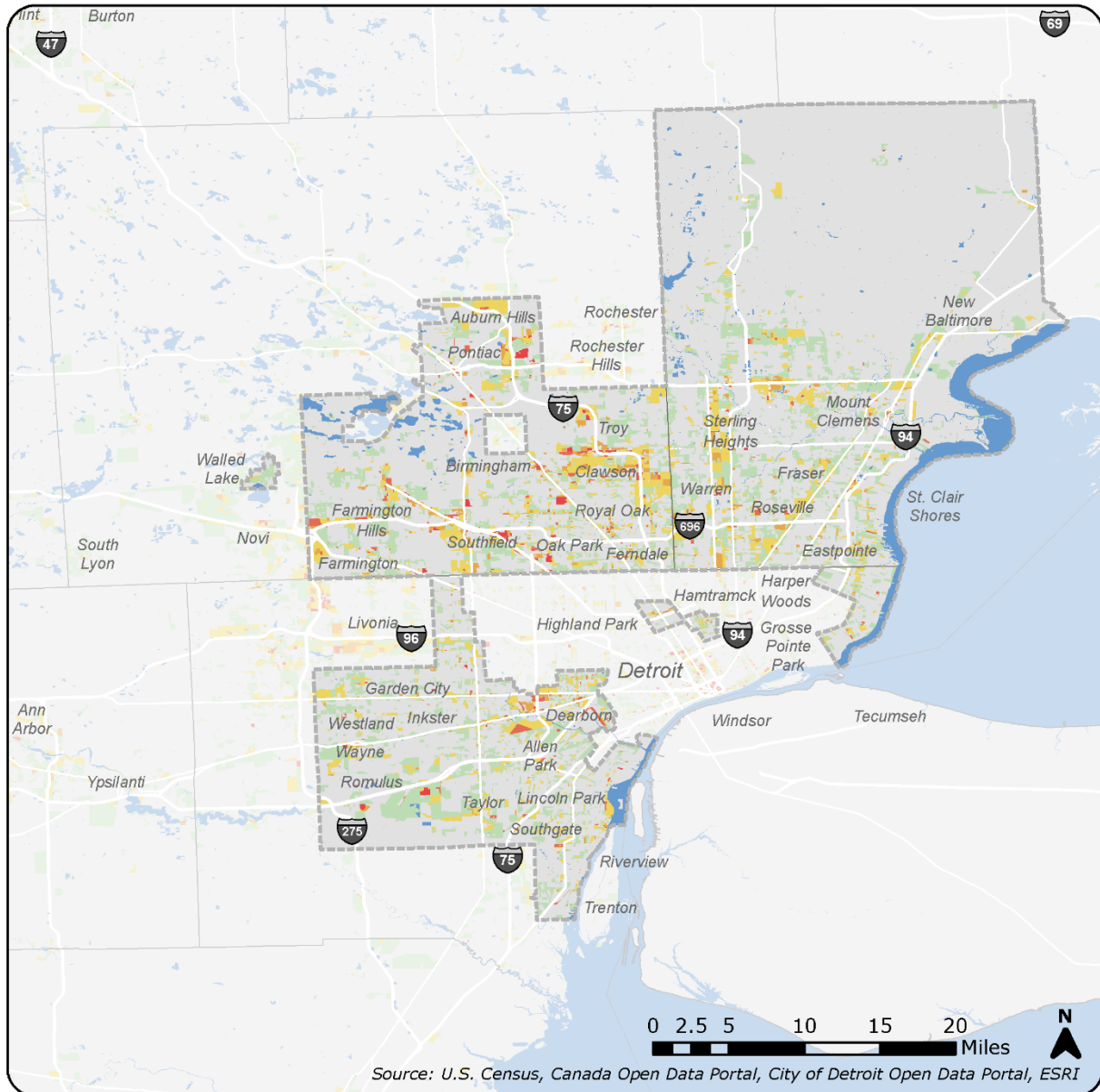
## Employment Density

Employment density is a strong indicator of demand for transit, as most trips by public transportation begin or end at work. Serving employment centers also provides access to job opportunities for residents. As with population density, at least six jobs per acre are typically required for an area to support fixed-route transit service. In **Figure 3**, areas above this threshold are shown in yellow, orange, and red, with darker colors corresponding to higher densities. Areas with higher densities can also support greater transit frequencies.

The most significant concentration of employment density served by SMART is found in Downtown Detroit. Other areas with significant employment density include:

- Dearborn along Michigan Avenue, Southfield Freeway (SR-39), and Ford Rd (SR-153)
- Auburn Hills, Troy, and Clawson along I-75
- Southfield along the John C. Lodge Freeway (SR-10) and Telegraph Road (US-24)
- Sterling Heights and Warren along Van Dyke Avenue (SR-53)
- Other communities in Oakland County, including Pontiac, Farmington Hills, Royal Oak, and Birmingham
- Outside the SMART service area:
  - Livonia along I-96
  - Rochester

Figure 3: Employment Density



**Job Density by Census Block**



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Source: LEHD (2015)

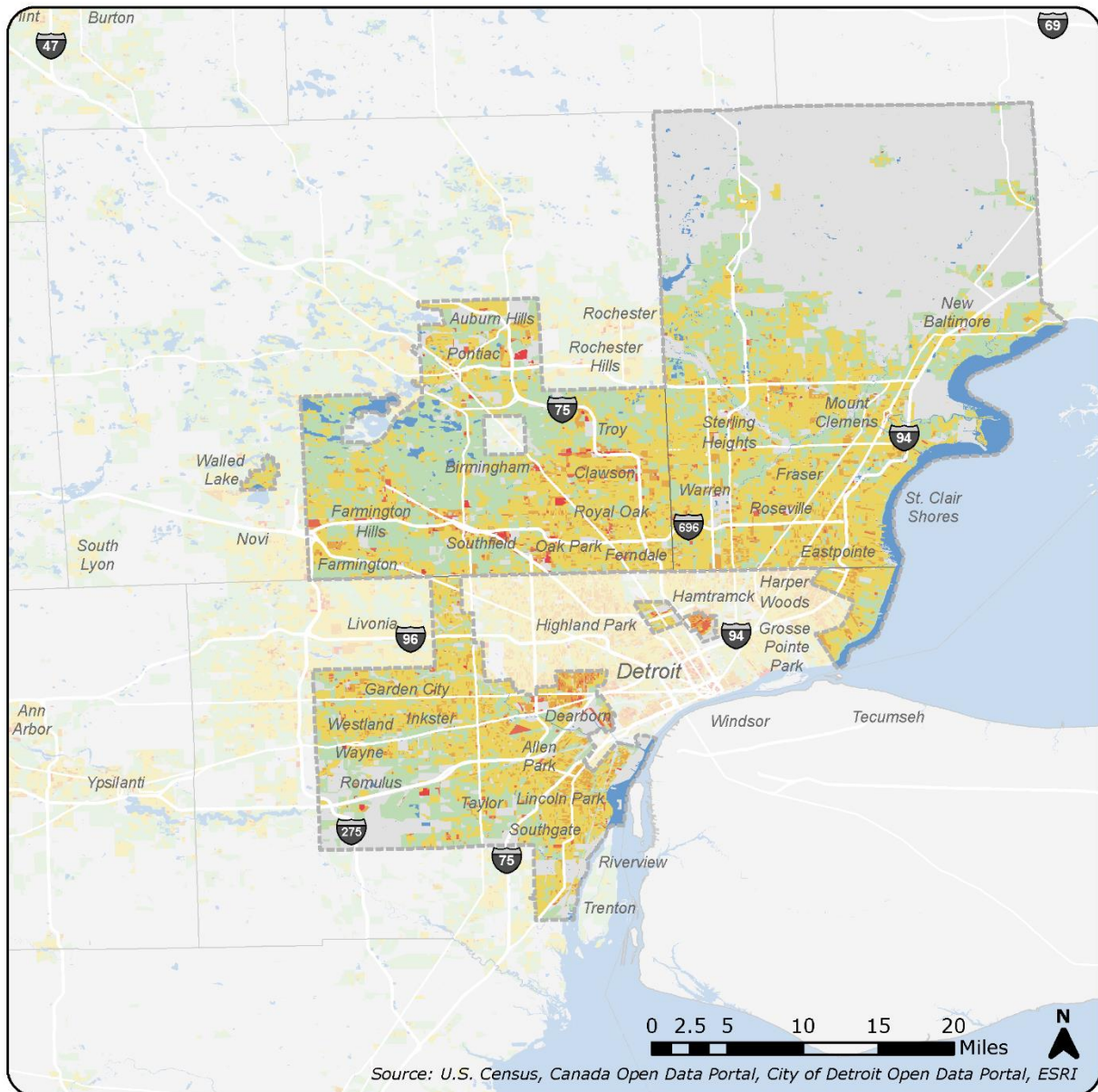
## Transit Potential

The transit potential index, shown in **Figure 4** through **Figure 7**, combines population and employment densities at the Census block group level to indicate the overall viability of transit service in each area.

Areas with consistently high levels of transit potential include:

- Dearborn's job and housing clusters in the central and northeastern portion of the city
- Oakland County's communities along I-696 and I-75
- Commercial corridors along Van Dyke Avenue (SR-53) and Gratiot Avenue (SR-3) in Macomb County
- Cities in Wayne County such as Hamtramck, Lincoln Park, Harper Woods, and Grosse Pointe Park
- Outside the SMART service area:
  - Detroit, especially the city's downtown and midtown
  - Livonia

Figure 4: Transit Potential



**Population and Job Density by Census Block**



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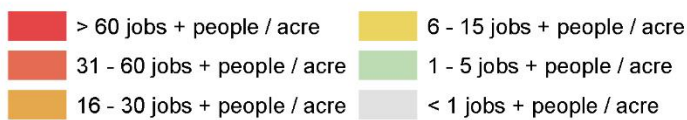
Source: LEHD (2015), Decennial Census (2010)



Figure 5: Transit Potential (Wayne)



**Population and Job Density by Census Block: Wayne County**



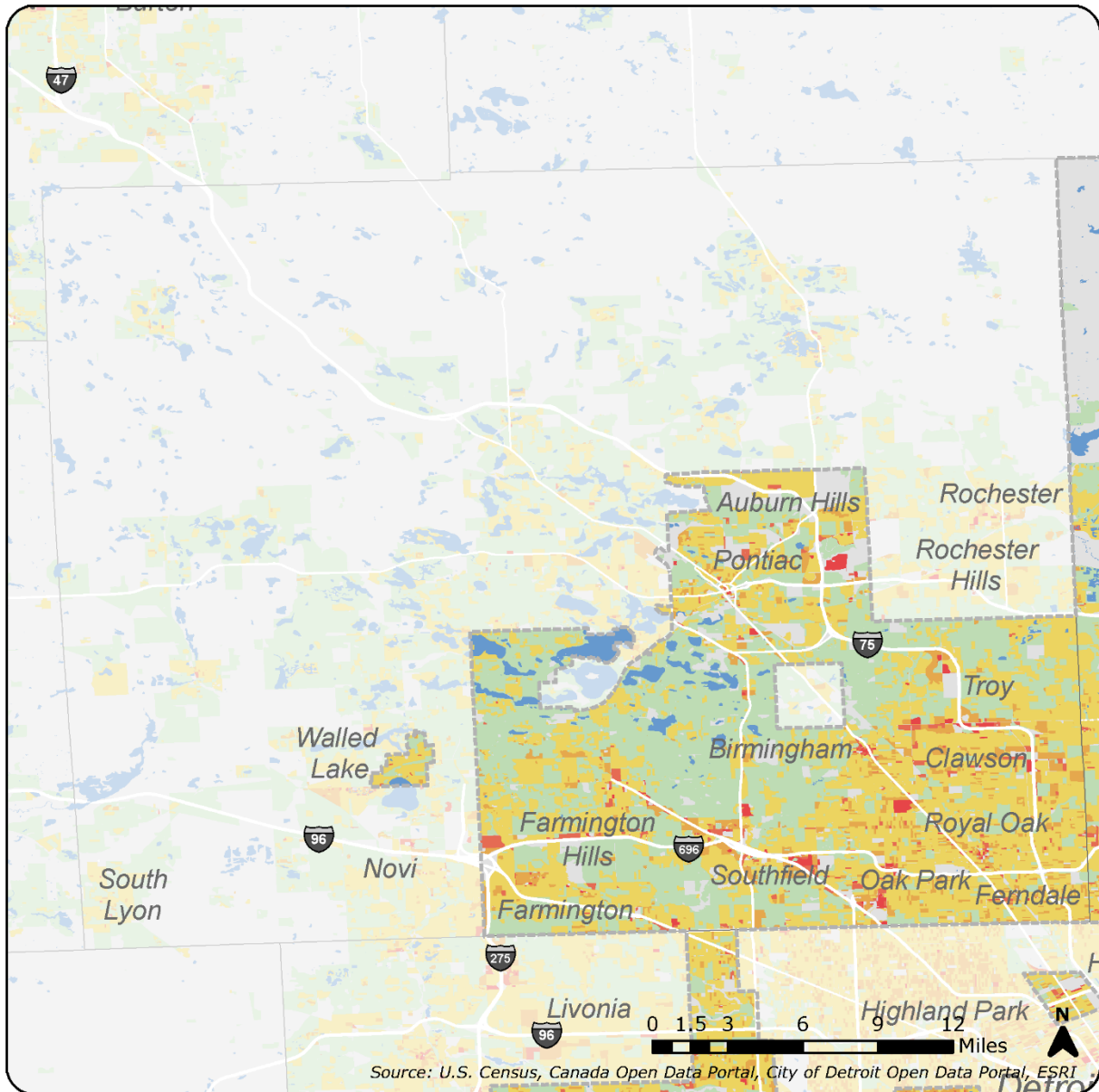
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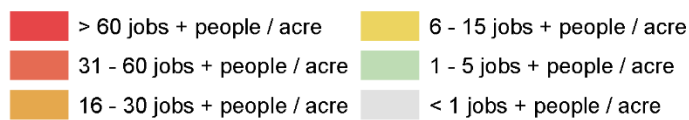


Source: LEHD (2015), Decennial Census (2010)

Figure 6: Transit Potential (Oakland)



**Population and Job Density by Census Block: Oakland County**



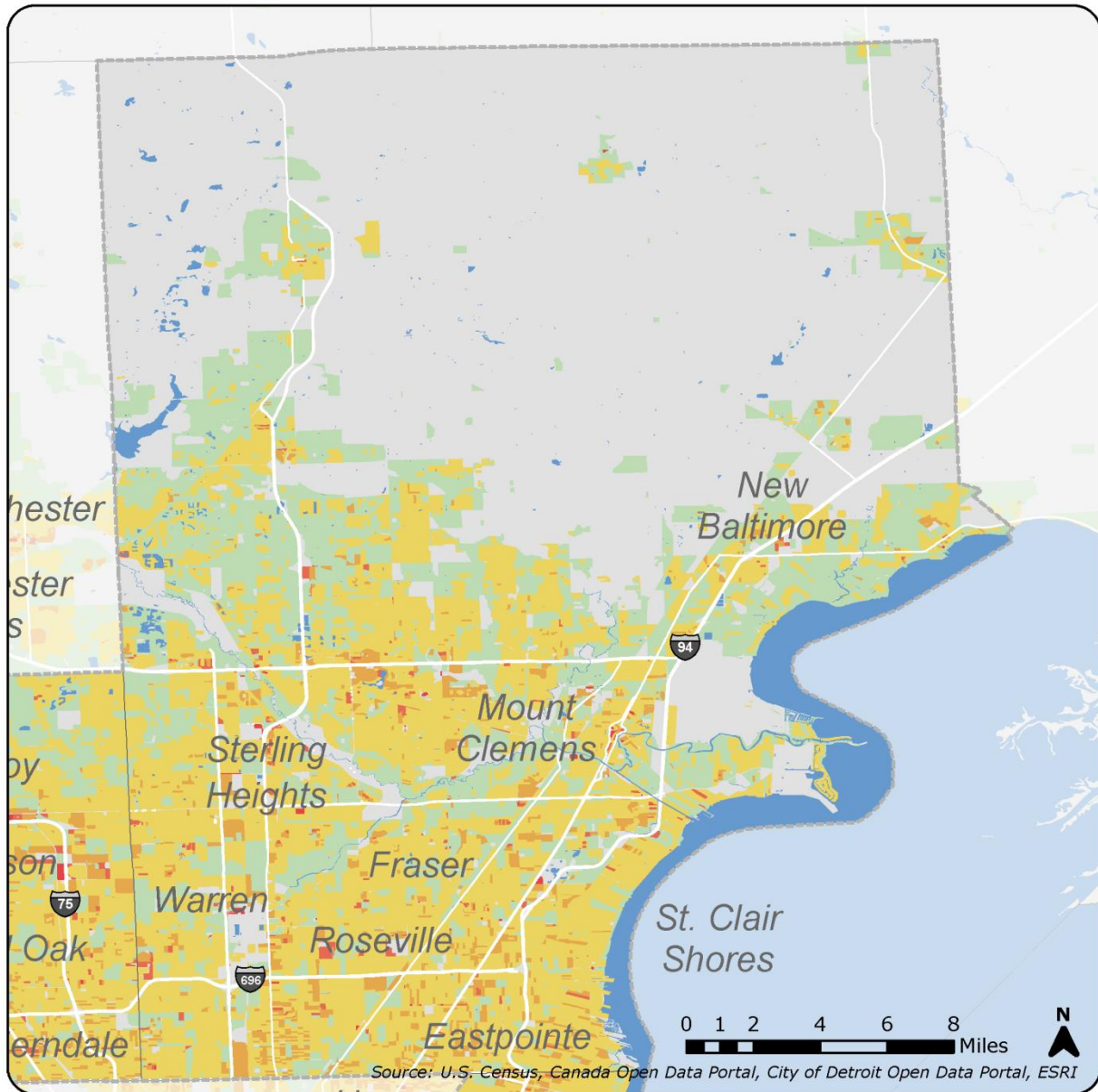
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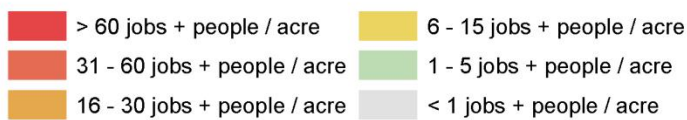


Source: LEHD (2015), Decennial Census (2010)

Figure 7: Transit Potential (Macomb)



**Population and Job Density by Census Block: Macomb County**



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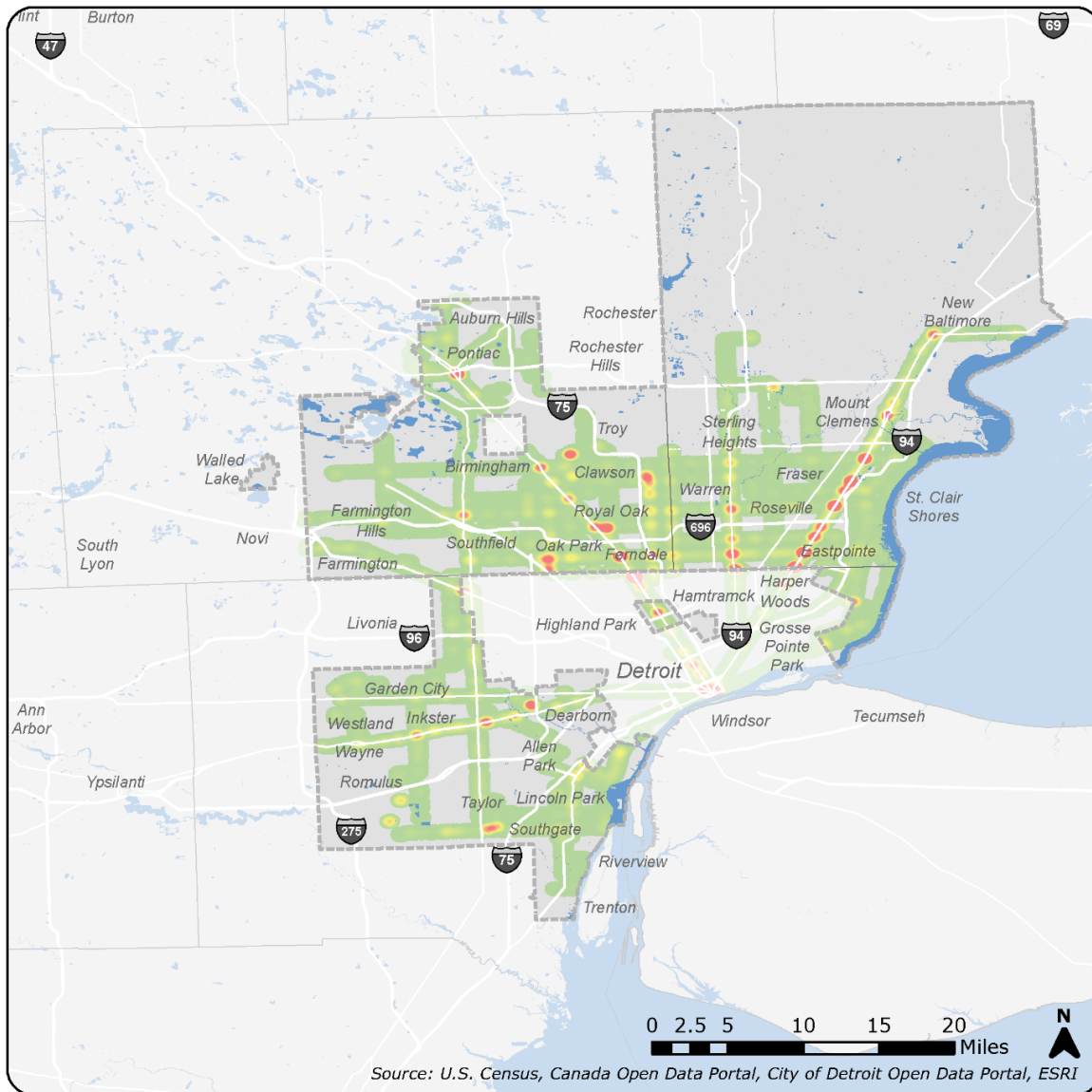


Source: LEHD (2015), Decennial Census (2010)

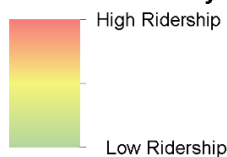


**Figure 8** shows a heatmap of SMART ridership collected via automated passenger counters (APCs) in April 2018. While actual ridership is a function of where service is available, **Figure 8** illustrates that on corridors with transit service, there is a clear correlation between high ridership and high transit potential (see **Figure 4**) particularly along the Gratiot Avenue (SR-3), Woodward Avenue (SR-1), and Van Dyke Avenue (SR-53) corridors and in Dearborn and Pontiac job centers.

**Figure 8: SMART Ridership Heat Map**



### SMART Weekday Ridership Heatmap



Source: SMART Ridership (2018)

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## 2.2 TRANSIT NEED

While some people use transit service as a way to commute only to and from their workplace during peak hours, others use transit service all day to not only get to and from their workplace but also to and from other services such as shopping and medical appointments. Many peak-hour-only transit users have access to a vehicle to make non-work trips on weekends or during off-peak hours, while all-day transit users ride transit for all their travel needs because they do not have access to an automobile. The latter group are analyzed in the Transit-Oriented Populations Index, while the more traditional commuters described in the former are analyzed in the Commuter Index.

### Transit-Oriented Populations Index

Public transportation is an important mobility tool, especially for those populations that have a higher propensity to use transit as their primary means of transportation. These groups include:

- **Households without access to a vehicle.** Families that lack access to a vehicle either for financial or legal reasons often have few mobility options other than public transportation.
- **Persons with disabilities.** Individuals who are unable to or have difficulty operating a motor vehicle are especially likely to use public transportation services.
- **Low-income individuals.** Because using transit is often less expensive than owning a car, individuals in low-income households are more likely to rely on transit.
- **Young people.** Individuals younger than 24 may not have access to or the ability to operate a vehicle, and tend to rely on transit and other alternatives for their mobility needs.
- **Older adults.** As individuals age, they may be less willing or able to operate a motor vehicle.

Areas with higher concentrations of these populations are also likely to have a higher need for transit services.

The maps in **Figure 9** through **Figure 13** show the relative density of each of the five high-transit-propensity population measures by Census block group. The maps use a Jenks (Natural Breaks) classification method to assign each block group to one of five density categories. The density ranges differ for each demographic measure, as some measure individuals while others measure households; some populations are also simply more common (e.g. low-income populations) than others (e.g. zero-vehicle households).

For each demographic measure, a score between one and five is assigned to each block group depending on the natural break category that it falls into. If a block group falls into the highest density category for a demographic measure, it is assigned five points for that measure. Block groups that fall into the lowest density natural break category for a particular population measure receive one point for that analysis.

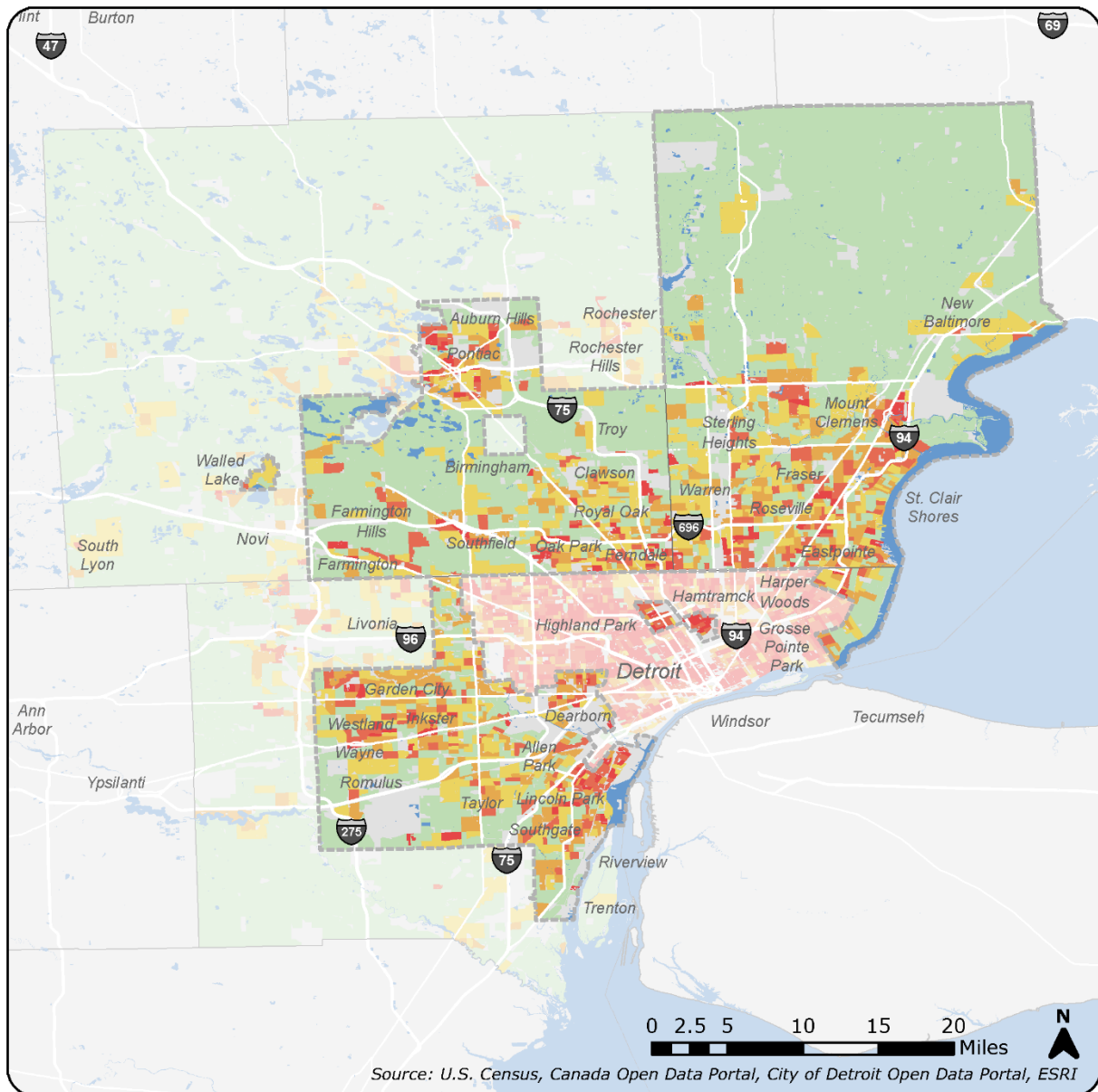
The Transit-Oriented Populations Index (**Figure 14** through **Figure 17**) shows the composite transit-oriented population score for each block group based on the sum of scores in each individual demographic measure. If a block group falls in the highest density category for each of the five demographic measures, it will receive a Transit-Oriented Populations Index score of 25 points (5+5+5+5+5). The lowest possible Transit-Oriented Populations Index score is 5 points (1+1+1+1+1).

Based on this index, the areas with the highest concentrations of transit-oriented populations include:

- Cities in Wayne County along Fort St (SR-85) including Lincoln Park and Southgate, along Ford Rd (SR-153) including Dearborn and Garden City, and along Michigan Ave (US-12) including Inkster and Wayne
- Southeastern Oakland County along I-75 and I-696, including Oak Park, Ferndale, Hazel Park, and Madison Heights
- Portions of Macomb County communities along Van Dyke Avenue (SR-53), Gratiot Avenue (SR-3), and Groesbeck Highway (SR-97), such as Warren, Sterling Heights, Eastpointe, Roseville, and Mount Clemens

While transit-oriented population can be a significant factor to consider when planning fixed-route transit services, concentrations of these populations alone are not sufficient to support transit services. Overall transit potential—adequate population and employment density—remains essential for ensuring a sufficient number of potential riders exist to support fixed-route transit services.

Figure 9: Zero-Vehicle Household Density



**Zero-Vehicle Household Density (Score)**

- 0.81 - 15.70 households / acre (5 points)
- 0.36 - 0.80 households / acre (4 points)
- 0.17 - 0.35 households / acre (3 points)
- 0.07 - 0.16 households / acre (2 points)
- 0.01 - 0.06 households / acre (1 point)

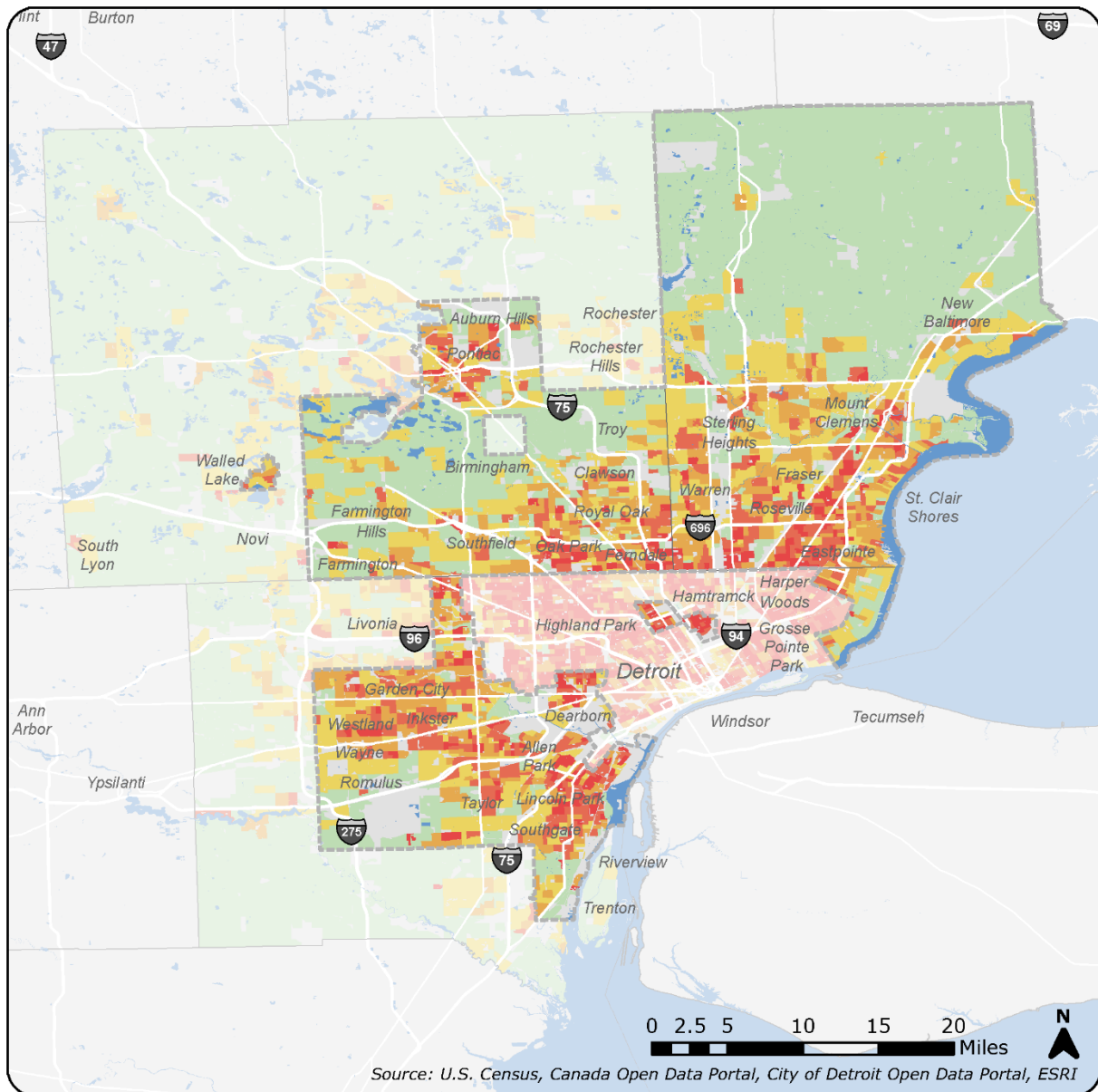
Source: ACS (2016)

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Figure 10: Persons with a Disability Density



**Persons with Disabilities Population Density (Score)**

- 1.18 - 10.33 people / acre (5 points)
- 0.63 - 1.17 people / acre (4 points)
- 0.35 - 0.62 people / acre (3 points)
- 0.16 - 0.34 people / acre (2 points)
- 0.01 - 0.15 people / acre (1 point)

Source: ACS (2016)

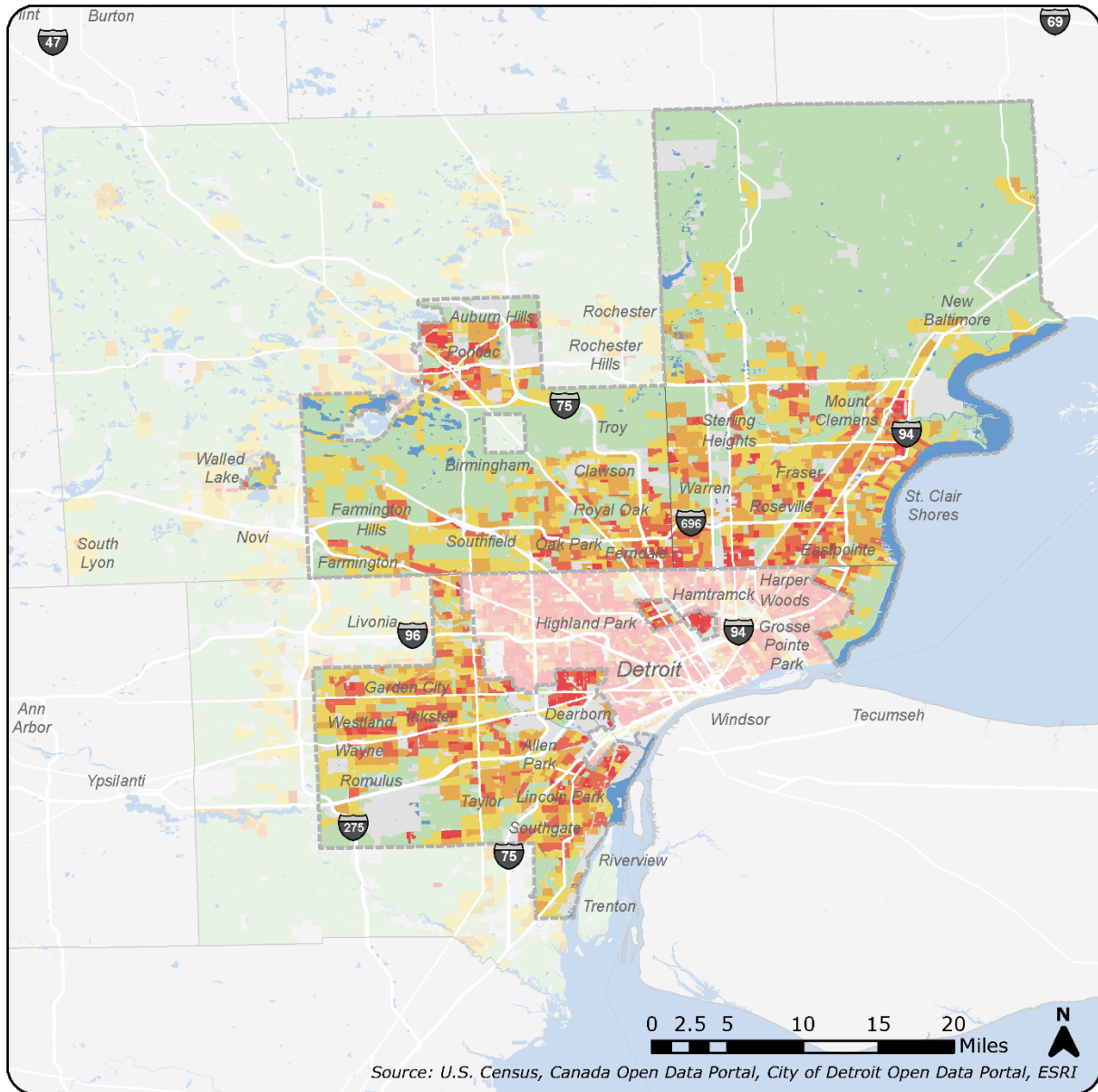
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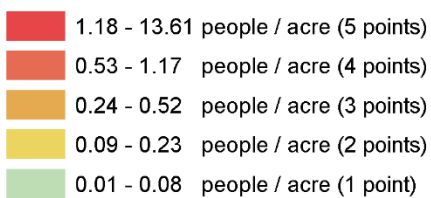




Figure 11: Low-Income Population Density



**Low-Income Population Density (Score)**



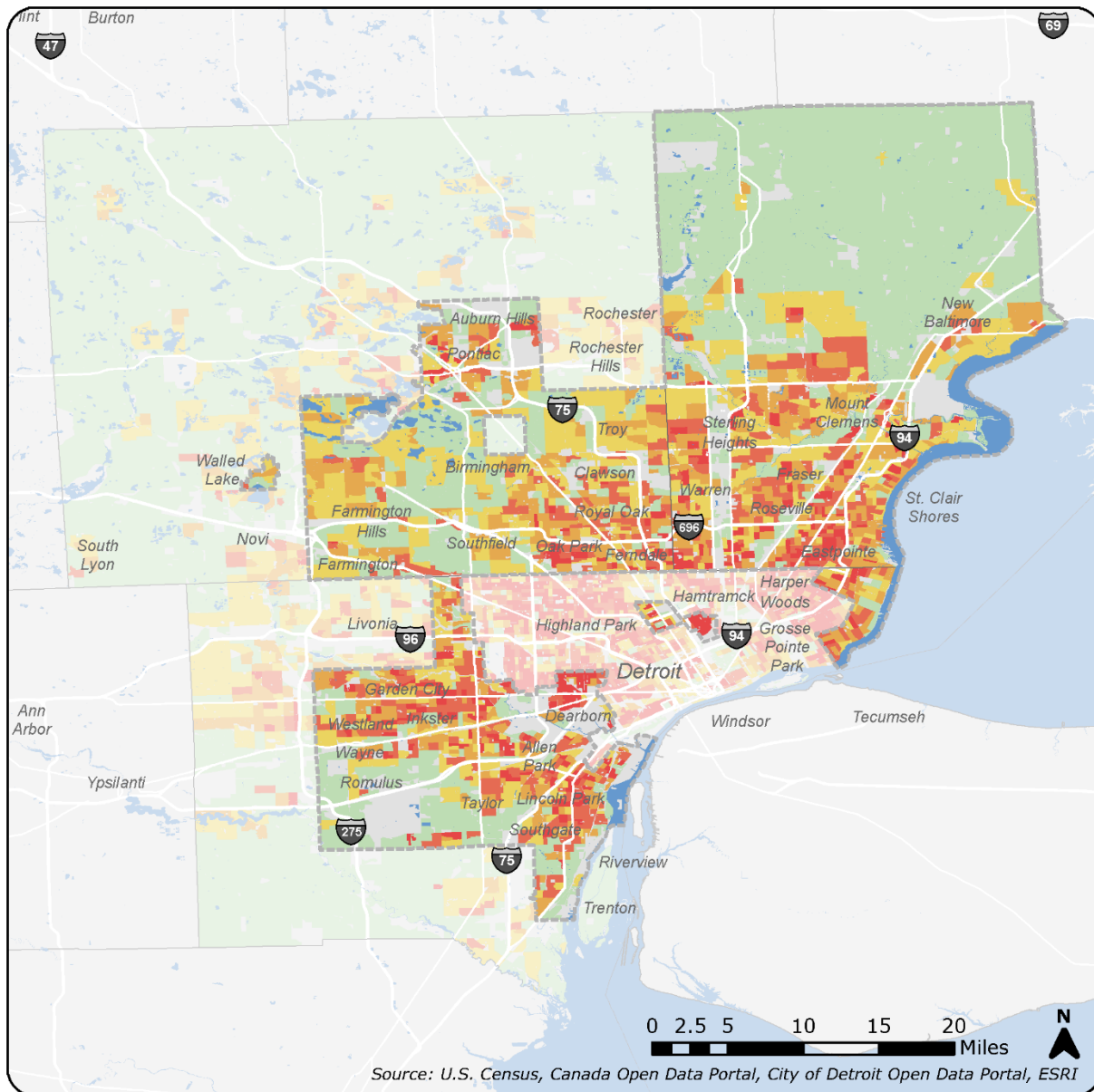
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Source: ACS (2016), Population Living in Households at or below 150 Percent of the Poverty Line



Figure 12: Youth / Young Adult Population Density



**Youth / Young Person Population Density (Score)**

- 2.36 - 16.25 people / acre (5 points)
- 1.43 - 2.35 people / acre (4 points)
- 0.93 - 1.42 people / acre (3 points)
- 0.52 - 0.92 people / acre (2 points)
- 0.01 - 0.51 people / acre (1 point)

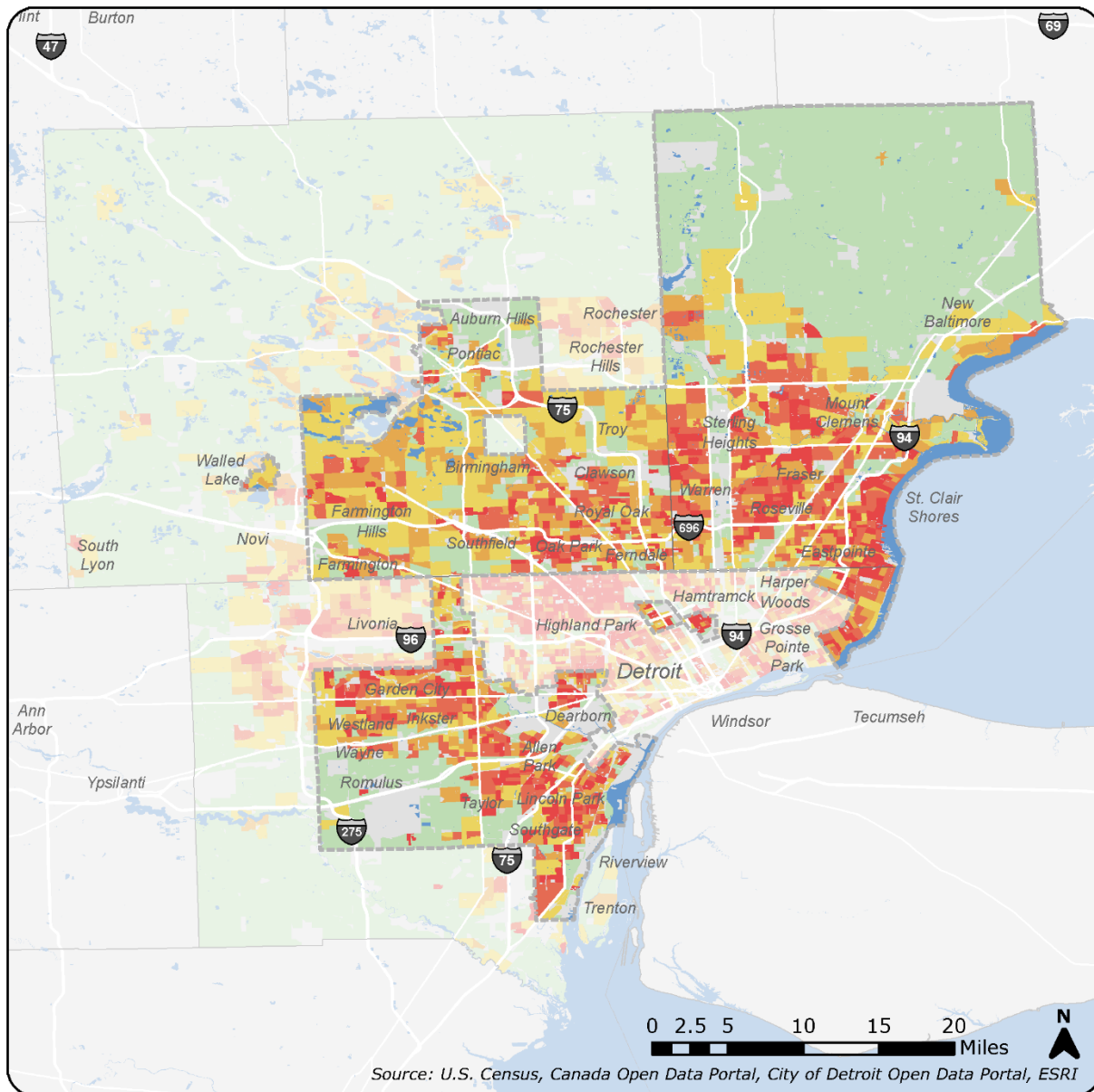
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Source: ACS (2016), Youth / Young Adult Defined as 10 to 24 Years Old

Figure 13: Older Adult Population Density



**Older Adult Population Density (Score)**

- 1.56 - 8.65 people / acre (5 points)
- 1.06 - 1.55 people / acre (4 points)
- 0.71 - 1.05 people / acre (3 points)
- 0.39 - 0.70 people / acre (2 points)
- 0.01 - 0.38 people / acre (1 point)

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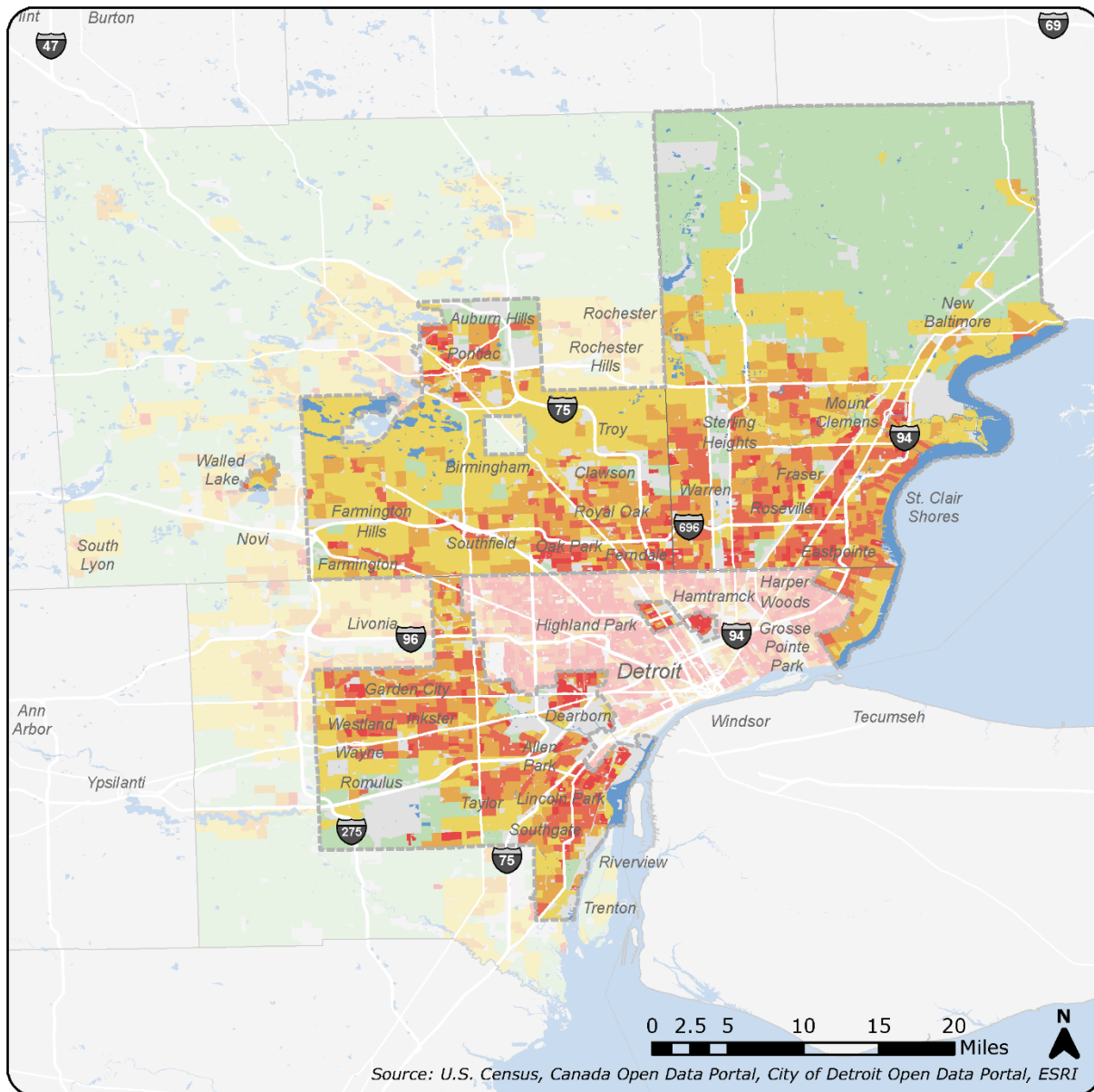
Water



Source: ACS (2016), Older Adult Defined as 65 Years of Age or Older



Figure 14: Transit-Oriented Populations Index



### Transit-Oriented Populations Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

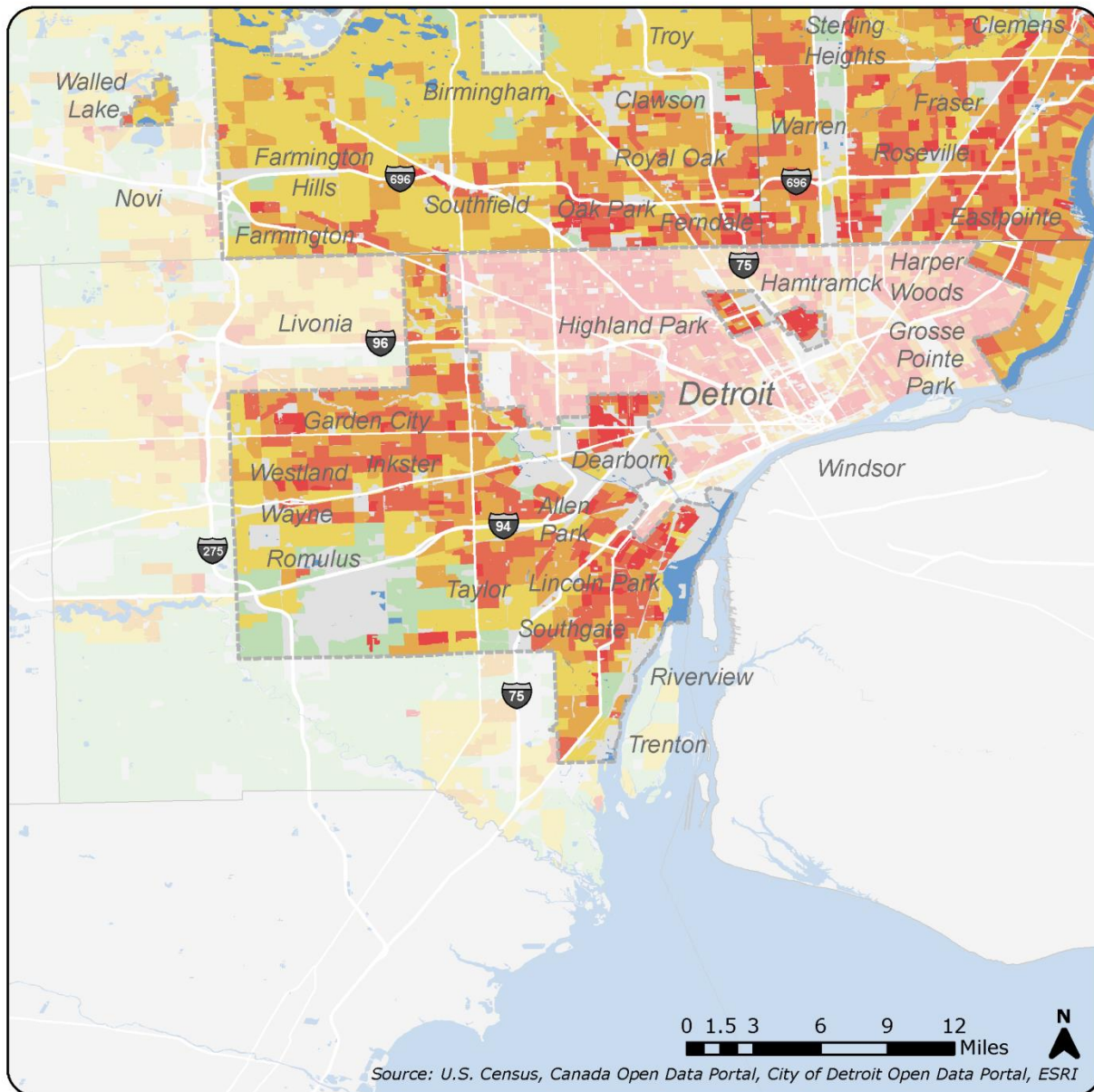
The Transit-Oriented Populations Index is a five-variable composite score based on the combined density of zero-vehicle households, persons with disabilities, low-income individuals, youth / young adults, and older adults.  
Source: ACS (2016), LEHD (2015)

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Figure 15: Transit -Oriented Populations Index (Wayne)



### Transit-Oriented Populations Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

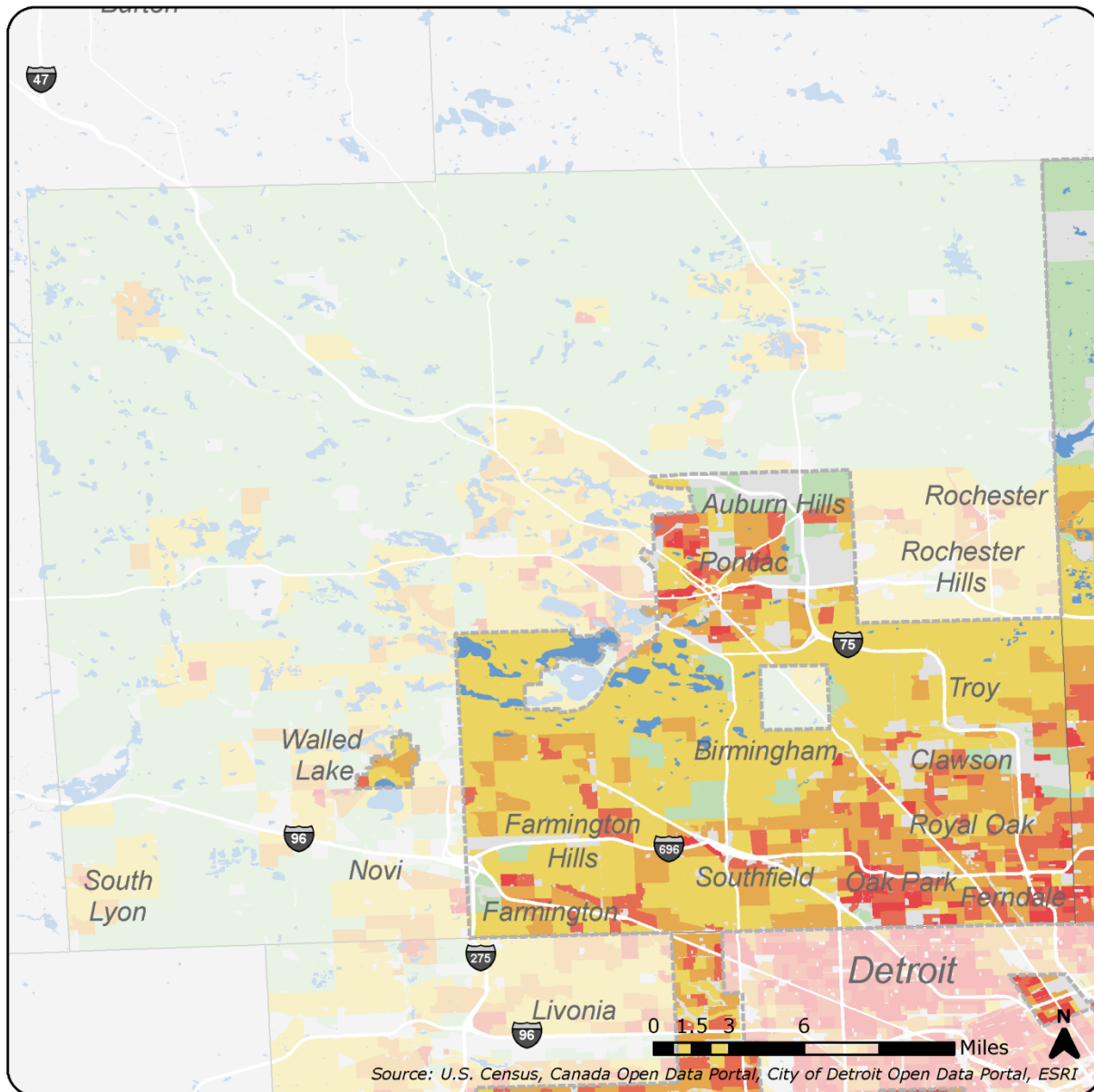
The Transit-Oriented Populations Index is a five-variable composite score based on the combined density of zero-vehicle households, persons with disabilities, low-income individuals, youth / young adults, and older adults.  
Source: ACS (2016), LEHD (2015)

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Figure 16: Transit -Oriented Populations Index (Oakland)



### Transit-Oriented Populations Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

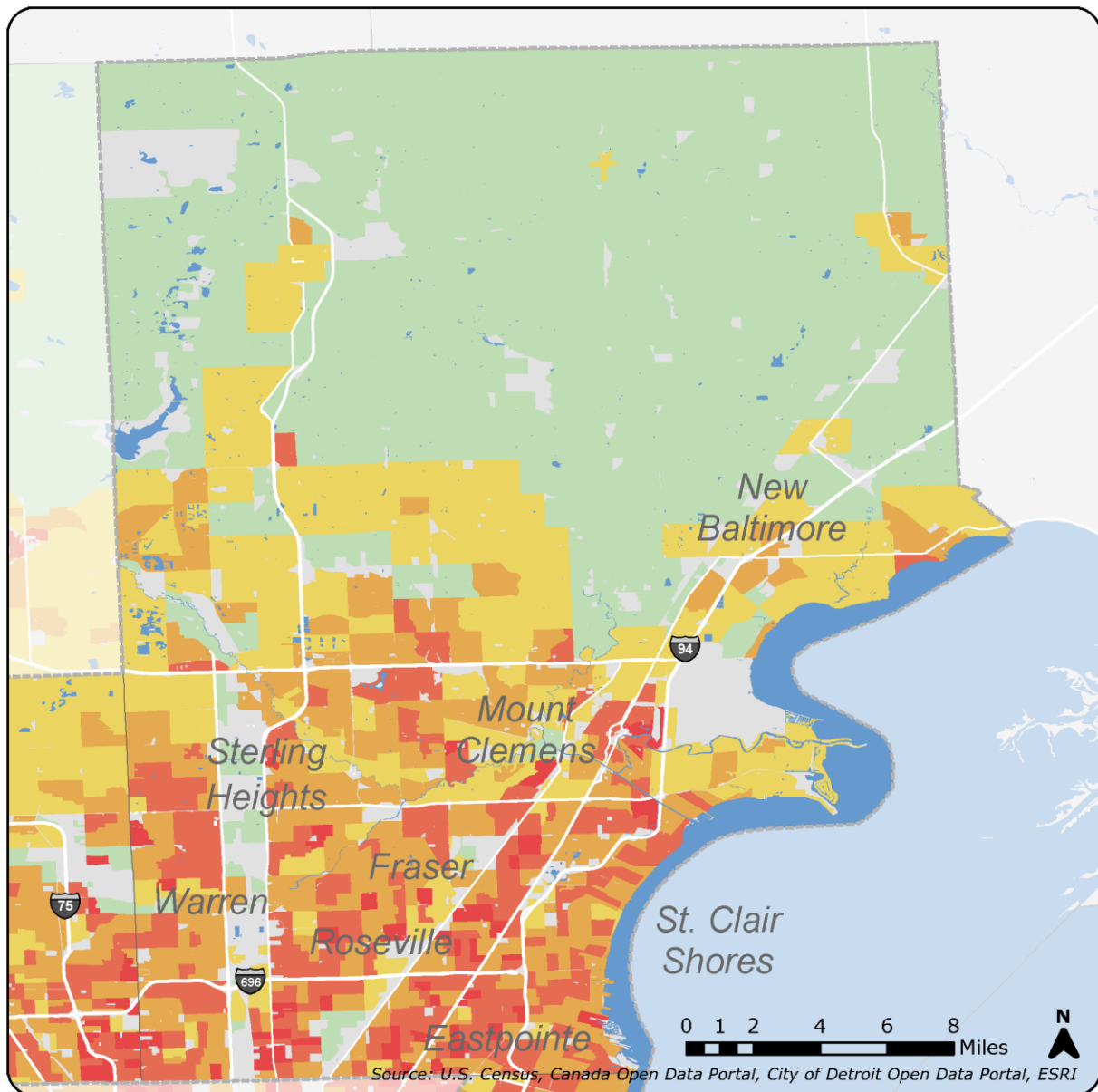
The Transit-Oriented Populations Index is a five-variable composite score based on the combined density of zero-vehicle households, persons with disabilities, low-income individuals, youth / young adults, and older adults.  
Source: ACS (2016), LEHD (2015)

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Figure 17: Transit -Oriented Populations Index (Macomb)



### Transit-Oriented Populations Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

The Transit-Oriented Populations Index is a five-variable composite score based on the combined density of zero-vehicle households, persons with disabilities, low-income individuals, youth / young adults, and older adults.  
Source: ACS (2016), LEHD (2015)

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## Commuter Index

The Commuter Index identifies the residential areas with the highest concentrations of commuters, with special emphasis given to areas that already have high concentrations of commuters who use transit. Like other indices, the Commuter Index scores areas on several criteria, with scores then combined into an overall composite index. The measures used include:

- Commuters
- Non-Single Occupancy Vehicle (Non-SOV) Commuters

Unlike indices that use population density, these measures indicate areas with high numbers of employed, working-age persons who work outside the home. Therefore, the areas with high scores in this index are most suitable for commuter services.

The maps in **Figure 18** and **Figure 19** show the density of the two commuter measures by Census block group. The maps use a Jenks (Natural Breaks) classification method to assign each block group to one of five density categories. The density ranges differ for each demographic measure, as non-Single Occupancy Vehicle commuters are a small percentage of commuters overall.

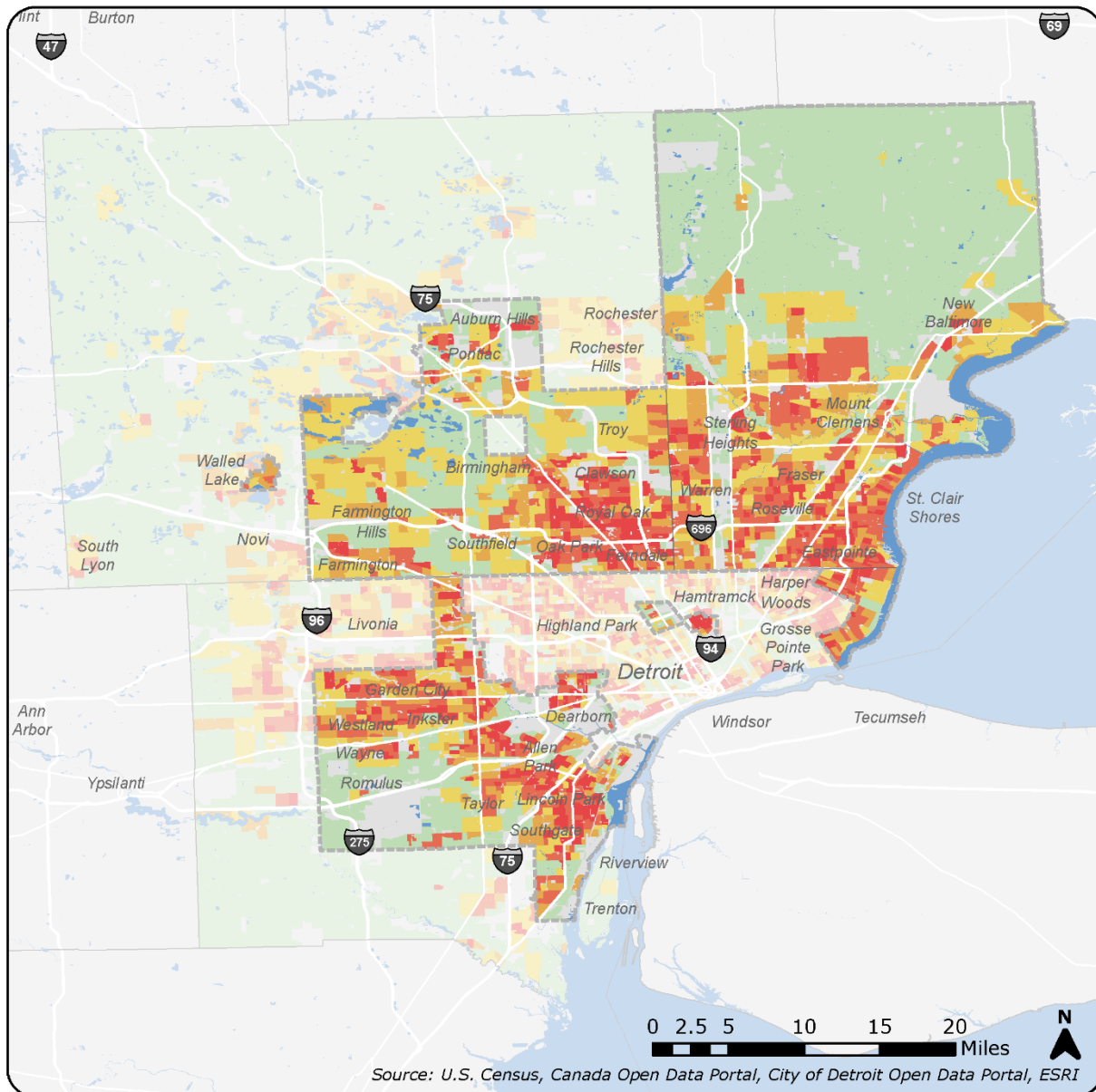
For each demographic measure, a score between one and five is assigned to each block group depending on the natural break category that it falls into. If a block group falls into the highest density category for a demographic measure, it is assigned five points for that measure. Block groups that fall into the lowest density natural break category for a particular measure receive one point for that analysis.

The Commuter Index (**Figure 20** through **Figure 23**) shows the composite Commuter score for each block group based on the sum of its scores in each individual commuter measure. If a block group falls in the highest density category for each of the five demographic measures, it will receive a Commuter Index value of 10 points (5+5). The lowest possible Commuter Index value is 2 points (1+1).

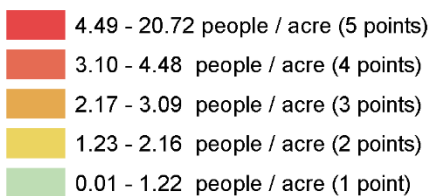
Based on this index, the areas with the highest Commuter Index scores include:

- Wayne County communities Lincoln Park and Southgate along Fort Street (SR-85) and Garden City and Inkster along Ford Road (SR-153)
- Oakland County communities along I-696 and Woodward Avenue (SR-1), including Royal Oak, Clawson, Oak Park, Ferndale, and Southfield
- Macomb County communities of St. Clair Shores, Eastpointe, Roseville, Center Line, and Sterling Heights along Gratiot Avenue (SR-3), Groesbeck Highway (SR-97), and I-94

Figure 18: Commuters



**Commuter Density (Score)**



Source: LEHD (2015)

SMART Opt-In Communities

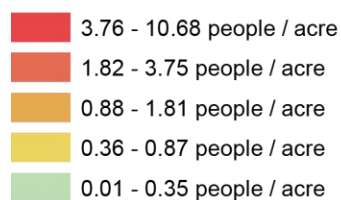
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Figure 19: Non-Single Occupancy Vehicle Commuters



### Non-SOV Commuter Density (Score)



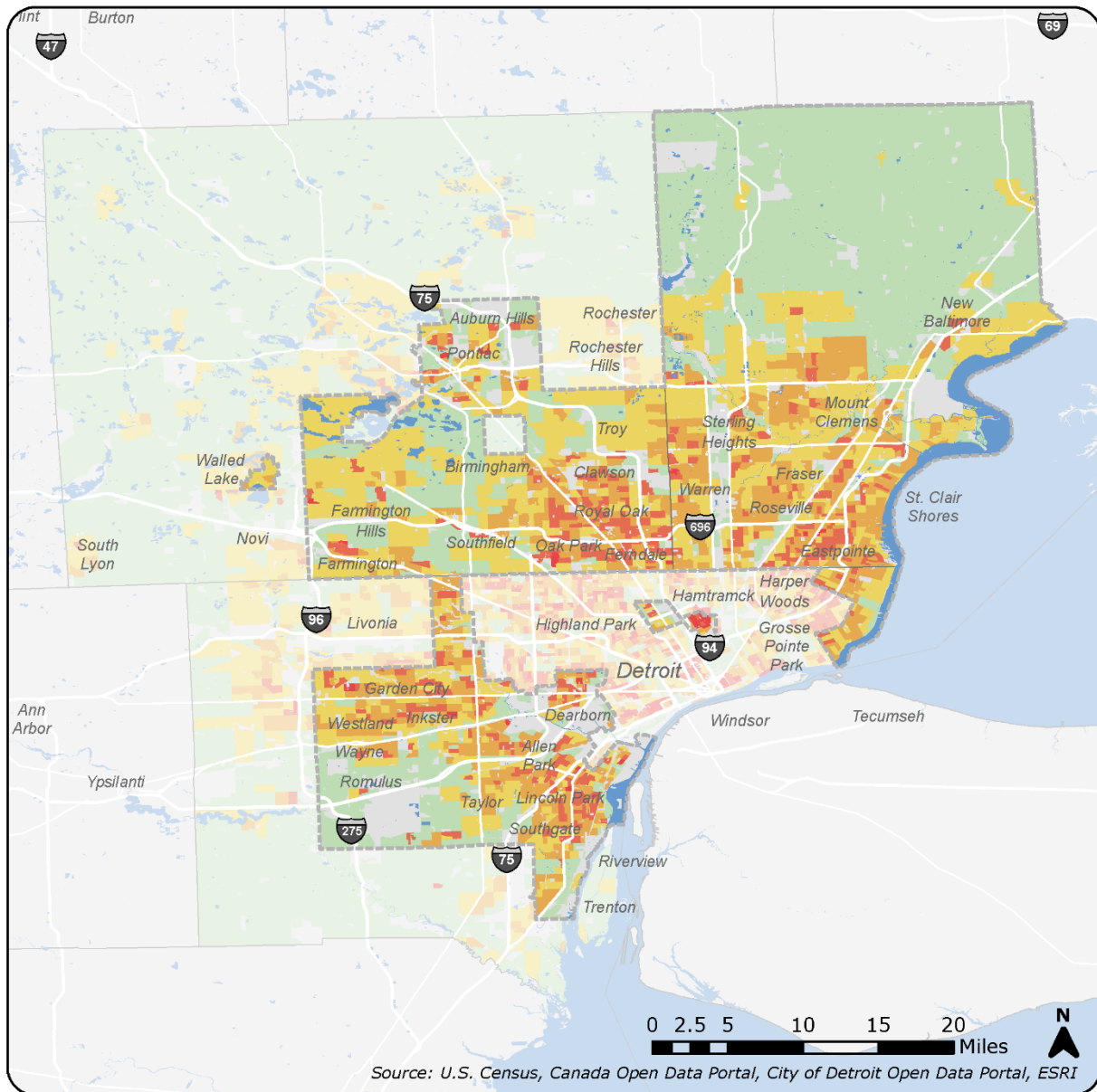
Source: ACS (2016), Non-SOV Commuter defined as a person who does not drive alone, take a taxi, or use a motorcycle to commute to work.

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Figure 20: Commuter Index



### Commuter Index Two Variable Composite Score

- 9 - 10 points
- 7 - 8 points
- 5 - 6 points
- 3 - 4 points
- 1 - 2 points

The Commuter Index is a two-variable composite score based on the combined density of commuters and non-SOV commuters. Source: ACS (2016)

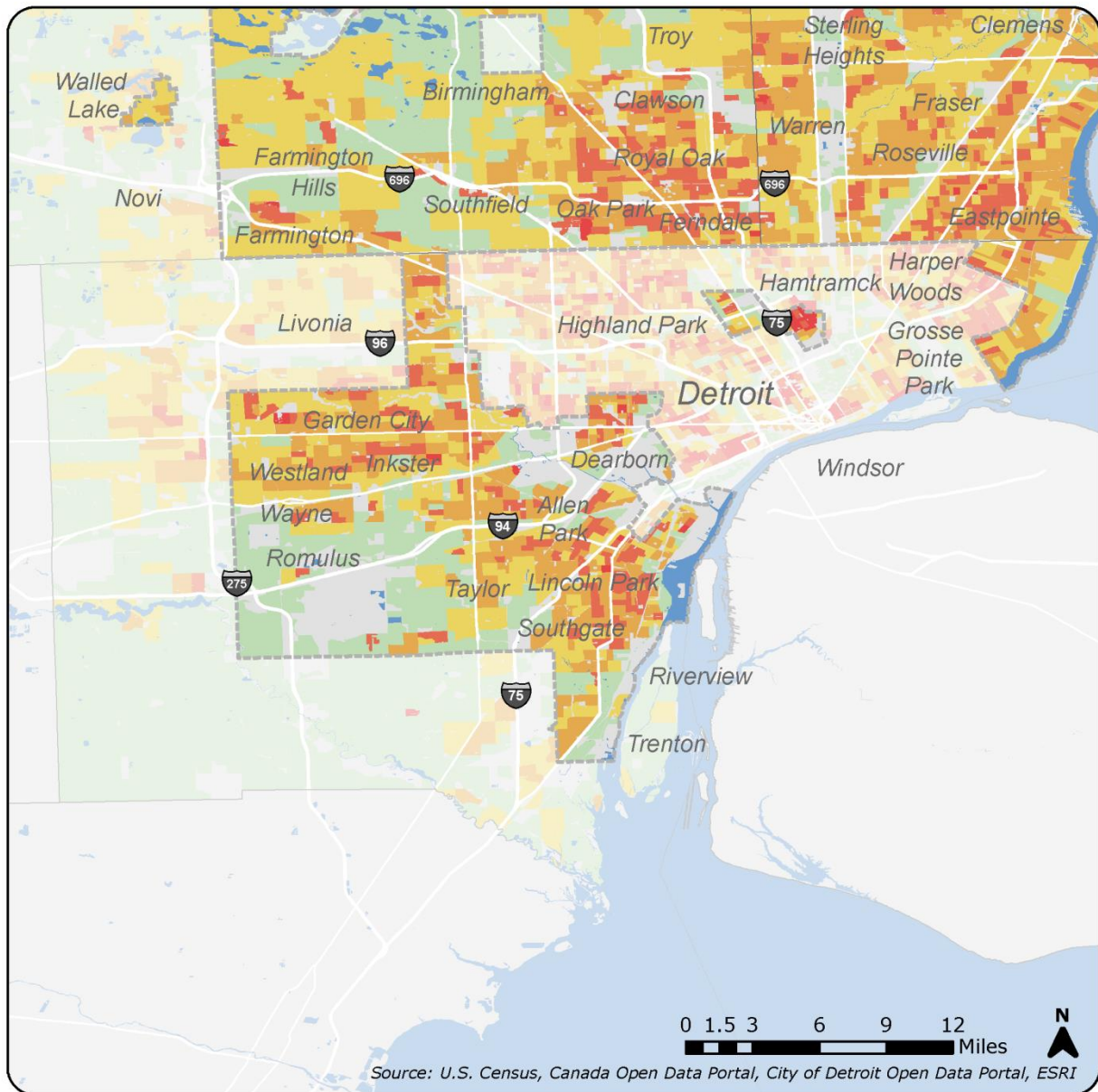
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Figure 21: Commuter Index (Wayne)



**Commuter Index Two Variable Composite Score**

- 9 - 10 points
- 7 - 8 points
- 5 - 6 points
- 3 - 4 points
- 1 - 2 points

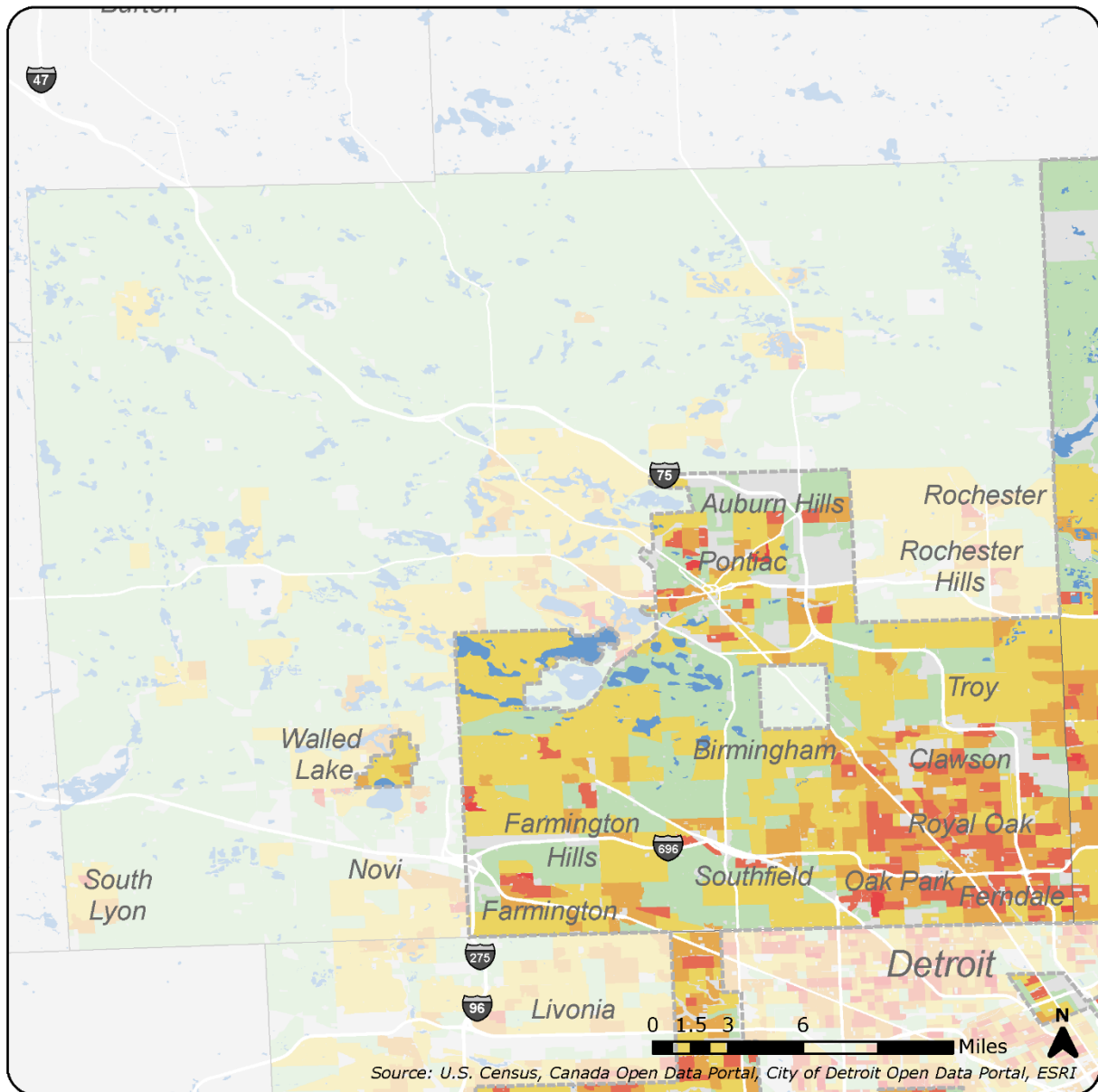
The Commuter Index is a two-variable composite score based on the combined density of commuters and non-SOV commuters. Source: ACS (2016)

SMART Opt-In Communities

Water



Figure 22: Commuter Index (Oakland)



### Commuter Index Two Variable Composite Score

- 9 - 10 points
- 7 - 8 points
- 5 - 6 points
- 3 - 4 points
- 1 - 2 points

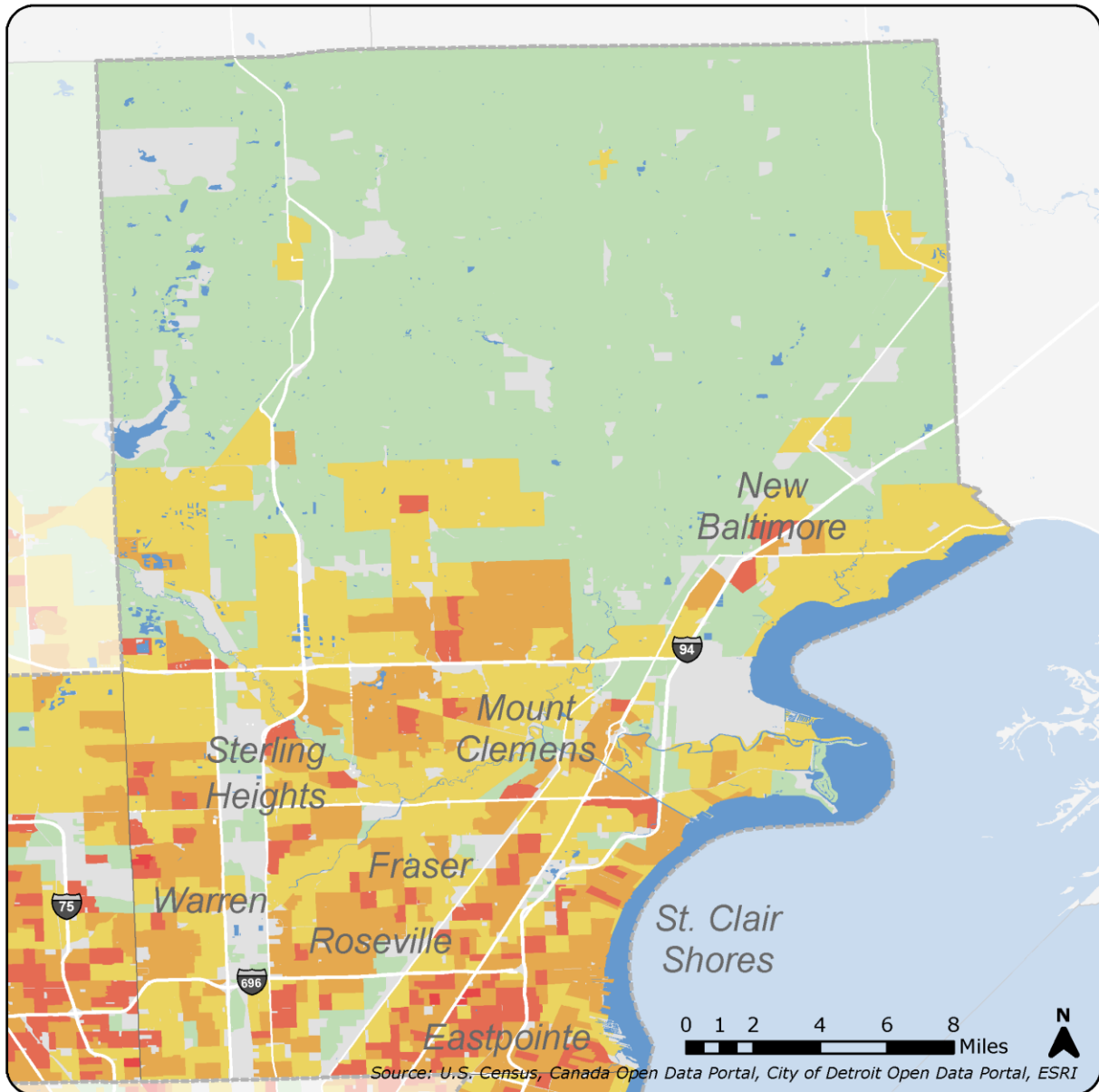
The Commuter Index is a two-variable composite score based on the combined density of commuters and non-SOV commuters. Source: ACS (2016)

SMART Opt-In Communities

Water



Figure 23: Commuter Index (Macomb)



**Commuter Index Two Variable Composite Score**

- 9 - 10 points
- 7 - 8 points
- 5 - 6 points
- 3 - 4 points
- 1 - 2 points

The Commuter Index is a two-variable composite score based on the combined density of commuters and non-SOV commuters. Source: ACS (2016)

SMART Opt-In Communities

Water



## 2.3 ACTIVITY CENTER AND TRAVEL ANALYSIS

In general, transit users want to access the same regional destinations as travelers who use other modes. In most communities, the majority of transit trips are either work-related or have destinations at key activity centers such as shopping centers, educational institutions, medical facilities, and community centers. This section summarizes where services are concentrated in the study area and the major travel patterns in the study area.

### Services Index

The Services Index identifies the locations with the highest concentrations of activity centers, or destinations where residents access basic services. Like the Transit-Oriented Populations Index, the Services Index scores areas across several criteria, with scores combined into an overall index. The measures used include:

- Retail & restaurant employment
- Education employment
- Government employment
- Healthcare employment
- Recreation employment

These five measures indicate the concentration of activity in these sectors for a particular location. For example, an area with high retail and restaurant employment is likely to also be a destination for individuals making non-work trips for such services. Moreover, these sectors also include low-income jobs that are important to serve with transit.

The maps in **Figure 24** through **Figure 28** show the density of each of the five employment measures by Census block group. The maps use a Jenks (Natural Breaks) classification method to assign each block group to one of five density categories. The density ranges differ for each employment measure, as jobs in some industries are more common (e.g., retail and restaurant) than others (e.g., recreation).

For each employment measure, a score between one and five is assigned to each block group depending on the natural break category that it falls into. If a block group falls into the highest density category for a employment measure, it is assigned five points for that measure. Block groups that fall into the lowest density natural break category for a particular employment measure receive one point for that analysis.

The Services Index (**Figure 29** through **Figure 32**) shows the composite Services Index score for each block group based on the sum of scores in each individual demographic measure. If a block group falls in the highest density category for each of the five employment areas, it will receive a Services Index score of 25 points (5+5+5+5+5). The lowest possible Services Index score is 5 points (1+1+1+1+1).

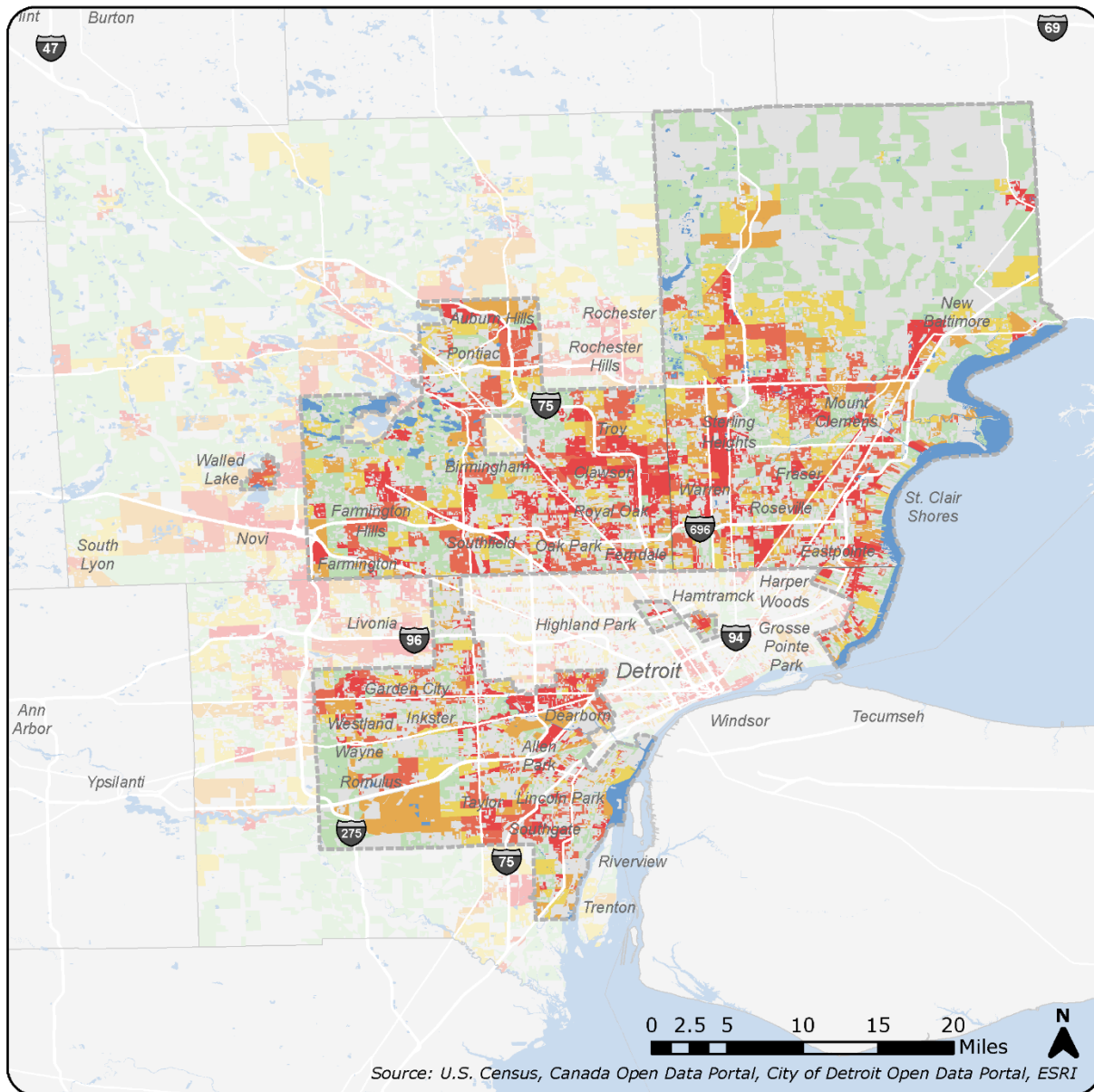


Based on this index, the areas with the highest concentrations of services include:

- Hamtramck
- Wayne County communities such as Westland near I-275 and Ford Road (SR-153), Taylor along Telegraph Avenue (US-24), and Allen Park near I-94
- Dearborn near the University of Michigan-Dearborn, Henry Ford College, and Fairlane Town Center as well as along Michigan Avenue (US-12)
- Oakland County communities such as Troy and Auburn Hills along I-75 and the commercial corridors along Woodward Avenue (SR-1) and the John C. Lodge Freeway (SR-10)
- Macomb County communities such as Eastpointe, Utica, Fraser, and areas along Hall Road (SR-59)
- Outside the SMART service area: Midtown and Downtown Detroit

Like transit-oriented population groups, the concentration of services can be a significant factor to consider when planning fixed-route transit, but the overall transit potential of an area must still be considered. Adequate population and employment density are essential to ensure a sufficient number of potential riders exist to support fixed-route transit services.

Figure 24: Retail and Restaurant Employment



**Retail & Restaurant Job Density (Score)**

- 0.83 - 29.22 jobs / acre (5 points)
- 0.33 - 0.82 jobs / acre (4 points)
- 0.14 - 0.32 jobs / acre (3 points)
- 0.06 - 0.13 jobs / acre (2 points)
- 0.01 - 0.05 jobs / acre (1 points)

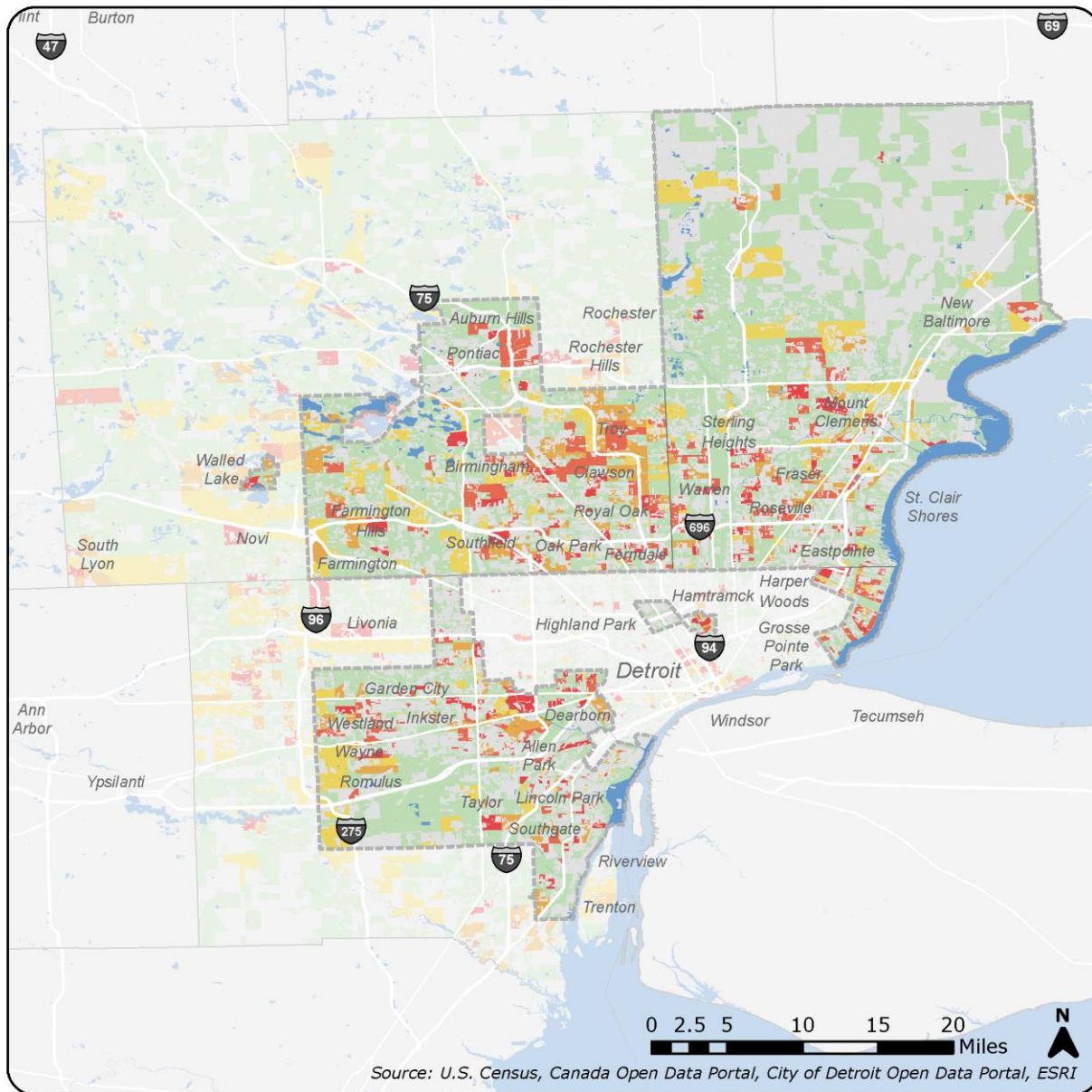
Source: LEHD (2015)

SMART Opt-In Communities

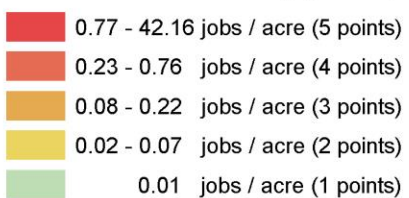
Water



Figure 25: Education Employment



**Education Job Density (Score)**



Source: LEHD (2015)

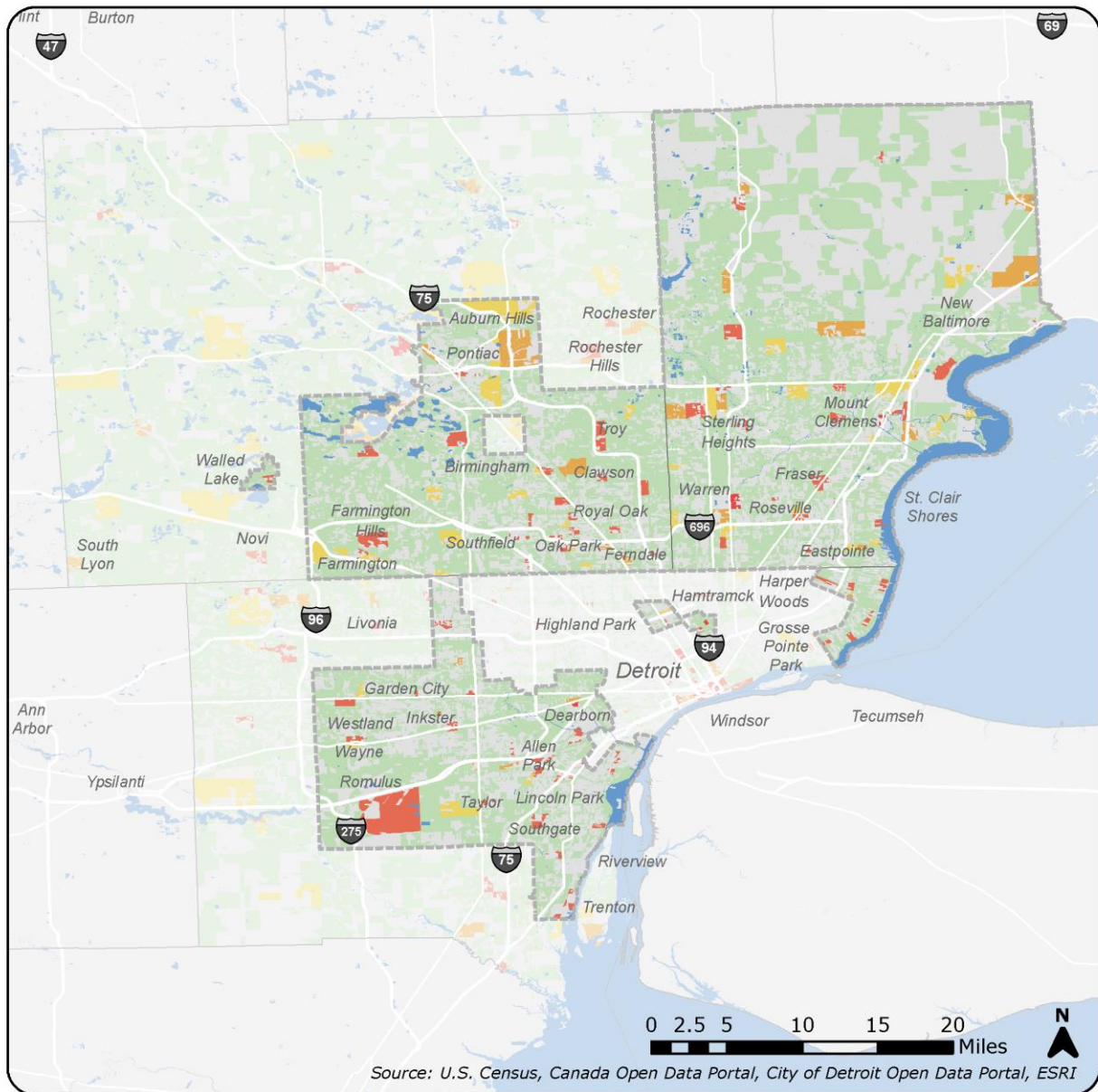
SMART Opt-In Communities

Water

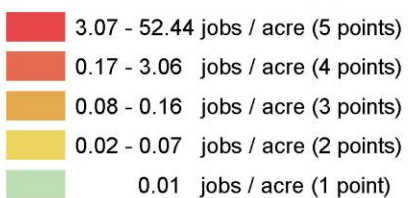




Figure 26: Government Employment



### Government Job Density (Score)



Source: LEHD (2015)

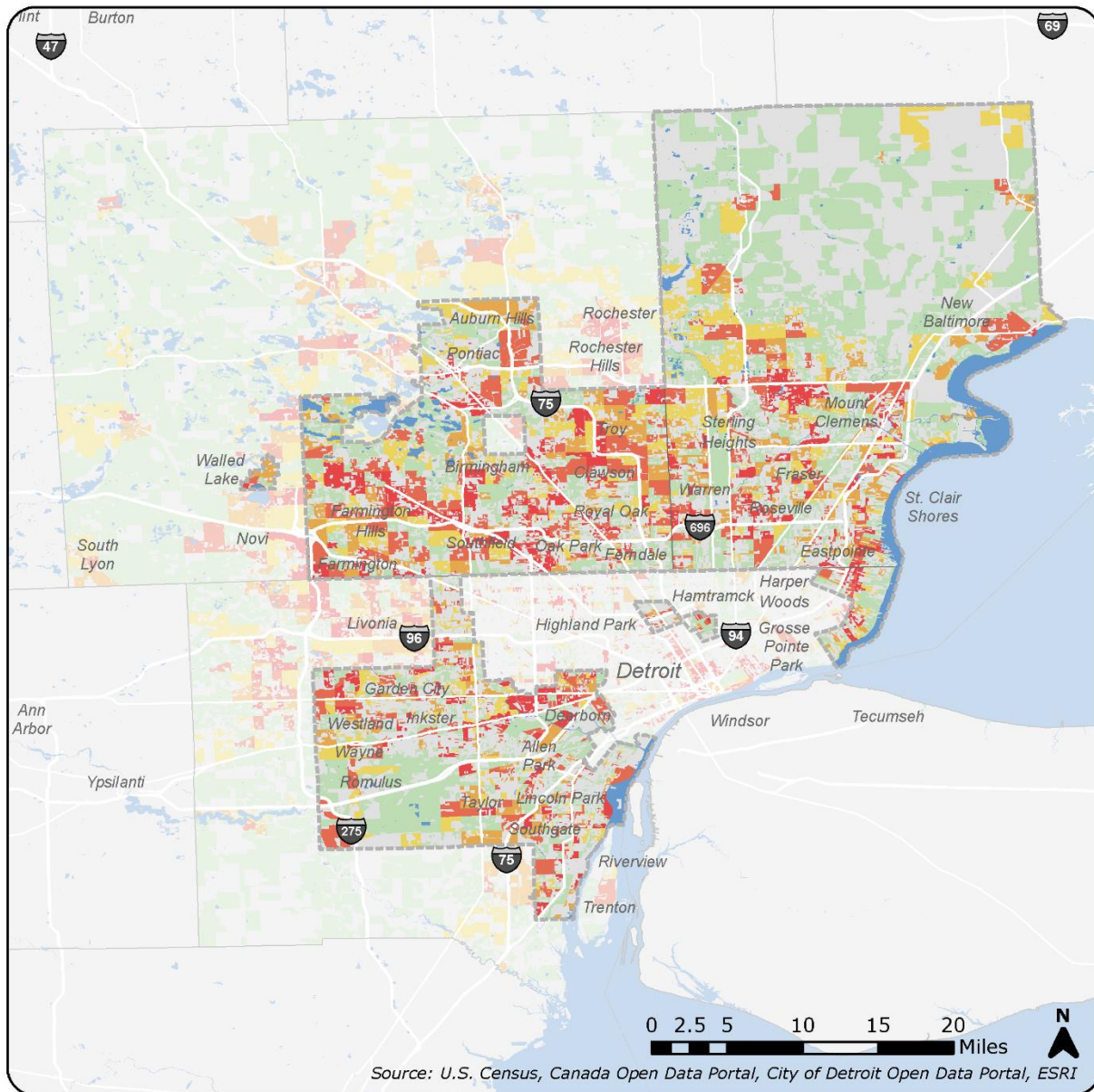
SMART Opt-In Communities

Water

**SMART**  
RIDE



Figure 27: Healthcare Employment



**Healthcare Job Density (Score)**

<span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span>	0.60 - 166.63 jobs / acre (5 points)
<span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span>	0.18 - 0.59 jobs / acre (4 points)
<span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span>	0.08 - 0.17 jobs / acre (3 points)
<span style="display:inline-block; width:15px; height:15px; background-color:lightyellow; border:1px solid black;"></span>	0.03 - 0.07 jobs / acre (2 points)
<span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span>	0.01 - 0.02 jobs / acre (1 point)

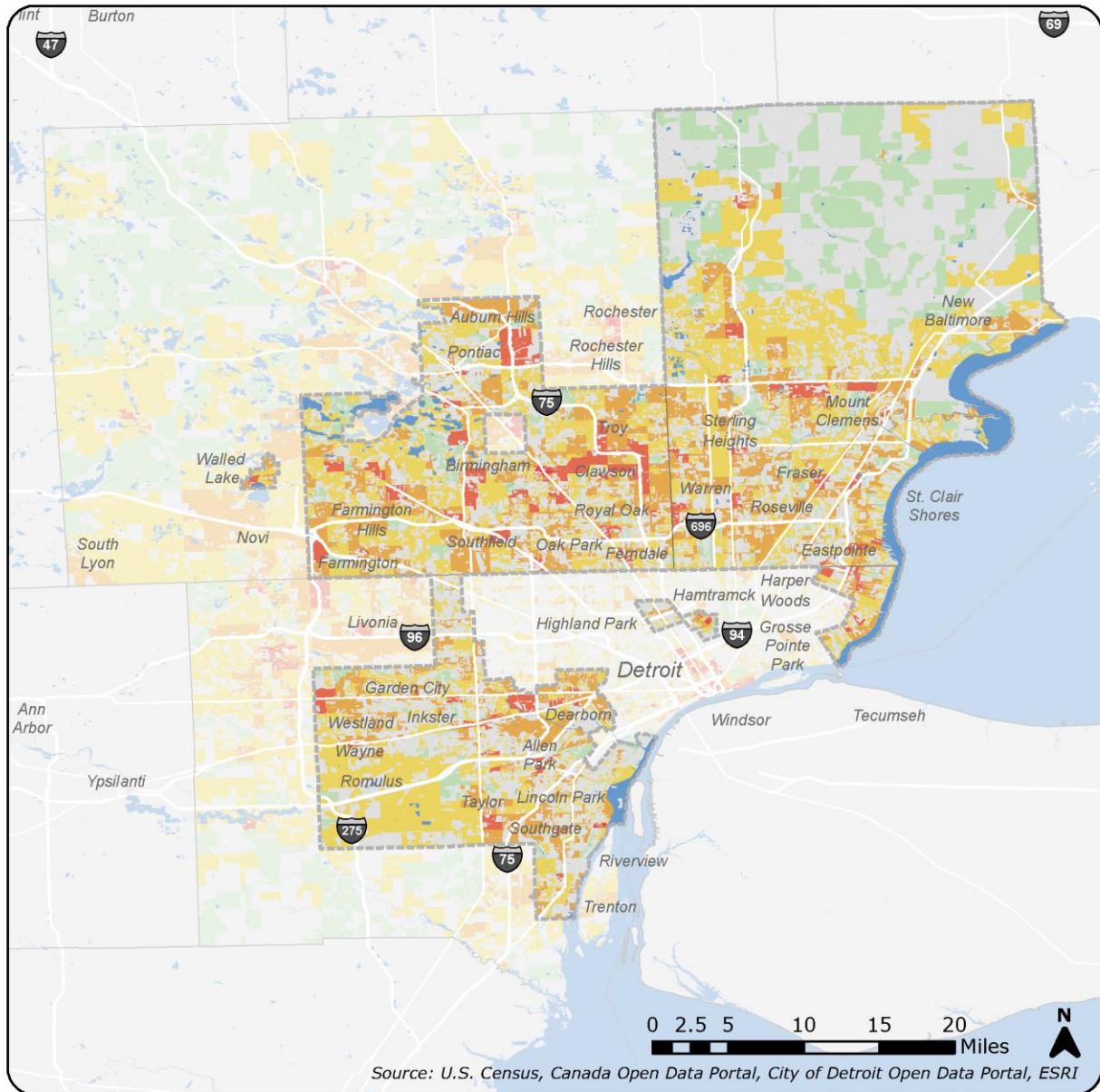
Source: LEHD (2015)

SMART Opt-In Communities

Water



Figure 28: Recreation Employment



### Services Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

The Services Index is a five-variable composite score based on the combined density of jobs in the following categories: Retail/Restaurant, Education, Healthcare, Government, and Recreation.  
Source: LEHD (2015)

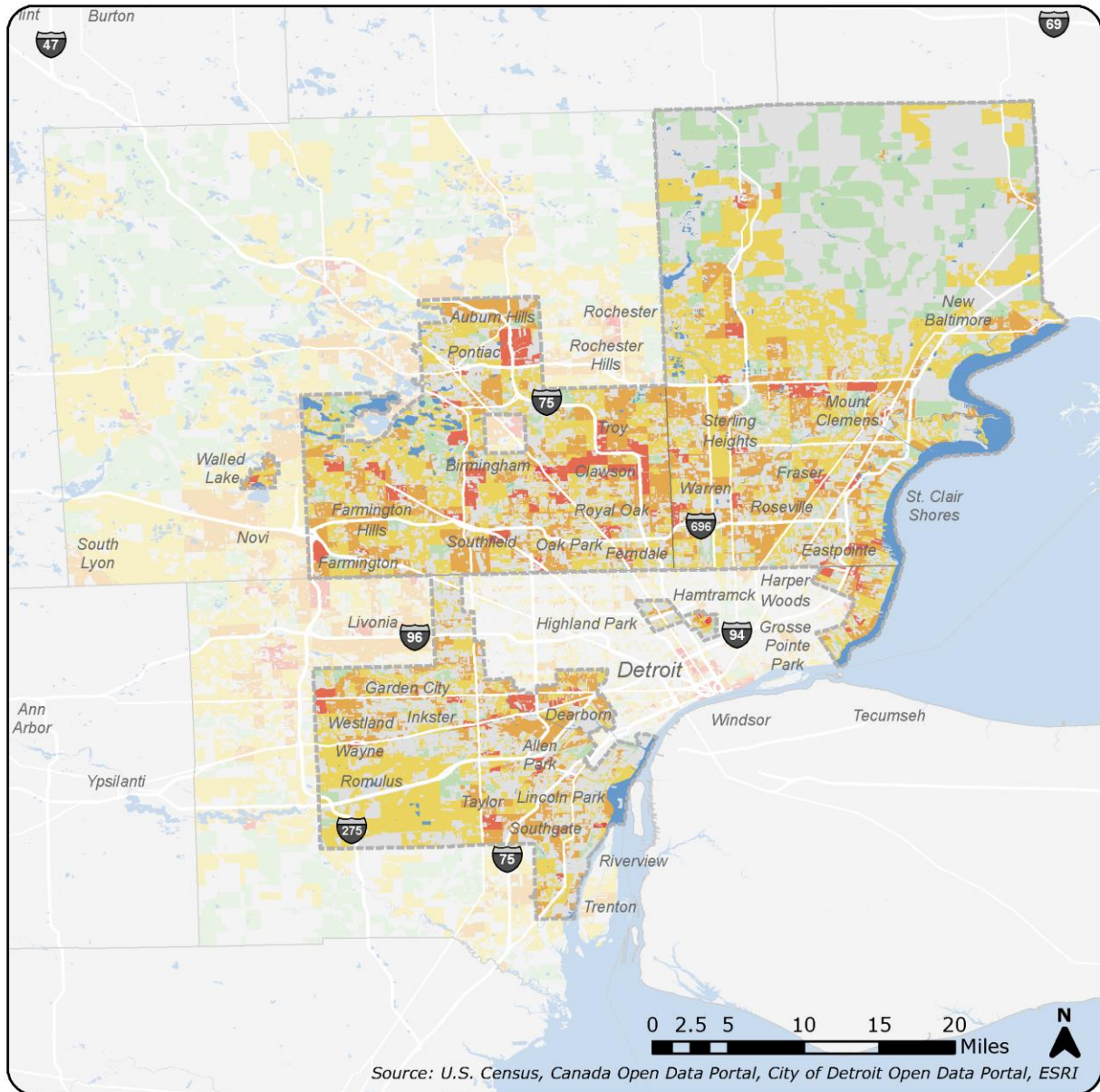
SMART Opt-In Communities

Water





Figure 29: Services Index



### Services Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

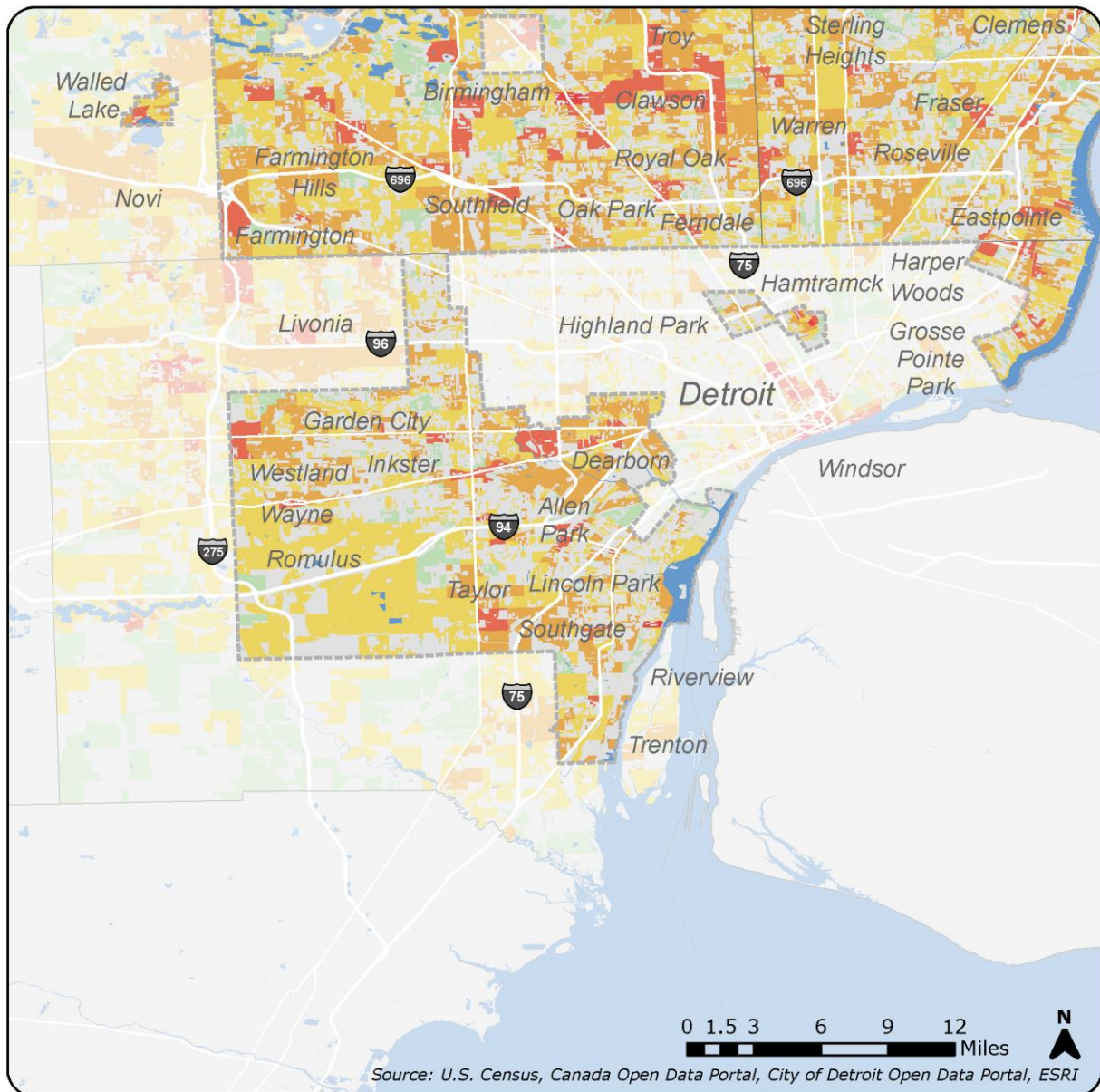
The Services Index is a five-variable composite score based on the combined density of jobs in the following categories: Retail/Restaurant, Education, Healthcare, Government, and Recreation.  
Source: LEHD (2015)

SMART Opt-In Communities

Water



Figure 30: Services Index (Wayne)



### Services Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

The Services Index is a five-variable composite score based on the combined density of jobs in the following categories: Retail/Restaurant, Education, Healthcare, Government, and Recreation. Source: LEHD (2015)

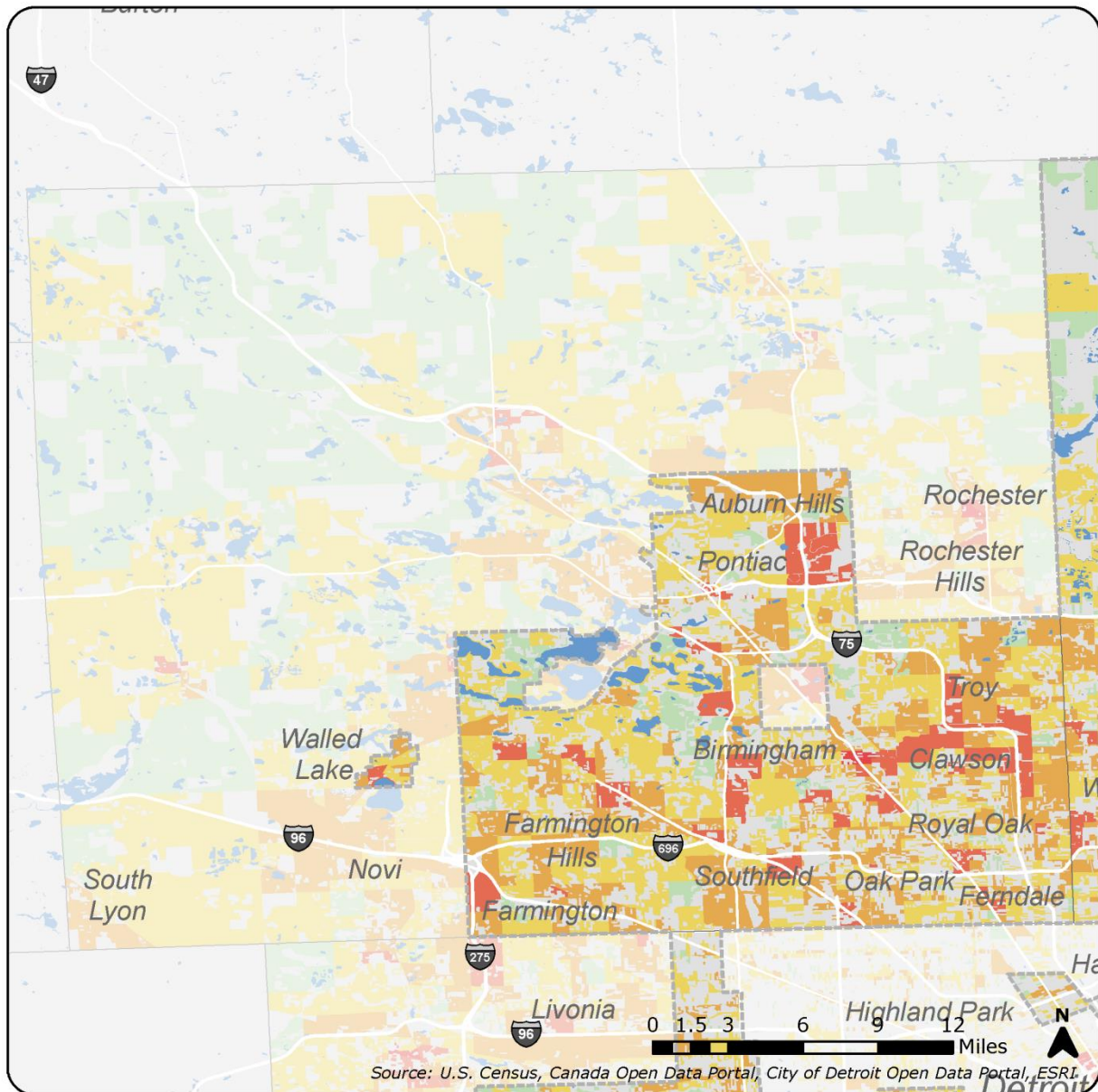
SMART Opt-In Communities

Water





Figure 31: Services Index (Oakland)



### Services Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

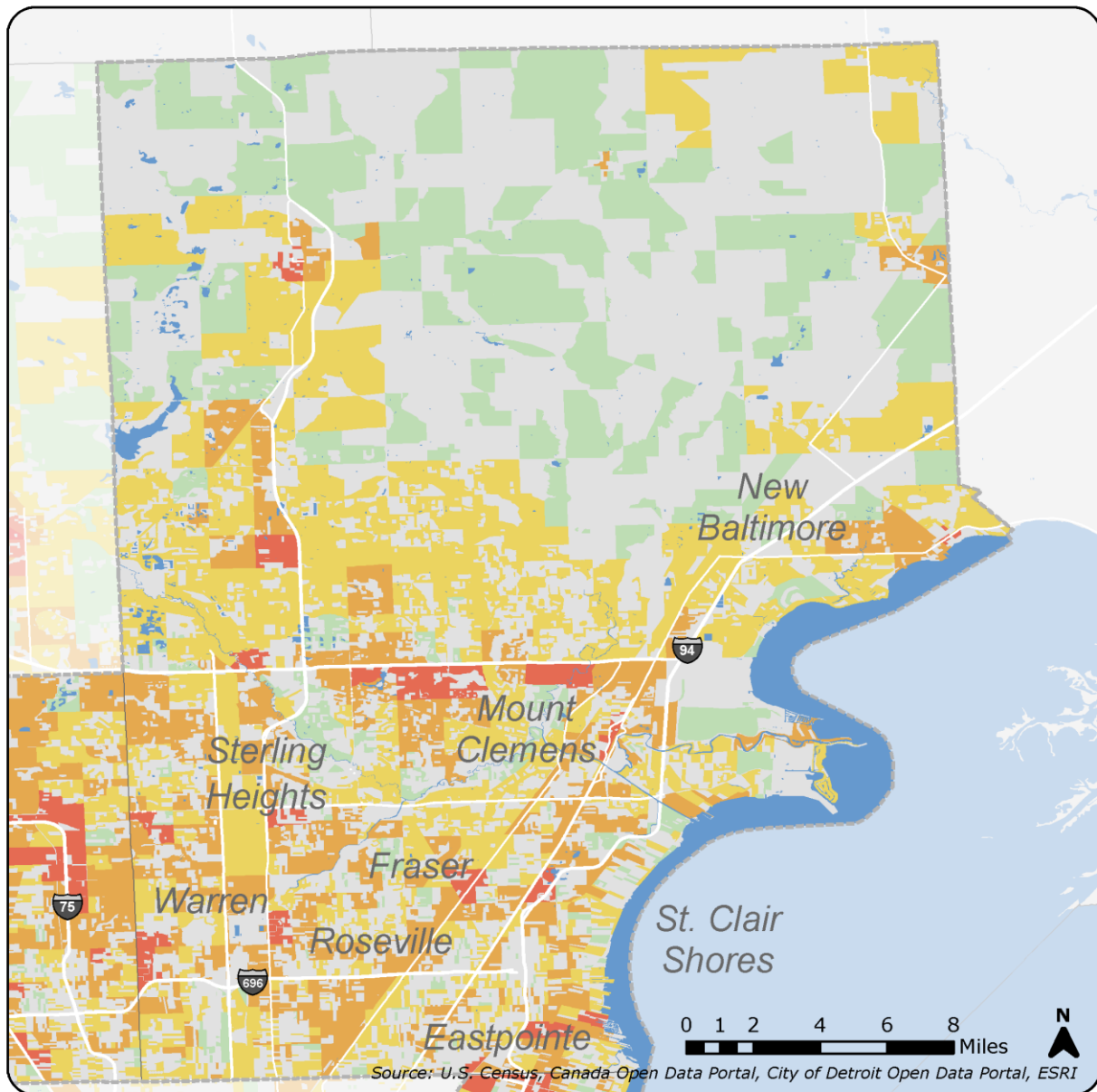
The Services Index is a five-variable composite score based on the combined density of jobs in the following categories: Retail/Restaurant, Education, Healthcare, Government, and Recreation. Source: LEHD (2015)

SMART Opt-In Communities

Water



Figure 32: Services Index (Macomb)



#### Services Index Five Variable Composite Score

- 21 - 25 points
- 16 - 20 points
- 11 - 15 points
- 6 - 10 points
- 1 - 5 points

The Services Index is a five-variable composite score based on the combined density of jobs in the following categories: Retail/Restaurant, Education, Healthcare, Government, and Recreation. Source: LEHD (2015)

SMART Opt-In Communities

Water



## Travel Patterns

The Southeast Michigan Council of Governments (SEMCOG) maintains a regional Travel Demand Model to estimate current and future traffic volumes between and within over 2,800 traffic analysis zones (TAZs). For the purposes of this study, the horizon year 2020 was used. The TAZ geographies roughly follow both town and county boundaries and are generally smaller than most towns.

### Peak Period Home-to-Work Travel

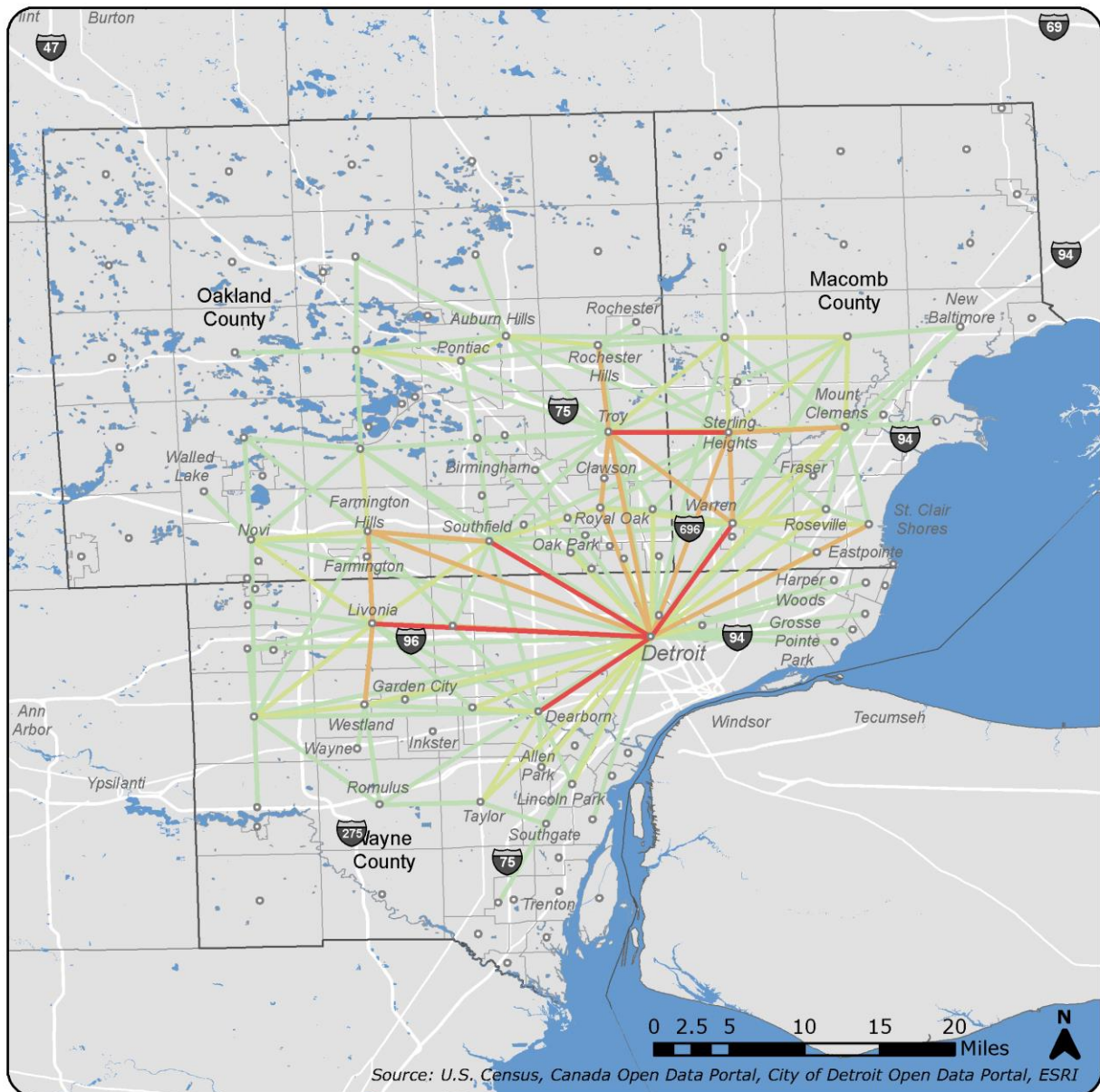
Peak period home-based work travel flows were summarized for this analysis, which is indicative of the major commuting patterns present in the region during traditional commuting times. The first part of this analysis summarizes travel flows aggregated to the county subdivision, or place level (**Figure 33**). This analysis shows more generalized, regional travel. The second part summarizes travel flows at the TAZ level for each county (**Figure 34** through **Figure 36**). This analysis emphasizes more localized travel, including significant travel internal to many places. Overall, the key takeaways for each map include:

- Place to Place Travel:
  - The most prevalent travel is to Detroit from its surrounding suburbs, including Livonia, Dearborn, Southfield, and Warren. There is also significant travel between Troy and Sterling Heights.
  - There is some notable suburban travel, primarily between Westland and Livonia, Farmington Hills and Livonia, Farmington Hills and Southfield, Rochester Hills and Troy, Royal Oak and Troy, and Sterling Heights and Macomb Township.
- TAZ to TAZ Travel:
  - Wayne County:
    - The most prevalent travel flows are relatively short; all the TAZ to TAZ flows with greater than 60 total trips are less than three miles long
    - There is significant travel to Midtown Detroit and the Wayne State University area from surrounding neighborhoods
    - There is significant travel to Trenton from surrounding places (likely to the large Ford and Chrysler plants located there) and significant travel to Detroit Metropolitan Airport in Romulus from surrounding places and from Allen Park
  - Oakland County:
    - The most prevalent travel flows in Oakland County are also relatively short however they are generally longer than in Wayne County
    - Travel is centered on the I-75 corridor north of SR-59 in Auburn Hills. This is a major employment and activity node and is home to the Fiat-Chrysler corporate headquarters, Oakland University, and Oakland Community College. Travel to this area not only includes neighboring Pontiac and Rochester Hills but also places further north including Oxford and Brandon.
    - There is also significant travel to the I-96 corridor in Novi where the Twelve Oaks Mall and other regional shopping centers are located, as well as Ascension Providence Hospital
  - Macomb County:
    - The most prevalent travel flows in Macomb County are also relatively short, with most TAZ to TAZ flows with greater than 60 total trips being less than four miles long

- Travel is centered on Clinton Township, Macomb Township, and New Baltimore/Chesterfield
  - Northwest Clinton Township is home to Macomb Community College and a number of retail developments along SR-59. Travel to this area is prevalent from within the Township and from nearby Macomb Township and Sterling Heights.
  - The 23 Mile Road corridor in Macomb Township (and adjacent Shelby) is home to significant commercial development. Travel to this area is primarily from Shelby and Clinton Township.
  - In Chesterfield, the 23 Mile Road corridor near I-94 is home to a large activity node with significant retail, warehousing, and manufacturing space. Travel to this area is primarily along the 23 Mile Road corridor from Macomb Township and New Baltimore.



Figure 33: Place-to-Place Peak Period Home-to-Work Travel Flows



### Place-to-Place Peak Period Trip Flows

Home-Based Work (HBW) Trip Flows

- 9,001 - 18,000
- 5,001 - 9,000
- 3,001 - 5,000
- 1,501 - 3,000

- Water
- SMART Counties
- Places



Figure 34: TAZ-to-TAZ Peak Period Home-to-Work Travel Flows (Wayne County)



**TAZ-to-TAZ Peak Period Trip Flows (Wayne County)**

**Home-Based Work (HBW) Trip Flows**

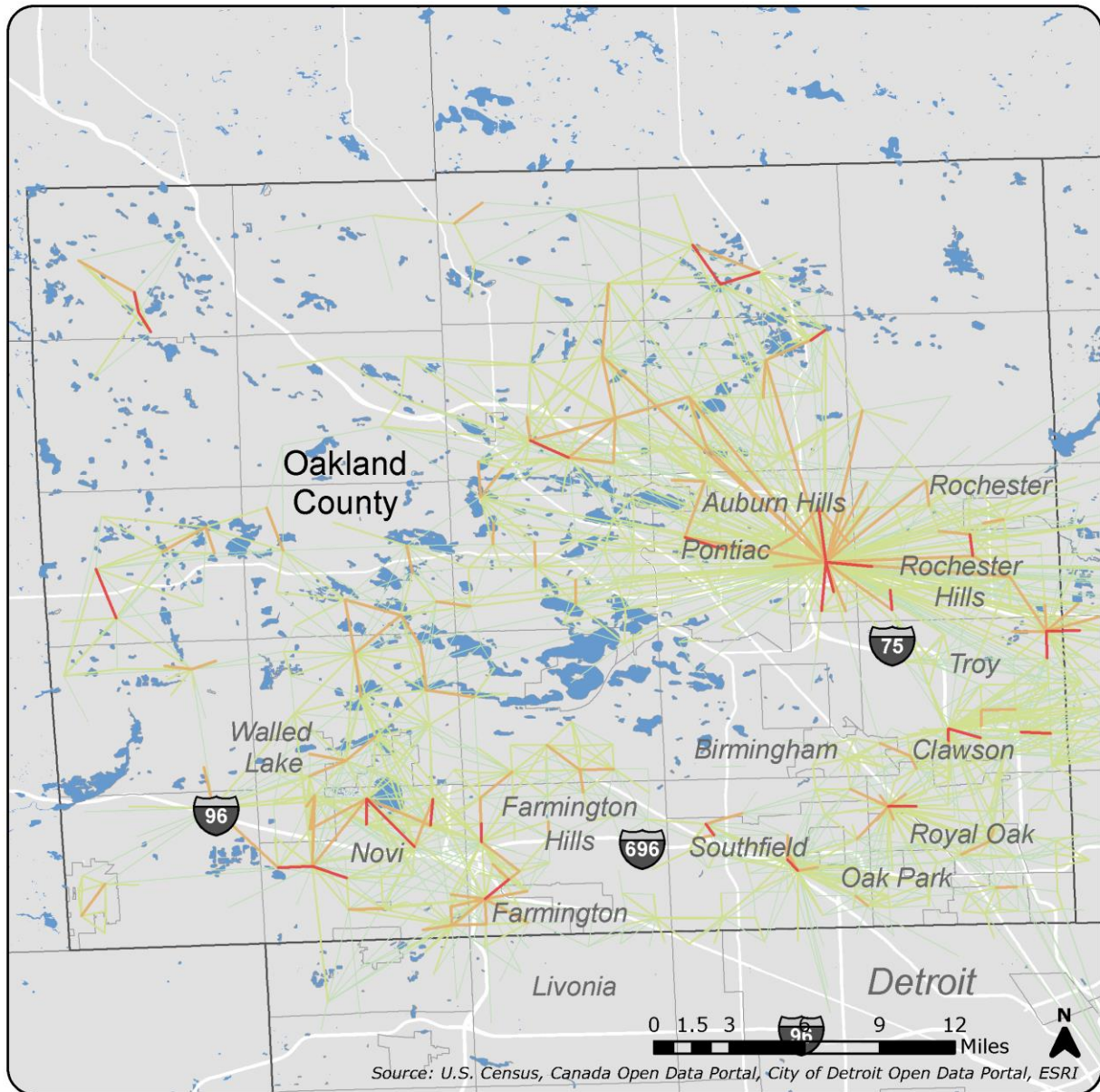
- 61 - 135
- 41 - 60
- 21 - 40
- 15 - 20

- Water
- SMART Counties
- Places





Figure 35: TAZ-to-TAZ Peak Period Home-to-Work Travel Flows (Oakland County)



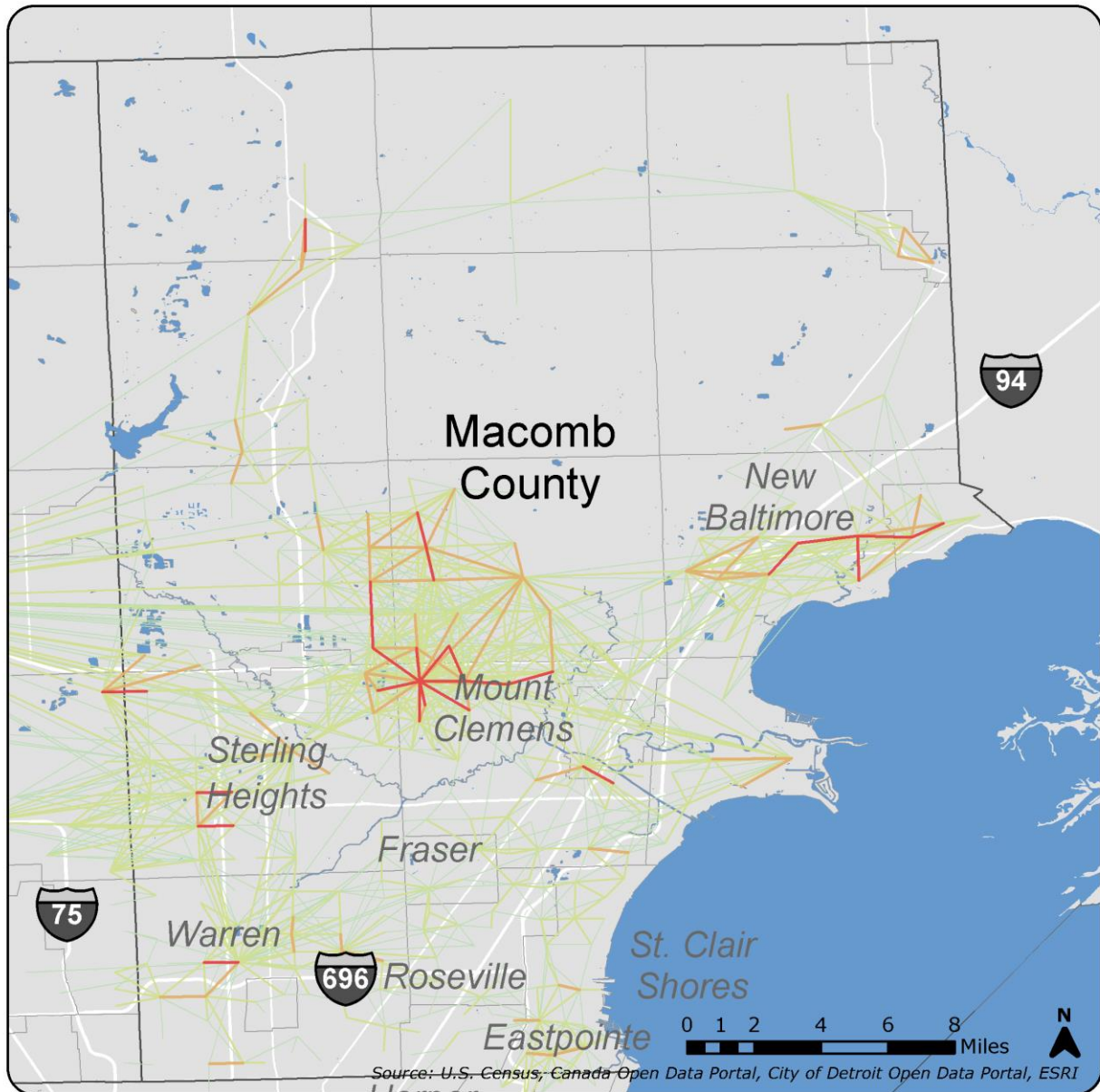
**TAZ-to-TAZ Peak Period Trip Flows (Oakland County)**  
**Home-Based Work (HBW) Trip Flows**

- 61 - 135
- 41 - 60
- 21 - 40
- 15 - 20

- Water
- SMART Counties
- Places



Figure 36: TAZ-to-TAZ Peak Period Home-to-Work Travel Flows (Macomb County)



**TAZ-to-TAZ Peak Period Trip Flows (Macomb County)**  
**Home-Based Work (HBW) Trip Flows**

- 61 - 135
- 41 - 60
- 21 - 40
- 15 - 20

- Water
- SMART Counties
- Places





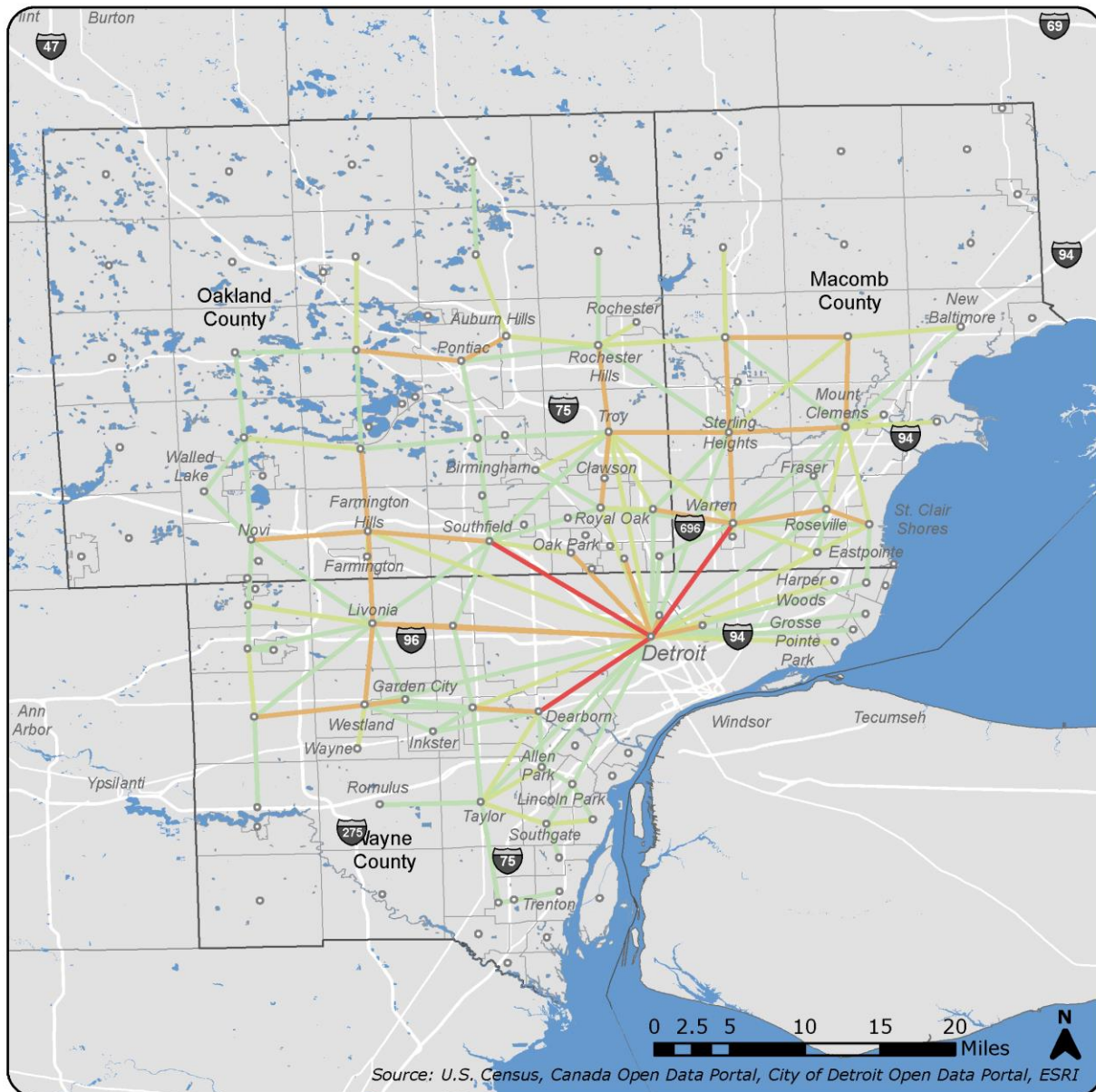
### All-Day Travel Flows

All-day non-home based and home-based non-work travel flows were summarized for this analysis. These flows are indicative of the trips made by people for shopping, medical appointments, and other personal business. Like the previous analysis, the first part of this analysis summarizes travel flows aggregated to the county subdivision, or place level (**Figure 37**). This analysis shows more generalized, regional travel. The second part summarizes travel flows at the TAZ level for each county (**Figure 38** through **Figure 40**). This analysis emphasizes more localized travel, including significant travel internal to many places. Overall, the key takeaways for each map include:

- Place-to-Place Travel:
  - The most prevalent travel is to Detroit from its surrounding suburbs, including Dearborn, Livonia, Southfield, and Warren
  - There is considerably more suburb to suburb travel than the peak period home-to-work travel flows, including between Farmington Hills and Novi, Farmington Hills and Livonia, Westland and Livonia, Westland and Canton, Troy and Rochester Hills and Clawson; Sterling Heights and Troy, Warren, Macomb Township, and Shelby; and Roseville and Warren.
- TAZ-to-TAZ Travel:
  - Wayne County:
    - Like the peak period home-to-work travel flows, the most prevalent travel flows in this analysis are relatively short; all the TAZ-to-TAZ flows with greater than 1,500 total trips are less than three miles long.
      - Most of these prevalent travel flows are internal to a particular place or between adjacent places such as Trenton and Riverview, or Dearborn and Dearborn Heights
    - Travel is much more focused on suburbs rather than Detroit, and there are no major clusters of travel to a particular corridor or place
  - Oakland County:
    - The most prevalent travel flows in Oakland County are also relatively short, with most of the TAZ-to-TAZ flows with greater than 1,500 total trips being less than three miles long
    - Travel is much more localized and scattered than peak period home-to-work travel
    - There is significant travel to northwest Auburn Hills from Pontiac and Orion. This area is home to a large regional activity node with major retail developments including the Great Lakes Crossing Outlets, the Michigan Aquarium, and other big-box retailers.
    - There is also significant travel to the I-96 corridor in Novi where the Twelve Oaks Mall and other regional shopping centers are located, as well as Ascension Providence Hospital. Most of this travel is internal to Novi.
  - Macomb County:
    - The most prevalent travel flows in Macomb County are also relatively short, with most TAZ-to-TAZ flows with greater than 1,500 total trips being less than four miles long
    - Travel is centered on Clinton Township, Sterling Heights, and New Baltimore/Chesterfield

- Northwest Clinton Township is home to Macomb Community College and a number of retail developments along Hall Road (SR-59). Travel to this area is prevalent from within the Township and from nearby Macomb Township and Sterling Heights.
- Northeast Sterling Heights is home to the Lakeside Mall and a number of other retail developments along the Hall Road (SR-59) corridor. Travel to this area is primarily internal to Sterling Heights but also from adjacent Macomb Township, Clinton, and Utica.
- The Van Dyke Avenue (SR-53) corridor in southwest Sterling Heights is home to a number of retail developments and sees significant travel along the corridor and from the west (near the Oakland County border)
- In Chesterfield, the 23 Mile Road corridor near I-94 is home to a large activity node with significant retail development. Travel to this area is primarily along the 23 Mile Road corridor from Macomb Township and New Baltimore.

Figure 37: Place-to-Place All-Day Travel Flows, Excluding Home-Based Work



### Place-to-Place All Day Trip Flows

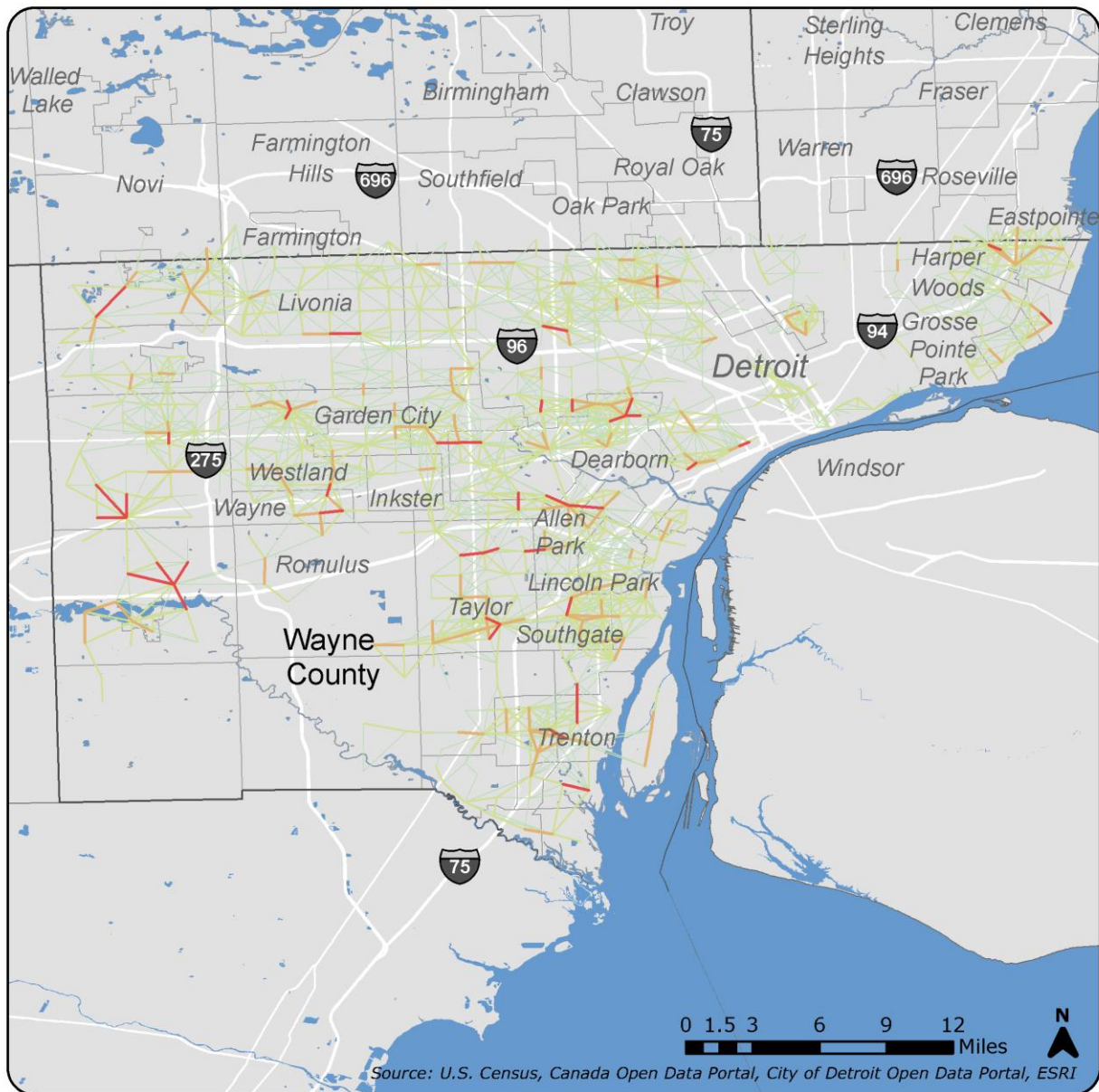
Trip Flows Excluding Home-Based Work (HBW)

- 100,001 - 210,000
- 40,001 - 100,000
- 25,001 - 40,000
- 15,001 - 25,000

- Water
- SMART Counties
- Places



Figure 38: TAZ-to-TAZ All-Day Travel Flows, Excluding Home-Based Work Flows (Wayne County)



**TAZ-to-TAZ All Day Trip Flows (Wayne County)**

**Trip Flows Excluding Home-Based Work**

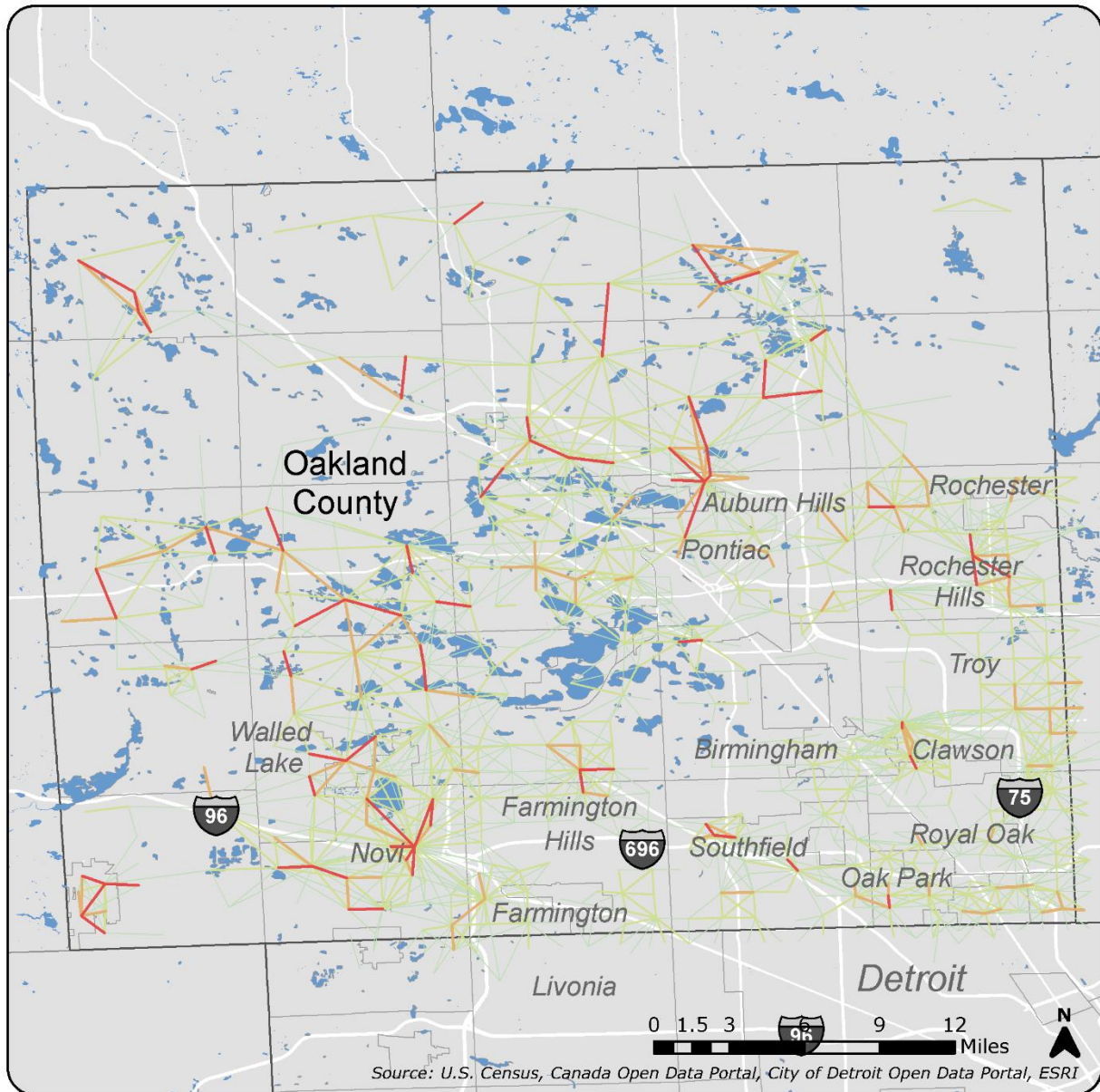
- 1,501 - 4,500
- 1,001 - 1,500
- 501 - 1,000
- 301 - 500

- Water
- SMART Counties
- Places





Figure 39: TAZ-to-TAZ All-Day Travel Flows, Excluding Home-Based Work Flows (Oakland County)



**TAZ-to-TAZ All Day Trip Flows (Oakland County)**

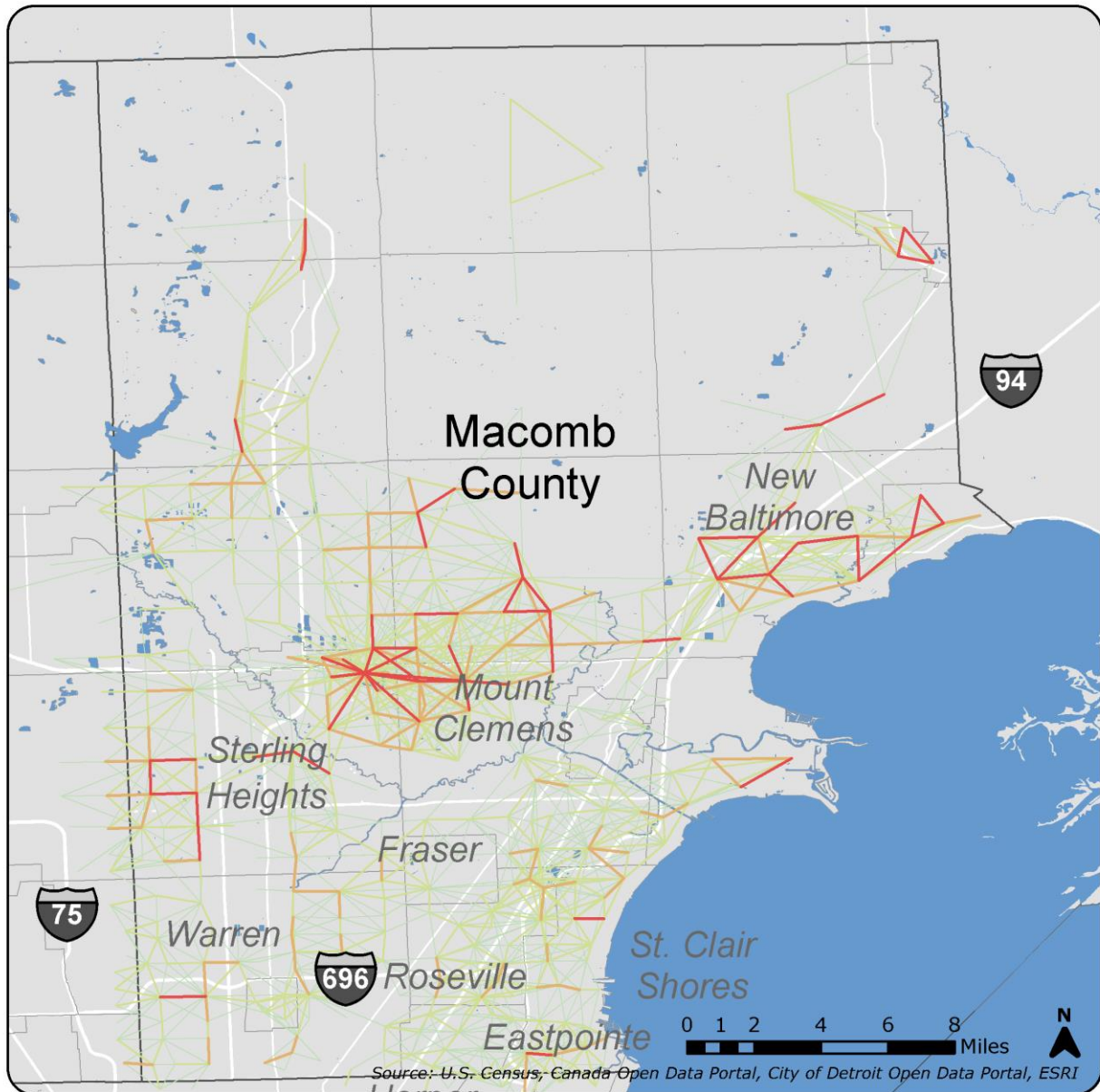
**Trip Flows Excluding Home-Based Work**

- 1,501 - 4,500
- 1,001 - 1,500
- 501 - 1,000
- 301 - 500

- Water
- SMART Counties
- Places



Figure 40: TAZ-to-TAZ All-Day Travel Flows, Excluding Home-Based Work Flows (Macomb County)



**TAZ-to-TAZ All Day Trip Flows (Macomb County)**

**Trip Flows Excluding Home-Based Work**

- 1,501 - 4,500
- 1,001 - 1,500
- 501 - 1,000
- 301 - 500

- Water
- SMART Counties
- Places



## 2.4 FINDINGS

Overall, existing SMART ridership correlates well with areas of high density and transit demand. Additionally, many of the areas with high transit potential also have high transit need based on the findings of the Transit-Oriented Populations, Commuter, and Services Indices. These areas have high concentrations of potential transit riders in densities that can support frequent transit and include many of the major corridors in the region such as SR-I 53 through Wayne County, I-696 and I-75 in Oakland County, and SR-53 and SR-3 in Macomb County.

Travel patterns in the region include many origin and destination clusters that also have high transit need and potential, such as the I-75 corridor in Auburn Hills, the SR-59 corridor in Sterling Heights, and the SR-I 53 corridor in Dearborn. Not all major destinations in the region are within the SMART service area, however. For example, communities like Novi, Livonia, and Rochester have major regional destinations with prevalent travel flows but have opted out of SMART service.

Areas with high transit potential should have transit service frequencies that correspond with the level of density. Six people or jobs per acre can generally support hourly frequencies, while 60 or more people or jobs per acre can generally support high frequency service. Areas with these densities that have mismatches with the transit service supplied should be targeted for improvements. Additionally, the three indices should match well with different types of transit service, particularly:

- Areas with high Commuter Index scores should have peak period service
- Areas with high Transit-Oriented Populations Index and high Services Index scores should have all-day service

The prevalent connections in the travel flow analysis should also be well served by transit. Prevalent peak home-to-work flows with origins that have high Commuter Index scores and destinations that have high employment densities should have peak period transit service connections. Prevalent all-day non-work flows with origins that have high Transit-Oriented Populations Index scores and destinations that have high Services Index scores should have all-day transit service connections. Areas with mismatches between the demand outlined and the service provided should be targeted for improvements.

### 3.0 DOCUMENT REVIEW

The communities and stakeholders within SMART's service area have already completed many planning studies which establish goals, recommendations, and strategies relevant to transit planning. In order to understand context and develop suitable recommendations, these studies were reviewed and key findings noted. The full list of planning studies reviewed is shown below, and a link to the full document review can be found in the Appendix. Key findings from these studies include:

- Gratiot, Michigan, and Woodward Avenues are key regional corridors that have been studied in detail with an eye on opportunities to implement rapid transit on those corridors. SMART's implementation of FAST routes on these same corridors speaks to their importance, which will continue to inform future service.
- Many communities throughout the tri-county region are working towards implementing complete streets and transit-oriented development (TOD), which will impact ridership and transit service in those areas. Complete streets recommendations and policies may contain spatial and design regulations for bus stops and transit facilities.
- Better connections between SMART and other transit providers is a regional goal which will continue to impact fare payment, facilities, and service planning.

#### Macomb County Planning Studies

- 2017 City of Utica Master Plan
- Macomb County Parks and Recreation Master Plan (2014)
- Blue Economy Strategic Development Plan (2012)

#### Oakland County Planning Studies

- Complete Streets Pontiac (2017)
- Troy Master Plan (2017)
- Downtown Pontiac Master Plan (2014-16)
  - Congress for New Urbanism Legacy Charrette: Vision for Revitalized and Transit-Ready Downtown Pontiac (2016)
  - Pontiac Moving Forward: An Economic Recovery Strategy (2015)
  - 2014 Master Plan Update
  - Downtown Pontiac Transportation Assessment (2014)
- Oakland University Campus Master Plan (2016)
- Sustainable Southfield Comprehensive Master Plan (2016)
  - Northland Subarea Redevelopment Plan (2017)
  - Non-Motorized Pathway & Public Transit Plan (2012)
- Farmington Hills Vision 2020
  - Farmington Hills Grand River Corridor Vision Plan (2013)
  - Economic Redevelopment Team Final Report (2011)
  - Transportation and Energy Committee Report (2011)



- Royal Oak Master Plan (2012)

### **Wayne County Planning Studies**

- Detroit Strategic Plan for Transportation (2018)
- Airport Master Plan Update: Detroit Metropolitan Wayne County Airport (2017)
- Henry Ford College Campus Master Plan (2015)
- Dearborn 2030 Master Plan (2014)

### **Corridor Planning Studies**

- Rapid Transit Planning (2014-16)
  - Gratiot Avenue Transit Study Locally Preferred Alternative Report (2016)
  - Michigan Avenue Corridor Study Locally Preferred Alternative Report (2016)
  - Woodward Avenue Rapid Transit Alternatives Analysis Locally Preferred Alternative (2014)
- Woodward Avenue Complete Streets Master Plan (2014)
- Woodward Avenue Transit-Oriented Development Corridor Study for South Oakland County (2012)
- Greater Downtown TOD Strategy (2011)

### **Southeast Michigan Council of Governments (SEMCOG) Planning Studies**

- Public Outreach Report: 2045 Regional Transportation Plan (2017)
- Access to Core Services in Southeast Michigan (2016)
- Partnering for Prosperity: Economic Development Strategy for Southeast Michigan (2016)
- Bicycle and Pedestrian Travel Plan for Southeast Michigan (2014)
- Improving Public Transit and Accessibility (2014)
- 2040 Regional Transportation Plan for Southeast Michigan (2013)

### **Transit Agency Plans**

- The Ride FY 2019 Draft Strategic Business Plan
- Detroit Department of Transportation (DDOT) Service Development Efforts (2018)
- Connect Southeast Michigan (RTA Master Plan - 2018)
- Transit Oriented Development Study for the Detroit People Mover (2016)
- Regional Fare Card Phase I Study (2015)

## 4.0 EXISTING FIXED ROUTE SERVICE

This section analyzes key operating characteristics and ridership trends specific to SMART's fixed route system.

### 4.1 ANNUAL OPERATING AND RIDERSHIP ANALYSIS

This section provides a five-year overview of SMART's fixed route system performance between 2013 and 2017. Data within this section comes from National Transit Database (NTD) Agency Profiles published by the Federal Transit Administration annually. **Table 2** shows the annual operating statistics for SMART fixed-route transit service.

**Table 2: Annual Operating Statistics**

	2013	2014	2015	2016	2017
Passenger Trips	9,464,558	9,248,599	9,178,939	8,848,567	8,202,341
Operating Costs	\$74,605,079	\$74,062,770	\$77,793,670	\$82,960,901	\$80,885,488
Farebox Revenue	\$12,484,186	\$12,088,882	\$12,251,180	\$11,698,327	\$11,148,687
Revenue Miles	8,624,774	8,711,941	8,695,370	8,788,406	8,845,468
Revenue Hour	519,534	524,287	522,071	528,052	531,559
Vehicles Operated in Maximum Service	229	205	203	203	200
Vehicles Available for Maximum Service	235	214	244	207	241
<b>PERFORMANCE MEASURES</b>					
Passengers per Revenue Hour	18.2	17.6	17.6	16.8	15.4
Passengers per Revenue Mile	1.1	1.1	1.1	1.0	0.9
Operating Costs per Passenger	\$7.88	\$8.01	\$8.48	\$9.38	\$9.86
Operating Costs per Revenue Hour	\$143.60	\$141.26	\$149.01	\$157.11	\$152.17
Farebox Recovery Ratio	16.7%	16.3%	15.7%	14.1%	13.8%
Subsidy per Passenger	\$6.56	\$6.70	\$7.14	\$8.05	\$8.50

Source: National Transit Database, Transit Agency Profiles, February 2019

Key system performance trends include:

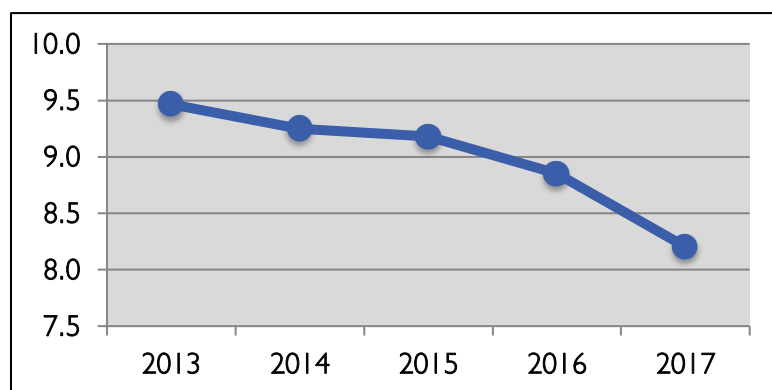
- Decreased boarding activity, especially from 2015 to 2017
  - Ridership decreased over 10 percent and almost one million passengers
- Decreased service efficiency and effectiveness
  - Operating expenses per revenue hour increased six percent from 2013 to 2017
  - Passengers per revenue hour decreased 15 percent, while operating costs per passenger increased 25 percent
- Mismatch between the costs for providing service and revenue generated by the service

- Farebox recovery has decreased from about 17 percent to about 14 percent, contributing to an overall increase in subsidy per passenger

### Annual Passenger Trips

Consistent with national trends, SMART ridership declined from 2013 to 2017. As shown in **Figure 41**, passenger trips have decreased steadily since 2013. The largest annual decrease was 7 percent between 2016 and 2017. This data does not capture the positive effect on ridership that the implementation of FAST routes in 2018 have had on ridership.

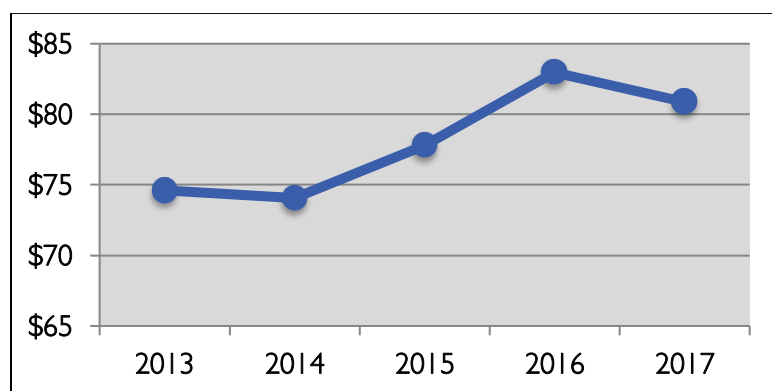
Figure 41: Passenger Trips (Millions)



### Annual Operating Expense

As shown in **Figure 42**, operating costs decreased slightly between 2013 and 2014 and between 2016 and 2017 but increased substantially between 2014 and 2016. Overall, operating expense is on an upward trend.

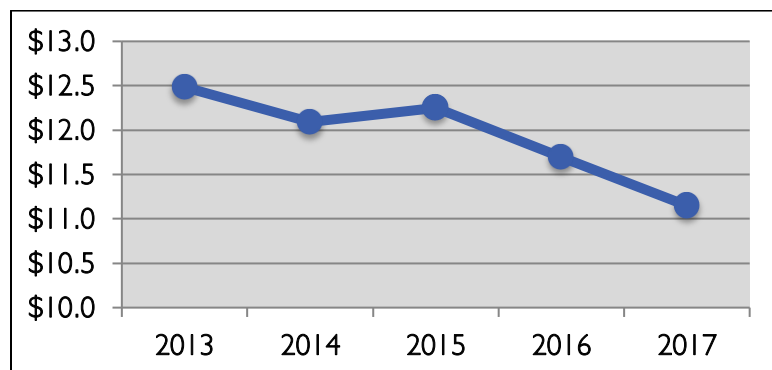
Figure 42: Operating Expense (Millions)



### Annual *Farebox* Revenue

Farebox revenue is on a downward trend overall with a slight increase of one percent between 2014 and 2015, as shown in **Figure 43**. A decrease of 9 percent between 2015 and 2017 mirrors the decreasing number of SMART passengers during the same time period.

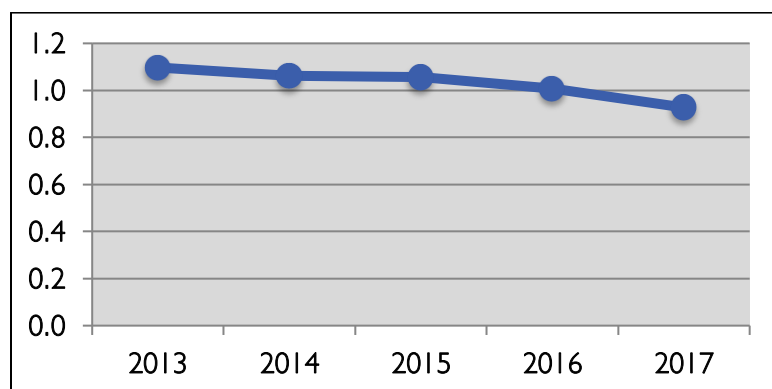
Figure 43: Farebox Revenue (Millions)



### Annual Passengers per Revenue Mile

The number of passengers who are served per mile of revenue service is an indication of service effectiveness. Passengers per revenue mile decreased from 2013 to 2017, as shown in **Figure 44**, despite an overall increase in revenue miles.

Figure 44: Passengers per Revenue Mile

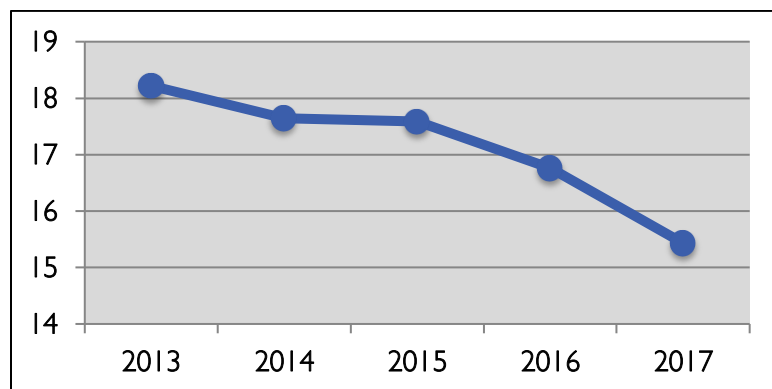




### Annual Passengers per Revenue Hour

The number of passengers who are served per hour of revenue service is another indication of service effectiveness. As shown in **Figure 45**, passengers per revenue hour decreased from 2013 to 2017; however, in 2015 passengers per revenue hour increased slightly due to a decrease in revenue hours.

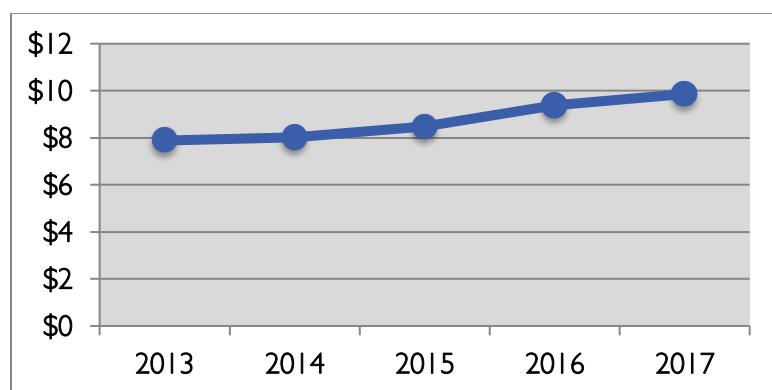
Figure 45: Passengers per Revenue Hour



### Annual Cost per Passenger

Operating costs per passenger is an indication of how cost-effective the service is operating. A higher operating cost per passenger ratio indicates a less cost-effective service. As shown in **Figure 46**, operating costs per passenger increased from 2013 to 2017, indicating decreased cost-effectiveness.

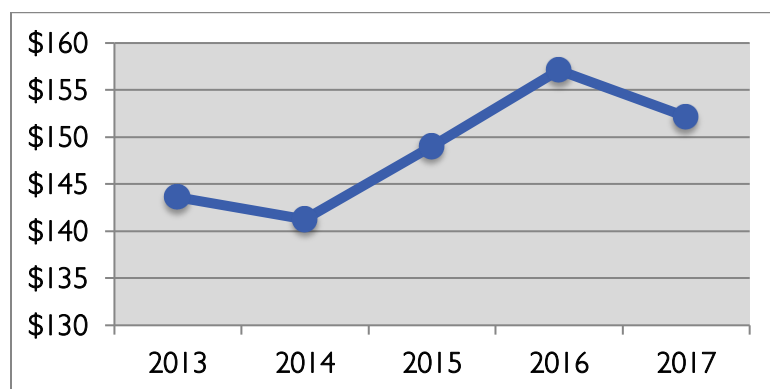
Figure 46: Operating Costs per Passenger



### Annual Cost per Revenue Hour

Operating costs per revenue hour describes the efficiency of the service. High operating costs per revenue hour indicates that the service has lower service efficiency. As shown in **Figure 47**, SMART's costs per revenue hour decreased between 2013 and 2014 and between 2016 and 2017 but increased substantially between 2014 and 2016. These changes reflect the annual operating expense between 2013 and 2017 and indicate an overall decrease in service efficiency.

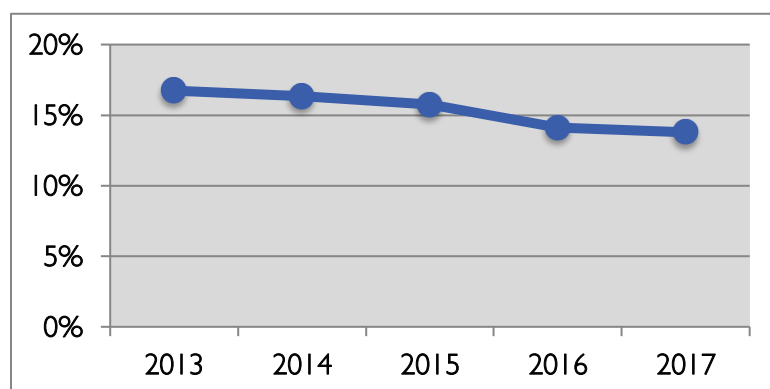
Figure 47: Operating Costs per Revenue Hour



### Annual Farebox Recovery Ratio

Service efficiency can also be described by the farebox recovery ratio, which is the percentage of a service's operating costs that are being covered by the fares paid by passengers. The higher the percentage, the greater the proportion of operating costs being paid by passenger fares. As shown in **Figure 48**, the farebox recovery ratio decreased steadily from 2013 to 2016, but began to level out between 2016 and 2017.

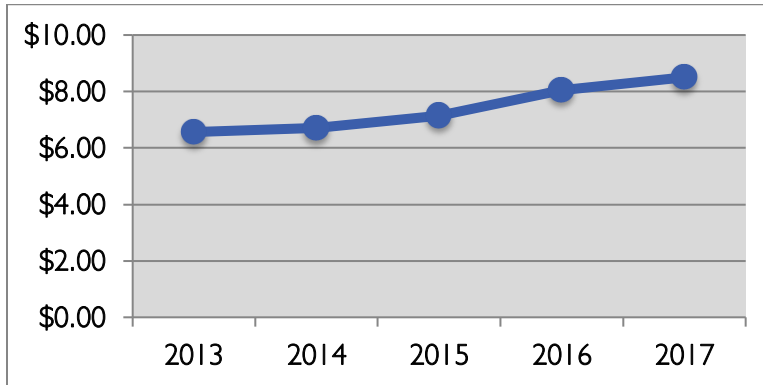
Figure 48: Farebox Recovery Ratio



### Annual Subsidy per Passenger

A third indicator of service efficiency is subsidy per passenger. The subsidy per bus passenger shows the difference between the fare paid by passengers and the actual operating costs to provide the service to the passenger. Subsidies are an inherent part of public transit, but it is always the goal of transit agencies to lower subsidy per passenger. As shown in **Figure 49**, the subsidy per passenger increased steadily between 2013 and 2017.

Figure 49: Subsidy per Passenger



## 4.2 2017 OPERATING AND RIDERSHIP ANALYSIS

This section analyzes operating and ridership data provided directly by SMART at the system-level specifically for 2017. **Table 3** provides a summary of key operating and performance metrics broken down by Weekday, Saturday, and Sunday. The Route Profiles section of the Existing Conditions report included in the Appendix provides detailed operating and ridership profiles for each route in the system.

Key performance metrics for 2017 include:

- SMART operates 48 routes on the weekday for 1,793 revenue hours, and completing over 1,900 trips; Saturdays operate with 28 routes for 982 revenue hours, and over 1,100 trips; Sundays operate with 19 routes and 463 revenue hours, and approximately 600 trips.
- On average, there are about 16 passengers per trip on weekdays, 15 passengers per trip on Saturdays, and 17 passengers per trip on Sundays.
- Passengers per revenue vehicle hour is strongest on the weekends. There may be potential to increase span of service and/or frequencies.

**Table 3: Fixed Route System-Level Analysis – 2017 Summary and Averages**

Category	Weekday	Saturday	Sunday
Service Days per Year	11,176	1,325	928
Annual Ridership	9,959,848	1,074,045	605,404
Average Daily Ridership	39,212	20,265	10,438
Total Hours per Day (average)	54.9	50.9	39.0
Total Routes Operated	48	28	19
Revenue Hours per Day (average)	40.7	39.3	29.0
Revenue Hours per Day (total)	1,793	982	463
Total Vehicle Miles per Day	37,357	23,852	11,818
Revenue Vehicle Miles per Day	1,047	855	655
Peak Vehicles	203	81	43
Trips per Day	1,922	1,174	599
Average Daily Passengers per Trip	16.1	15.0	16.5
Annual Operating Costs	\$68,719,462.90	\$7,550,493.10	\$4,054,478.40
Annual Farebox Revenue	\$6,010,770.30	\$843,246.30	\$512,455.40
Farebox Recovery Ratio	9%	11%	13%
Average Fare Revenue per Day	\$537.83	\$636.41	\$552.21
Passengers per Trip	16.1	15.0	16.5
Passengers per Revenue Vehicle Hour	17.3	18.3	22.0
Passengers per Revenue Vehicle Mile	0.7	0.9	1.0
Operating Cost per Revenue Hour	\$161.14	\$148.05	\$152.10
Cost per Passenger	\$11.09	\$9.71	\$7.52

Source: SMART, November 2018.



## 2017 On-time Performance

**Table 4** provides a summary of the on-time performance of SMART's fixed route system in 2017. The on-time performance for the system during the week averaged 80 percent, and one in five buses arrived early or late. On the weekends, on-time performance improved and less than one in ten buses arrived late. Buses arriving more than five minutes late may need route adjustments to trim some of the route or add more coverage on the route in order to meet SMART's standard for on-time performance<sup>2</sup>. A detailed description of on-time performance by route is provided in the Route Profiles section of the Existing Conditions Report included in the Appendix.

**Table 4: On-time Performance System-level Average**

Category	Weekday	Saturday	Sunday
Percent On-Time	80%	83%	85%
Percent Early	10%	9%	8%
Percent Late	10%	8%	7%

Source: SMART, October 2018.

## Route Profiles

In addition, an in-depth analysis of SMART's fixed route system was conducted on a route-by-route basis to identify current service characteristics and operating statistics such as on-time performance, productivity, and ridership. The full profile of each route is provided in the Existing Conditions Report included in the Appendix. Routes were then compared to each other based on these metrics to identify strengths and potential route improvements. Key takeaways from this analysis include:

- The highest ridership routes in the system are 560 Gratiot, 461/462 FAST Woodward, and 561/563 FAST Gratiot (these 3 routes account for about 30% of systemwide ridership).
- The most productive<sup>3</sup> routes in the system are 710 Nine Mile Crosstown, 560 Gratiot, and 495 John R.

<sup>2</sup> SMART Title VI 2017 Report

<sup>3</sup> Productivity rankings for each route captured:

1. Service productivity: ridership per amount of service provided;
2. Economic productivity: revenue per amount of service provided; and
3. Financial productivity: revenue per ridership.

## 5.0 PERFORMANCE MEASURES

This section provides recommendations for service measures and standards to establish a consistent framework for effective management, evaluation, and planning for fixed route service. The standards would guide future service evaluation; set standards for future service changes including expansion and reduction of service; and ensure compliance with the American with Disabilities Act (ADA) and other local, state, and federal requirements.

The performance measures have been developed to address standards within the categories of efficiency, service quality, and service design.

### 5.1 PERFORMANCE MEASURES RECOMMENDATIONS

The recommended performance measures are designed to monitor operational efficiency and productivity as they relate to key data collected annually for the National Transit Database (NTD).

The recommended measures are based on incremental and achievable improvements for SMART and reflect a starting point for a more robust data collection effort. It is recommended that SMART staff track the performance measures over the next six months and update and adjust the benchmarks to reflect the goals and objectives of the agency over time.

The recommended efficiency performance standards include the following:

- **Operating cost per passenger:** The total operating costs are divided by total passengers (unlinked trips) to calculate the cost for each passenger on the service. This is designed to track the cost effectiveness for the system as it relates to ridership over time.
- **Operating cost per hour:** This is calculated by dividing operating costs by the total number of revenue (in service) hours. Operating cost per revenue hour is one of the key cost effective performance measures to gauge the amount of service provided to the cost to operate that service. The standard should be tracked over time for the system and by route to identify service areas that are less cost effective compared to other routes within the bus system.
- **Passengers per revenue hour:** The total number of passengers divided by the total number of revenue service hours provides a data point for monitoring ridership as it relates to total bus hours operated. This key productivity measurement works as an effective tool for future service planning. Improving ridership is often the goal of planning bus service, however it is just as important to plan for additional ridership with a “right sized” route or system.
- **Farebox recovery ratio:** This is calculated by dividing the revenue from the farebox by the total operating costs. Farebox recovery shows the amount of the total revenue that is generated by passenger fares.
- **Revenue to non-revenue hour:** Non-revenue hours are deadhead hours that include the time for the operator to travel between the bus yard and the scheduled starting point of the service. This also includes the hours of paid operator time before and after shifts.

Service quality standards help staff evaluate system performance pertaining to reliable and high quality service which encourages ridership. The recommended service quality performance standards include the following:

- **On-time performance:** Buses must arrive at the stop no later than five minutes from the scheduled timepoint 90 percent of the time. To be considered on-time, buses should also not depart a timepoint prior to the time in the schedule.
- **Number of complaints per month:** The number of complaints should be monitored and recorded each month. The ultimate goal to reduce it to no more than one complaint per month.
- **Missed trips per month:** No trips should be missed or cancelled. It is important to schedule appropriate operator spare board and to have adequate vehicle spares to ensure reliable service.

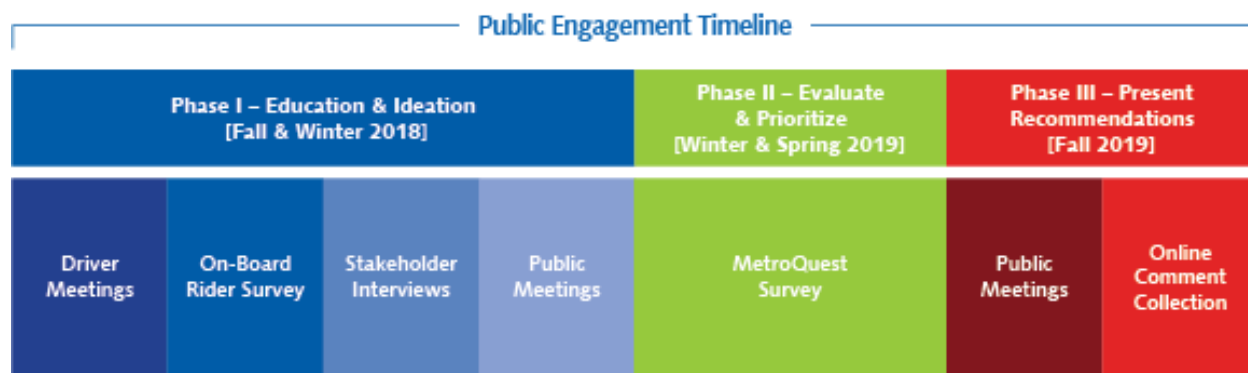
Service design standards help guide decisions for adding new service and making changes to the system. It identifies standards to design the service with a more consistent and uniform approach. The service design standards include the following:

- **Peak passenger loads:** Maximum passenger loads should not exceed 125 percent of seated capacity. This allows for limited standees on the bus service.
- **Bus stop design:** All bus stops should be clearly marked with bus stop signs. It is preferable that the bus stop signs show the route(s) serving each stop. Route number decals can be added to signs or removed from signs during service changes. Bus stop amenities should be added to stops only when a minimum boarding threshold has been met.
- **New service:** Ridership and productivity measures should be defined prior to introducing new service. Service should operate for at least one-year as a pilot program to allow for ridership to develop. The pilot program's performance should be monitored on a regular basis over the 12-month period.

## 6.0 PUBLIC ENGAGEMENT

This section summarizes the comments, issues and ideas expressed by the public, stakeholders, and operations staff, during the public outreach process. Feedback from the general public was gathered through a public meeting process in the Fall of 2018, throughout 2019, and through online surveys. Transit operators provided input at a series of meetings with drivers. Stakeholder interviews were also conducted to solicit comments from community representatives.

Detailed public engagement reports can be found in the Appendix.



### 6.1 PHASE 1: ENGAGEMENT

#### Driver Meetings

Bus operators were interviewed at each of the SMART terminals in Macomb, Oakland, and Wayne Counties. Common issues identified at all terminals included:

- Long headways on Crosstown Routes
- Connections with DDOT
- Insufficient recovery/layover time
- Safety





**Long headways:** Operators stated that on average, there are 60 minutes between crosstown buses, or buses that run primarily on Mile Roads, which creates long wait times for passengers who are transferring from other routes.

**Connections with DDOT:** Drivers discussed the difficulty for both drivers and passengers due to mismatched bus frequencies and a complicated fare system (before the DART fare system was implemented). Drivers stated that bus stop congestion in Downtown Detroit where limited space is shared with DDOT buses also contributes to confusion for passengers and difficulty for drivers.

**Insufficient recovery and layover time:** Drivers pointed out that most SMART routes do not have a designated layover area for drivers to park and use the bathroom, and many routes do not have a enough time built into the schedule at their endpoints before they turn around, which causes buses to run much later than scheduled. This is particularly true for Crosstown Routes since these routes are so long. They stated that these routes could be broken up into smaller segments.

**Safety:** Safety is another concern for many routes as passengers must cross wide, high-speed roads with large gaps between pedestrian crossings, stop locations require drivers to pull across several lanes of traffic, and some routing requires diversions onto alternative streets.

### **On-Board Rider Survey**

An on-board passenger survey was administered on weekday SMART routes to gather data and information on riders' transit usage and trip experience. The primary objectives for the On-Board Survey were to compile statistically accurate information about the use of transit in the region and generate reliable data to support further modeling and analysis of SMART's operation. A total of 2,513 surveys were collected. Key findings from the survey include:

- Walking is the primary means to access bus stops. Over 90% of riders walk to access their bus stop before boarding and walk from the bus stop to their final destination after alighting.
- Transit is an important service that many riders rely upon. 47% of riders do not have a car, and ¼ of riders would not be able to make their trip without SMART.
- Riders between 25 and 34 years old make up ⅓ of total passengers.
- SMART's ridership is largely commute-based. Almost half of SMART's passenger trips are linked to home, and almost 30% are linked to work.
- More than half of riders take one bus for their whole trip (do not have to transfer) and pay with cash.
- Most riders are satisfied with their trip experience, especially with drivers and the cost to ride.

## Stakeholder Interviews

A series of interviews with a variety of individuals and organizations identified as having a stake or interest in southeast Michigan public transportation systems were conducted to gather community interests, identify other unmet transit needs, and engage a more diverse set of groups and organizations to be sure to include a broad range of perspectives. These stakeholders included:

- Oakland University
- Wayne County Community College
- Area Agency on Aging – I B
- Beaumont Hospital
- Ascension Health
- Oakland County Business Roundtable
- Royal Oak Public Transit
- Advancing Macomb
- Detroit Greenways Coalition

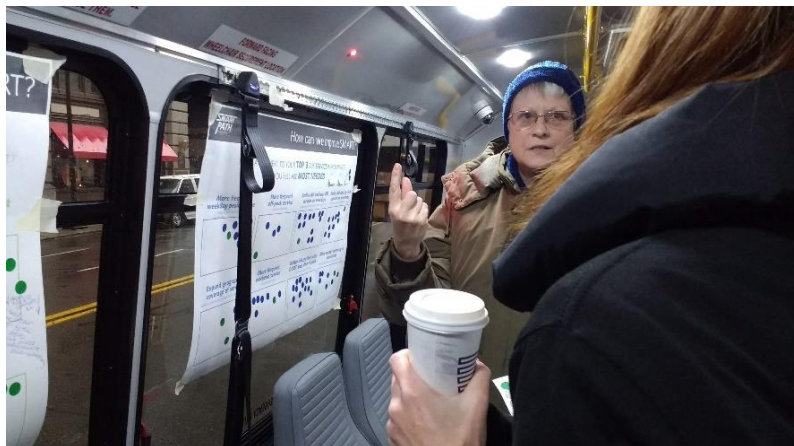
Key takeaways from these interviews include:

- Strong support for public transportation exists among the stakeholders. There was nearly universal agreement that southeast Michigan will need more and better transit service in the future to accommodate trends in changing demographics and people's preference for smaller housing and an easier commute.
- Many stakeholders also expressed frustration with the availability of public transportation in Metro Detroit.
- The local transportation system has not kept pace with regards to infrastructure and technology. SMART needs to enhance public transportation systems and stimulate more economic growth with technological amenities.
- Lack of funding is an on-going problem and public transportation lacks strong political backing for additional funding.
- There is an impression among many community leaders and individuals that public transportation is only for people with low income and older adults. It is necessary to cultivate a new perception of transit by creating a positive message that transit is for a broader group of people including those who can drive and choose to use transit.
- More multi-county or regional services and better service coordination across jurisdictional boundaries are needed.

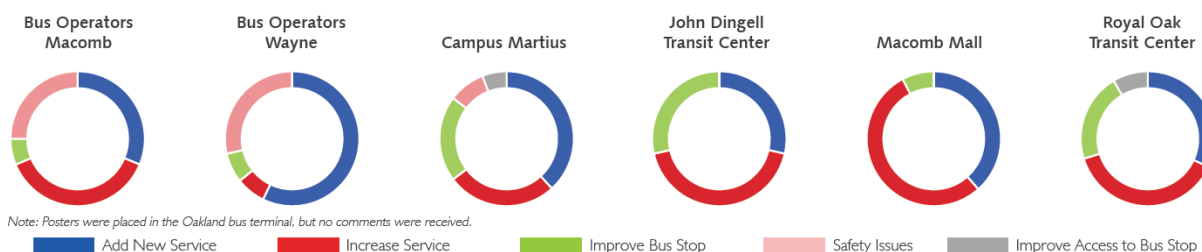
## Public Meetings – Engagement Bus

Multi-day public meetings were held at key locations throughout the SMART service area on November 15 and 16, 2018. To allow further input opportunities outside the traditional format, with a focus on riders, the project team took a WiFi-enabled paratransit vehicle which served as a mobile engagement center to Downtown Detroit, Dearborn Transit Center, Royal Oak Transit Center, and Macomb Mall to meet riders where they were at. In addition, the same materials made available at the mobile engagement center were placed in breakrooms at SMART's terminals to solicit feedback from bus operators as well.

Attendees were asked to place comments of different categories on a map to flag places where they saw an opportunity for improvement. “Add new service”, “increase service” and “improve bus stops” were the top three comment types placed on the map.



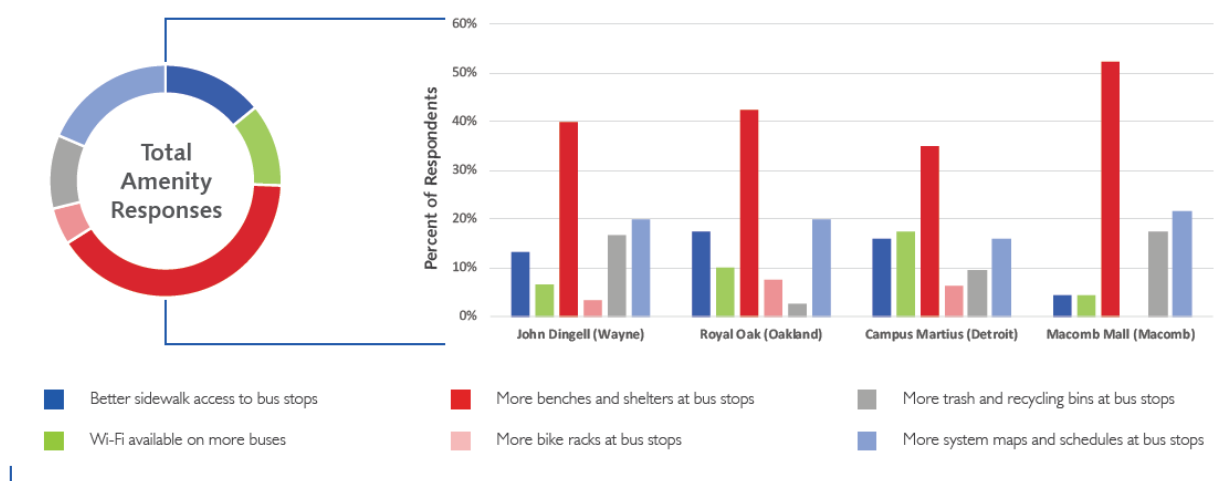
### MAP COMMENT TYPE BY INPUT LOCATION



Attendees were also asked to prioritize certain improvements over others by placing dots in the categories that they valued most. Other than addition and expansion of service, several improvements could provide immediate enhancement to riders' experience based on the results of the prioritization exercise and other comments received during the public meetings:

- For transit facilities, updates to signage and schedules at stops, maintenance of bus station areas, benches and water-proof shelter design, and installations to improve the comfort of the bus station area are recommended.
- Policies addressing diversity and inclusion, boarding and stopping, digital improvements of online and app-based bus tracking as well as onboard WiFi, and simplified fare options are also encouraged as effective methods to improve travel experience.

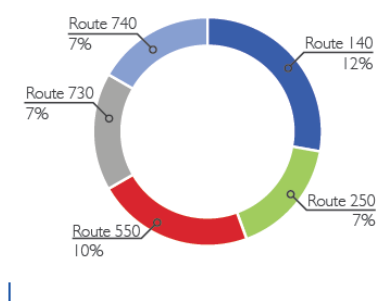
### PRIORITIZATION EXERCISE: AMENITY ENHANCEMENTS



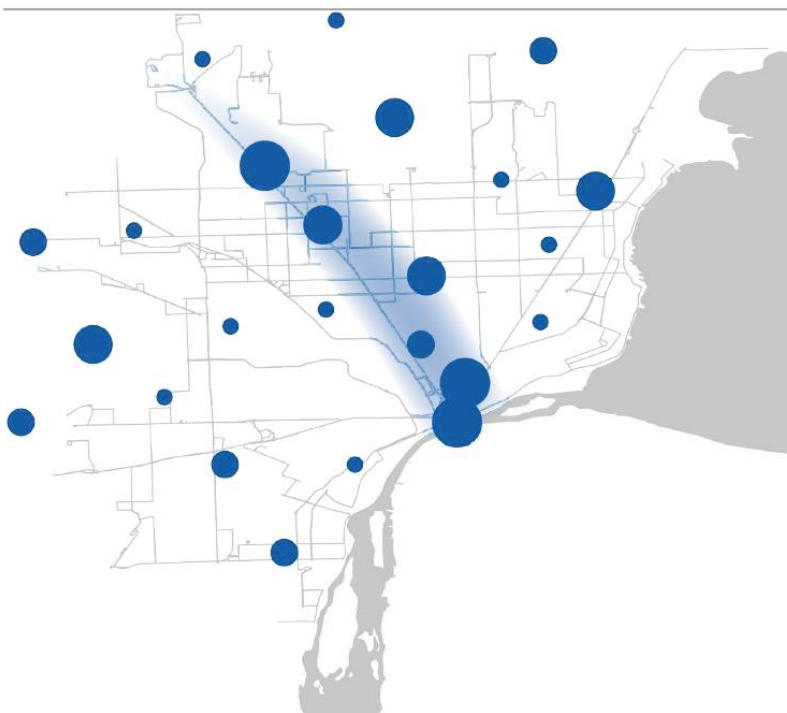
- Higher frequency of service in the early morning and on weekends and holidays, as well as longer hours of operation on 5 particular routes were commonly requested.
- The meetings also received feedback on destinations for new services such as Metroparks, Livonia, Downtown Detroit, Mile Roads, Novi, Canton, and Cranbrook, as well as routes to extend, such as Route 125, Route 140, and Route 250.



## INCREASED SERVICE ROUTES

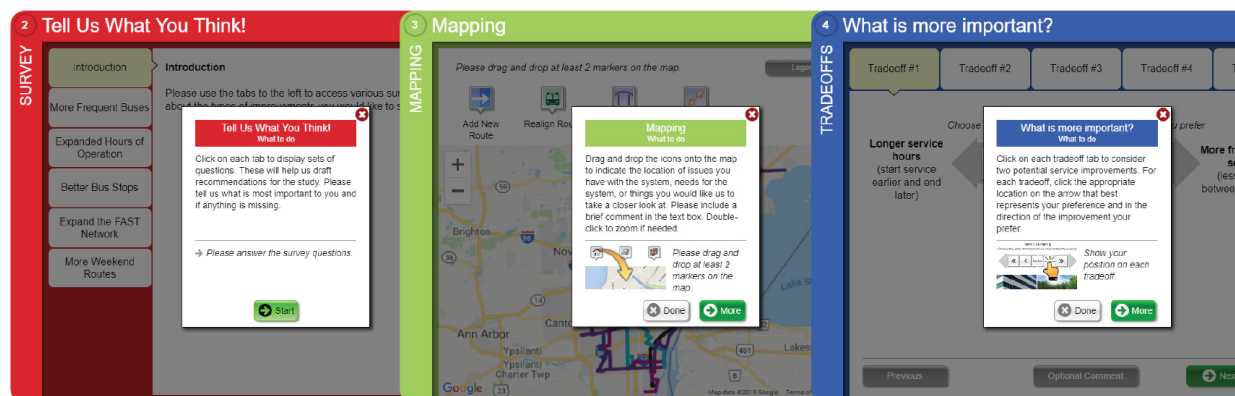


## NEW SERVICE COMMENTS BY GEOGRAPHIC DISTRIBUTION



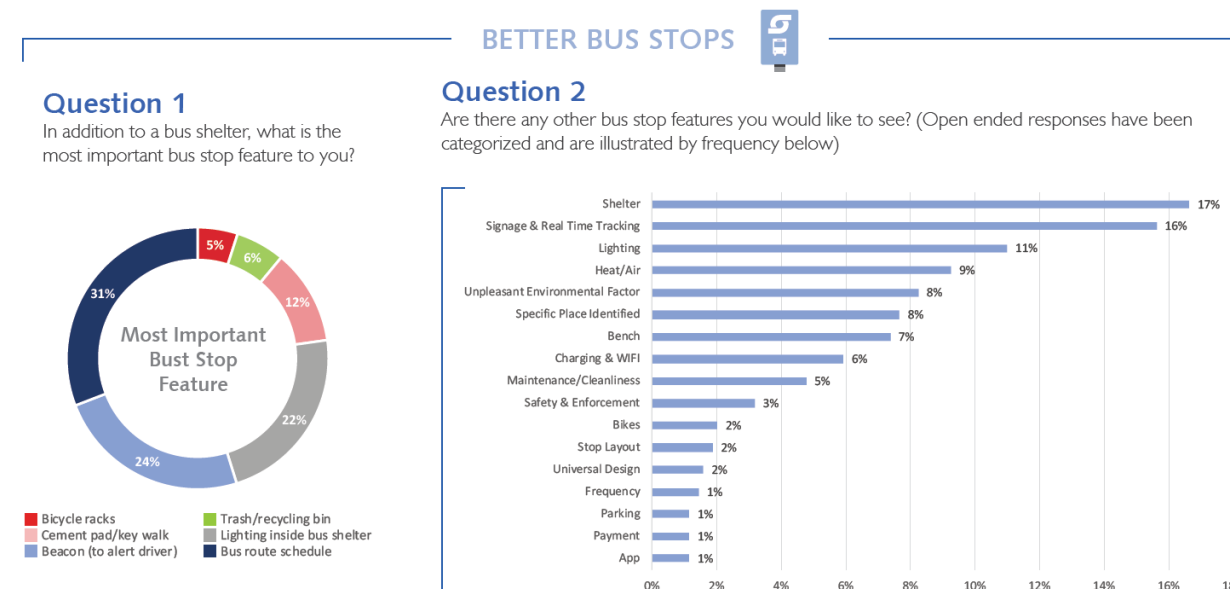
## 6.2 PHASE 2: METROQUEST SURVEY

Building off the results from Phase I engagement, an interactive online survey called “MetroQuest” was generated for both current riders and non-riders to explore trade-offs and route-specific priorities. The survey was open from **February 14 to March 18, 2019** and had 1,321 participants. The results build a better understanding of areas for potential new routes or route expansion and provide insights into existing areas for general and specific route or amenity improvements.



### Survey Section

- Bus route schedules, a beacon (to alert bus drivers), and lighting inside bus shelters were selected as the most important bus stop features, in addition to shelters themselves, signage, and real time tracking.



- Route 562, Route 250 and Route 430 are the top 3 picked routes to run on Saturdays; Route 275, Route 730 and Route 250 are the top 3 picked routes to run on Sundays.

- 461/462 FAST Woodward, Route 275 and Route 740 are the most picked routes to increase in frequency. Participants would mostly like to see the increase in frequency happen during weekday peak travel periods, mid-day weekdays, and Sundays.
- 12 Mile Road, Telegraph Road and Van Dyke Avenue are the top 3 corridors picked for future FAST service, and over half of participants are specifically interested in the higher frequency and suburbs-to-Downtown Detroit-connectivity aspects of FAST service.
- 461/462 FAST Woodward and Route 275 are the most picked routes for extended hours of operation. Over half of participants preferred to see extended hours on weekday mornings and evenings.

## Map Exercise Section

An interactive map was provided as part of the survey to allow respondents to place icons on the map with their specific comments.

### Add New Route

The most popular locations that participants identified for new routes to connect to included:

- Twelve Oaks Mall area in Novi;
- Livonia;
- Rochester and Rochester Hills;
- Hall Road in Macomb County;
- I 6 Mile Road from Bloomfield Township to Lake St. Clair;
- Groesbeck Highway; and
- The area between Woodward Avenue, 8 Mile Road, I-75, and I 5 Mile Road.

### Improve Stop

The most popular locations identified for improved bus stops included:

- In Downtown Detroit;
- Along Woodward Avenue, especially in the North End and New Center neighborhoods of Detroit;
- Along 9 Mile Road;
- Along Van Dyke Avenue, especially at 9 and 10 Mile Roads;
- Along Gratiot Avenue;
- At the Northland Drive / Ascension Providence Hospital area in Southfield;
- At the State Fair Transit Center in Detroit;
- In Downtown Royal Oak; and
- At Lakeside Mall.

### Realign Route

The most popular route realignments identified by participants included:

- Extensions to Novi and Canton if those communities were to opt in;

- Route 330 along Grand River Avenue;
- Gratiot Avenue from 15 Mile Road to 23 Mile Road;
- Oakland Community College – Orchard Ridge Campus in Farmington Hills;
- Extension further Downriver in Wayne County; and
- In Oakland County between 15 Mile Road, Southfield Road, 11 Mile Road, and Livernois Road / Main Street.

### Better Transfer

The most popular locations identified for better transfers included:

- Rosa Parks Transit Center in Downtown Detroit;
- Places with DDOT connections including Grand River Avenue and 7 Mile Road, State Fair Transit Center, and Mack Avenue and Moross Road;
- Downtown Pontiac;
- Royal Oak; and
- Macomb Mall.

### Trade-offs Assessment Section

- “More frequent bus service” was favored over “longer service hours”. Responses on both sides prioritize expansion of weekday evening hours, and more service during weekday peaks is prioritized by those who favor frequency.
- “More weekend service” was favored over “more weekday service”, and those who prioritized weekend service also prioritized Saturday service on Telegraph and 10 Mile.
- “Fewer bus stops (and faster routes)” was favored over “more bus stops (and shorter distance between stops)”. Grand River Avenue was more highly prioritized as a FAST route, and the suburb-to-downtown aspect of FAST service was more important to those who prioritized fewer bus stops.
- “Bus running more frequently but on fewer roads” was favored over “bus running on more streets but less frequently”, and more frequency on weekday peaks was prioritized.
- “Improve existing services” was favored over “serve new areas”. With a difference margin of 18%, this is the most clear trade-off compared to other trade-off questions.



### 6.3 PHASE 3: PUBLIC MEETINGS AND ONLINE COMMENTS

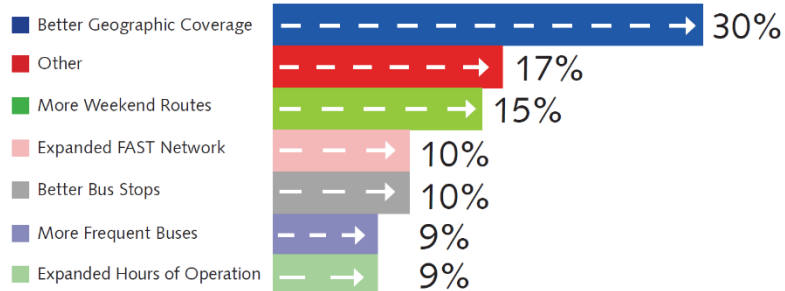
Phase 3 provided an opportunity to connect with riders and stakeholders to delve into route-by-route recommendations which refine alignments based on existing conditions data, land use patterns, route performance data and community input during Phases 1 and 2. Multiple public in-person meetings were held between **October 28 and November 7, 2019** at key locations throughout SMART's service area to present the draft recommendations and engage in one-on-one conversations with participants. Approximately 95 people attended the in-person meetings, and 197 comments were recorded from both online and in-person comment submissions.

30% of comments addressed "better geographic coverage" and 15% of comments addressed "more weekend routes". Other comment topics include: expanded FAST network, better bus stops, more frequent buses and expanded hours of operation. Select comments tracked by route number include:

- "Maintain a stop at Fort/Eureka" on Route 125;
- "Add stop at Henry Ford Museum" on Route 140;
- "Maintain coverage to the Beaumont Service Center" on Route 400;
- "Do not remove service from the Zoo" on Route 730;
- "Make the 13 and 14 Mile routes separate" on Route 760;
- "Consider making it available for Northland Park & Ride at morning and from Downtown Detroit at common work times to arrive downtown to clock in before 8 AM and to leave downtown 15-20 minutes after 4:30 PM" on Route 851;




COMMENT TYPE TOTALS



- Restore former routes that were eliminated on the Cherry Hill and Warren corridors, as well as local SMART service on Michigan, Woodward, Van Dyke, Fort and Gratiot Avenues before any microtransit is implemented.

### OTHER COMMENT TYPES

 <p><b>Signage</b></p> <ul style="list-style-type: none"> <li>• Update signage and schedules at all stops; include bilingual materials</li> <li>• Improve wayfinding signage at the airport</li> </ul>	 <p><b>Inclusion</b></p> <ul style="list-style-type: none"> <li>• Diversity &amp; inclusion training for transit staff</li> <li>• Improve outreach to seniors/senior living facilities</li> </ul>	 <p><b>Internal Policies</b></p> <ul style="list-style-type: none"> <li>• Bus kneeling for loading/unloading bikes</li> <li>• Require stopping at all designated stops where people are present inside shelters</li> <li>• Allowing strollers to be wheeled on-board</li> </ul>	 <p><b>Digital</b></p> <ul style="list-style-type: none"> <li>• SMART website user interface improvements</li> <li>• Improve accuracy and reliability of real-time information on Transit app and SMART app</li> <li>• Allow paratransit rides to be reserved on website from any location</li> </ul>	 <p><b>Fare</b></p> <ul style="list-style-type: none"> <li>• Increase number of locations that sell bus passes</li> <li>• Reconsider fare structures; too many options; confusing</li> </ul>	 <p><b>Comfort</b></p> <ul style="list-style-type: none"> <li>• Snow clearance and trash clean-up at bus stops</li> <li>• Better maintained and cleaner buses</li> <li>• Improved weather-proof shelter designs</li> </ul>
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A full list of all the public engagement events with dates and times is provided in the Appendix.

## 7.0 FIXED ROUTE ISSUES AND STRATEGIES

The recommendations presented in this Plan are designed to build on the foundation of the existing SMART fixed route network. The recommended service plan is focused on the implementation of a network that improves ridership and productivity of the service and the rider experience through an emphasis on service reliability, faster more direct routing, building out the successful FAST network, and improving overall coverage through lower cost innovative service delivery such as microtransit.

**Microtransit** is a transportation service which includes smaller vehicles with flexible, “on-demand” routing; partnerships between transit agencies and technology providers; and mobile apps for ride hailing, navigation, and payment. Microtransit can provide improved access to transit for people and places that fixed bus routes do not serve well, more directly matched



supply of service to the demand for rides, shorter wait times, and greater flexibility to hail a ride when you need one via an app or phone call. SMART does not currently operate any microtransit service, but this plan outlines how it might be incorporated into the SMART system in the future.

The COA Plan is divided into three phases over the five-year planning horizon. Phase I outlines the service recommendations for the first year (FY2021). Phase II focuses on the next two years of the planning period (FY2022 – FY2023) and Phase 3 outlines the last two years of the plan (FY2024 – FY2025). Service recommendations for changes after the five-year period will be discussed at a high level in a final phase.

### Fixed Route Service Plan

The Existing Conditions Report provided detailed analysis of data gathered for this planning effort. Data sources included:

- Passenger surveys and boarding counts
- Assessment of projected population growth and development
- Service and operations analysis
- Interviews with key stakeholders and drivers
- Public meetings
- Online MetroQuest surveys
- Field observations

Analyzing all of the information gathered for this effort, as well as historical performance trends for SMART, a number of key operational/service issues were identified:

- On-time performance issues
- Inconsistent headways, need for simpler clock face headways
- Out of direction, circuitous routing segments
- Low ridership and productivity on route segments
- Long cycle times on some Crosstown routes
- Infrequent service on Crosstown routes
- Limited route options on weekends
- Simpler service at the airport
- Improved connections to workforce locations such as Amazon distribution centers and to DDOT service
- Use of new technology and innovative services to provide coverage to low density areas
- Faster travel times on primary corridors currently not served by FAST service

The recommendations in the Plan are designed to maintain the balance of service between the three service member counties.

SMART will need to continue to provide equitable service that meets the requirements of the Title VI Civil Rights Act of 1964 (Title VI). Title VI ensures that no person shall be excluded from participation in, denied benefits of or be subjected to discrimination on the basis of race, color, or national origin under any program receiving federal financial assistance. A Title VI analysis of the recommendations will be done separately from the COA report.



## 8.0 FIXED ROUTE RECOMMENDATIONS

The recommendations for Phases 1 - 3 are outlined in the following sections and they are based on these guiding principles developed for the COA:

**Service should be simple!** For people to use transit, service should be designed so that it is easy to use and intuitive to understand.

**Service should operate at regular intervals.** In general, people can easily remember repeating patterns but have difficulty remembering irregular sequences.

**Routes should operate along a direct path.** The fewer directional changes a route makes, the easier it is to understand. Circuitous alignments are disorienting and difficult to remember.

**Routes should be symmetrical.** Routes should operate along the same alignment in both directions to make it easy for riders to know how to get back to where they came from.

**Routes should serve well-defined markets.** The purpose of a route should be clear, and each should include strong anchors and a mix of origins and destinations.

**Service should be well coordinated.** At major transfer locations, schedules should be coordinated to the greatest extent possible to minimize connection times for the predominant transfer flows.

**Service should be reliable.** Routes should have enough recovery time built into their schedules to maintain on-time performance.

### 8.1 PHASE 1 RECOMMENDATIONS – COST NEUTRAL

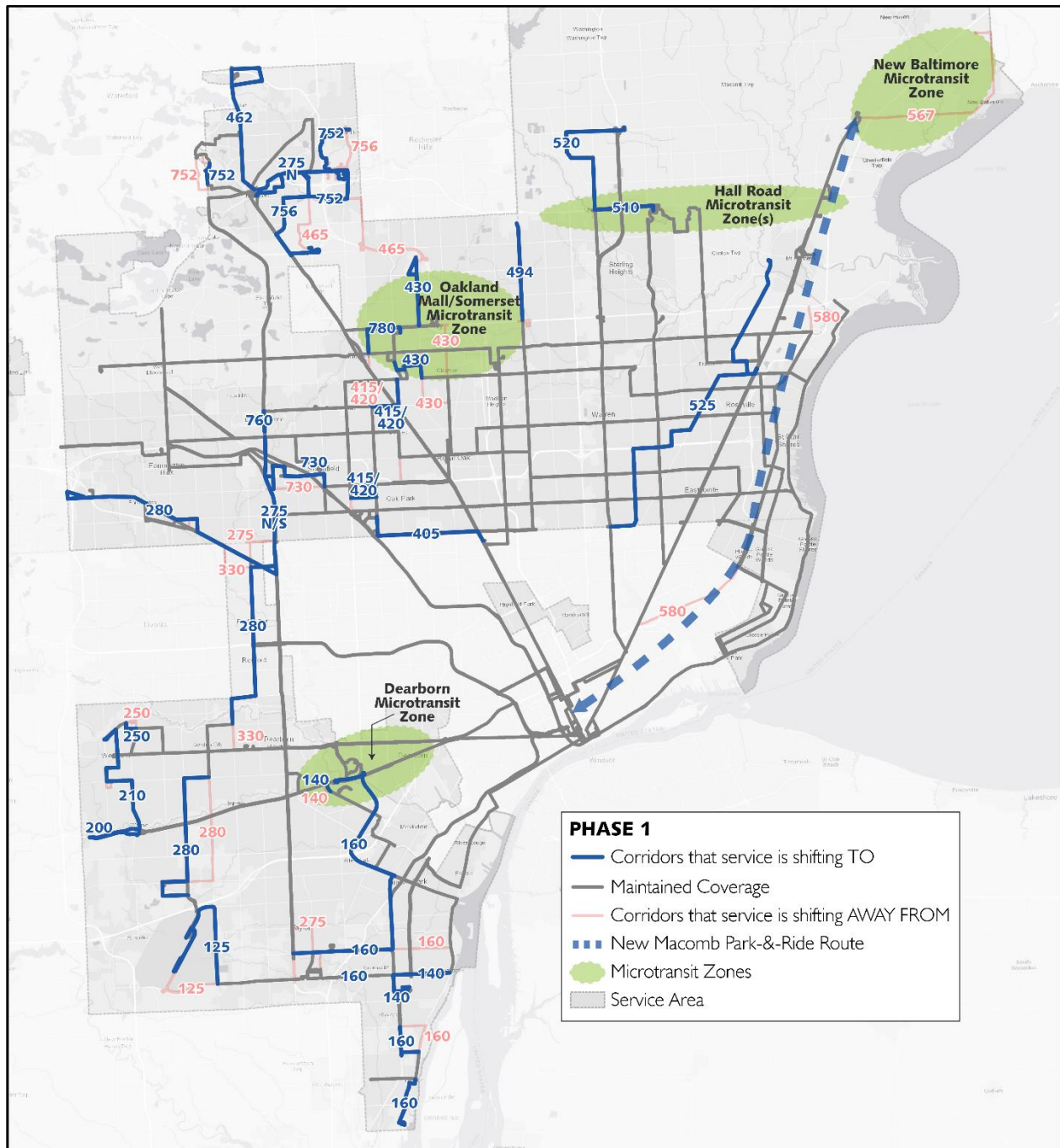
The recommended short range plan to be implemented in the first year responds to the core issues of productivity and reliability of service. The recommendations can be implemented without net increases in operating cost and minimal capital costs for new bus stops. Major features of the service recommendations include:

- Route realignments for more efficient and productive geographic coverage
- Schedule modifications for improved on-time performance and legibility to riders
- Microtransit pilot projects for enhanced on-demand transit service

Some routes in the Plan will be interlined to allow for greater efficiency of service and more one-seat trips.

The following section provides explanations of the recommended changes for each route. Route-specific maps are provided only for those routes whose alignment is recommended to change. The Phase 1 route network is shown in **Figure 50**.

Figure 50: Phase I Recommendations

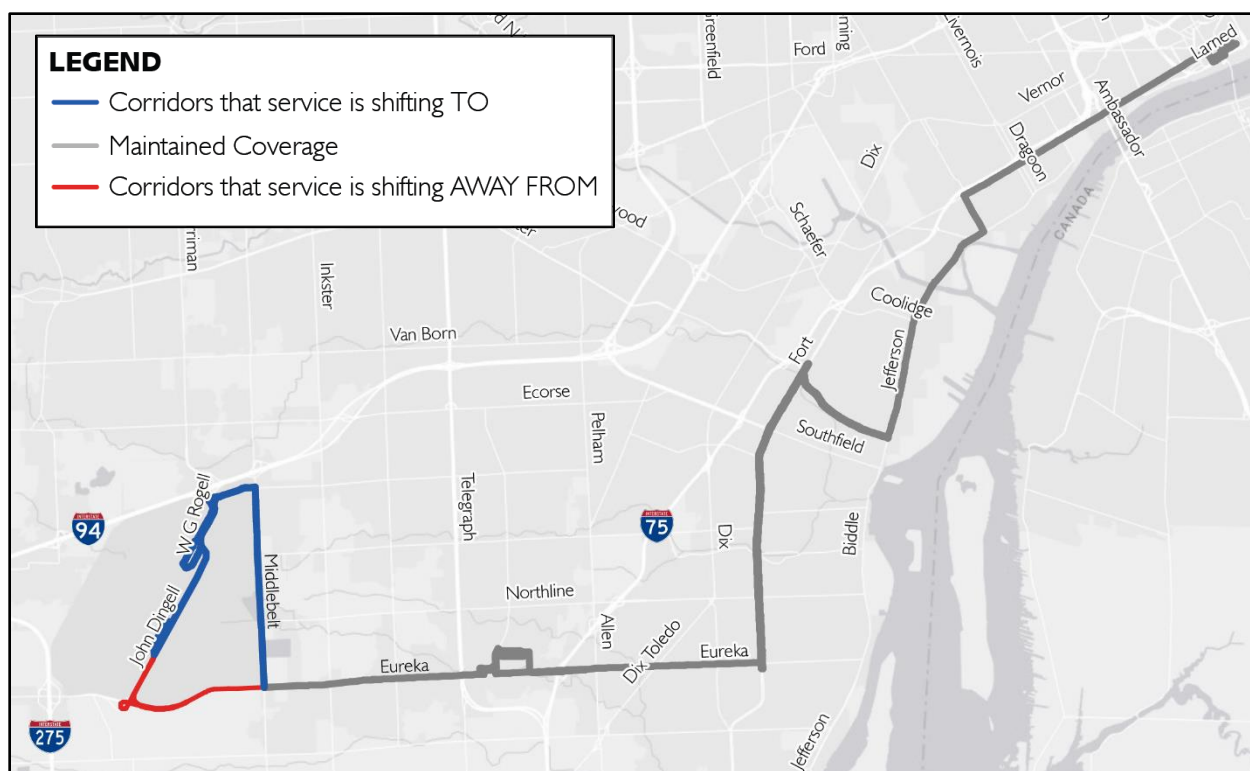


## Route 125 Fort St-Eureka Rd

The 125 Fort St-Eureka Rd route is a Main Corridor route from the Detroit Metropolitan Airport to Downtown Detroit during the peak period or W Jefferson/Coolidge during the off-peak period. It has a high frequency and high ridership, but poor on-time performance, especially in the afternoon and evening peak. It also has a long and circuitous alignment, especially when traveling downtown.

### Routing Changes

Under the Phase I recommendations, Route 125 would no longer have separate branches to each of the airport terminals; all trips would access both terminals via Middlebelt Road, enabling riders to get to either terminal no matter which trip they take. Additional recovery time was added to the route to help improve on-time performance issues.



### Proposed Service Levels

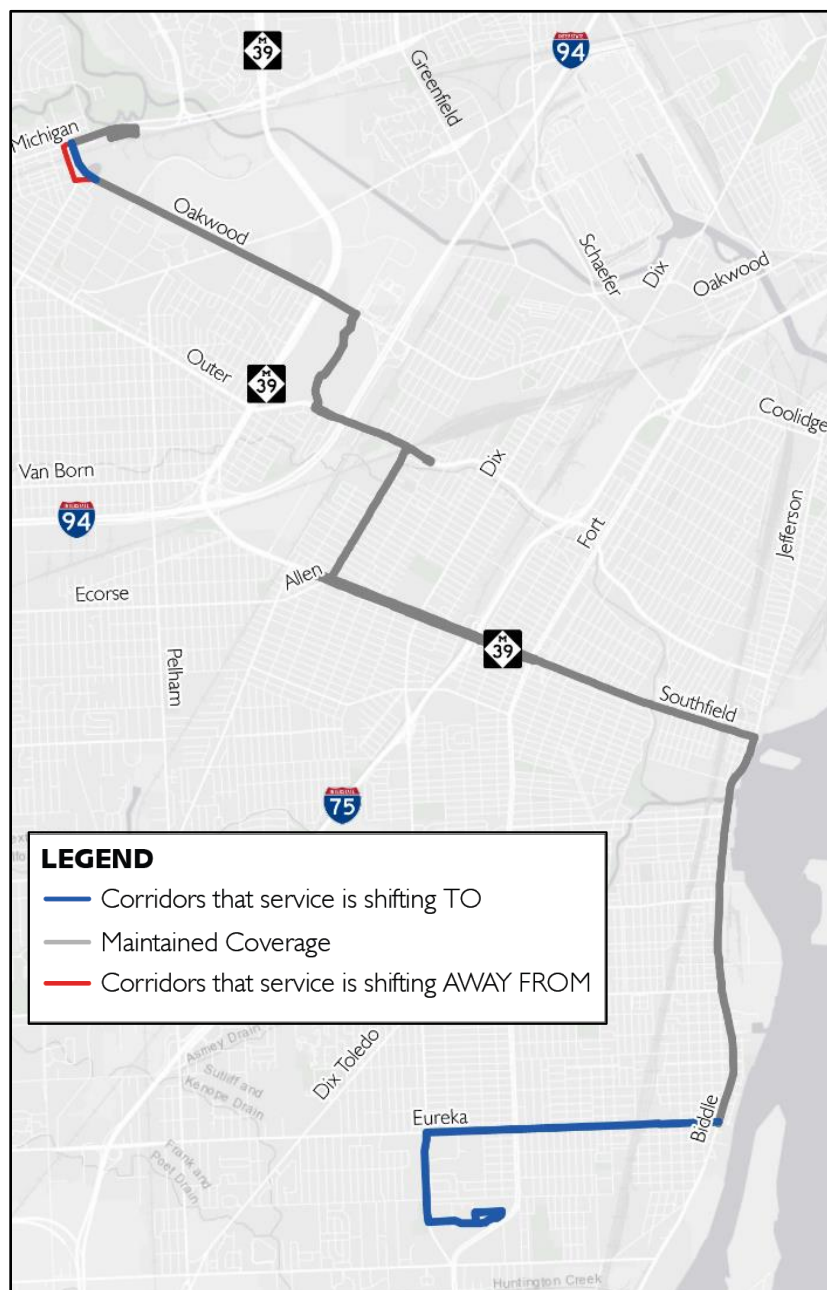
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 11:00 pm (18 hours)	30	40
Saturday	5:30 am – 10:30 pm (17 hours)	40	40
Sunday	6:00 am - 9:00 pm (15 hours)	75	75

## Route 140 Southshore

The I 40 Southshore route is a Crosstown route from the Dearborn Transit Center to Wyandotte City Hall. It is a low productivity route with a relatively weak anchor at Wyandotte City Hall.

### Routing Changes

Under the Phase I recommendations, Route 140 would extend to the Meijer in Southgate. This would create a stronger anchor and provide more potential for bi-directional ridership. In addition, Route 140 would stay on Oakwood Boulevard when turning onto or off Michigan Avenue.



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:30 am – 8:30 pm (14 hours)	60	60



## Route 160 Downriver

The I 60 Downriver route is a Community route from Southland Center to West and Grange Road in Trenton. It is a low productivity route with a very circuitous alignment with low ridership along Jefferson between King and Sibley Road, and relatively low ridership along Ford Avenue west of Fort Street.

### Routing Changes

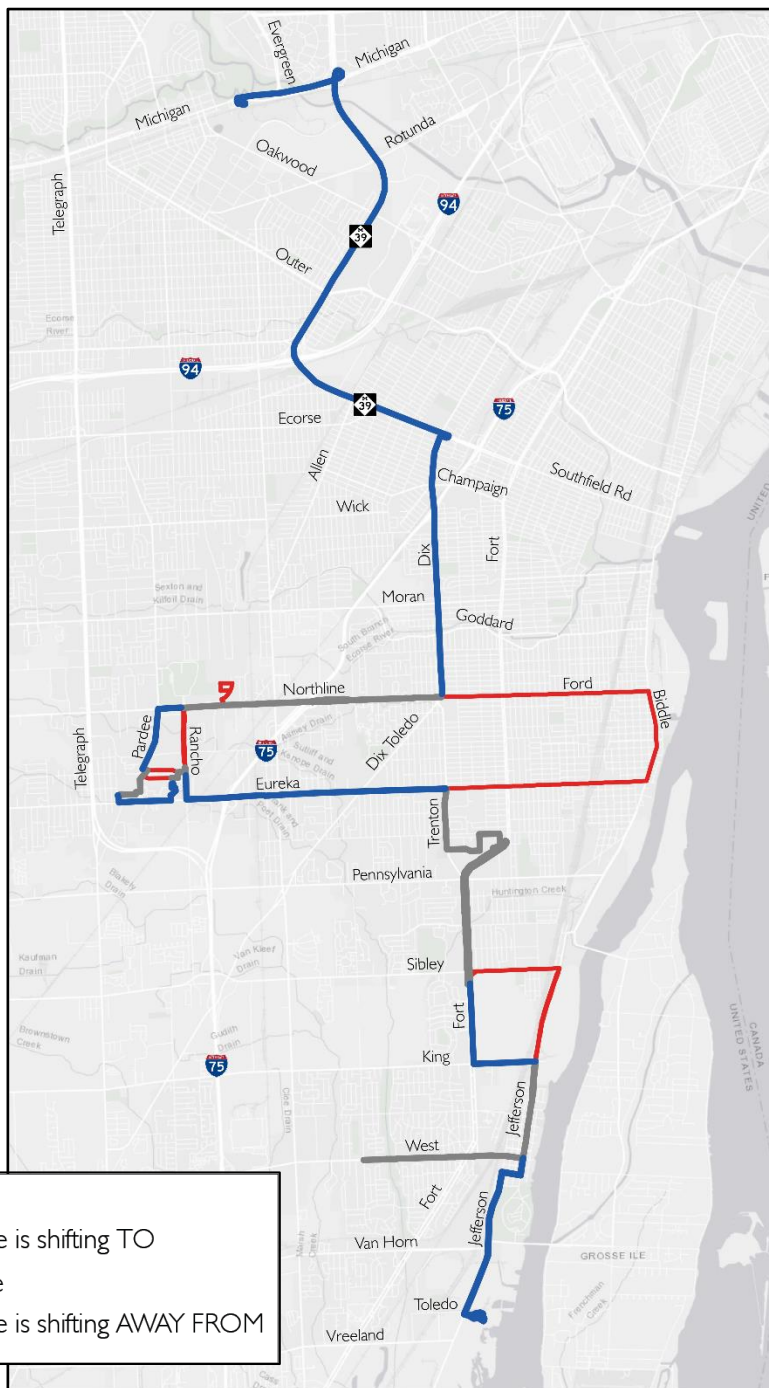
Under the Phase I recommendations, Route 160 would extend to the Dingell International Wildlife Preserve for trips in both directions and would be streamlined along Fort Street to eliminate the low-ridership segment. Service would shift to the Southland Center from Ford Avenue to Eureka Road and extend north along Dix Highway and the Southfield Freeway to the Dearborn Transit Center in order to provide greater connectivity Downriver.

### Interlines

Under the Phase I recommendations, Route 160 would interline with **Route 250**.

#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM



### Proposed Service Levels

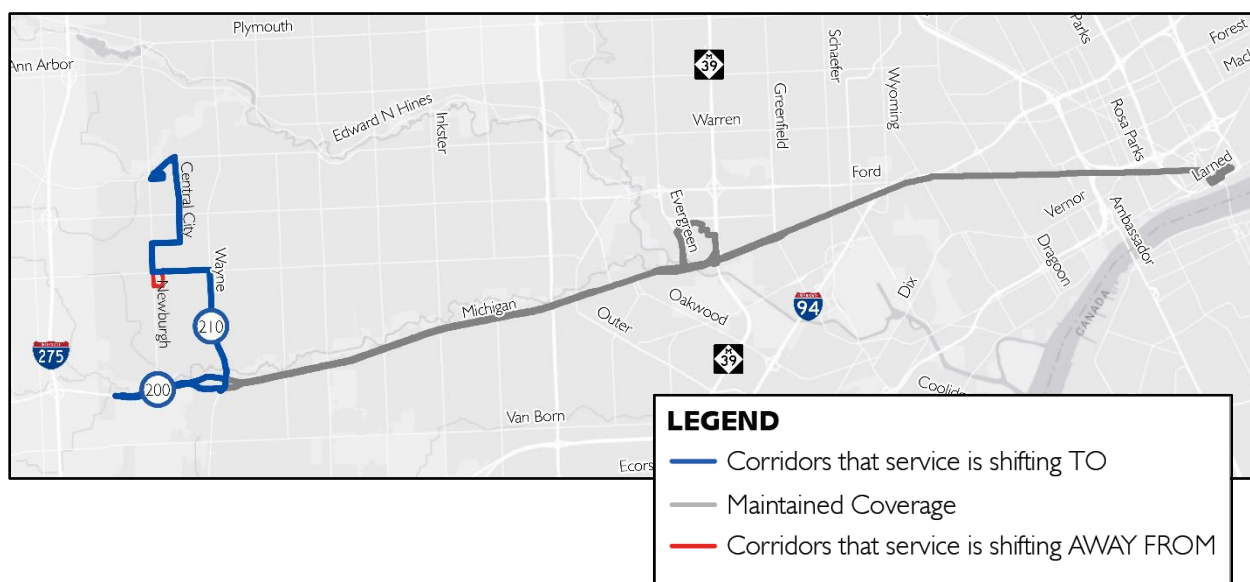
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 9:00 pm (15 hours)	60	60
Saturday	9:00 am - 5:00 pm (8 hours)	75	75

## Route 200 Michigan Ave Local

The 200 Michigan Ave Local route is a Main Corridor route from Downtown Detroit during the peak period or Fairlane Town Center during the off-peak period to either the Ford Michigan Assembly Plant in Wayne or Newburgh/Enterprise in Westfield. It has a high frequency and fair productivity overall with fairly weak anchors on both branches, especially the northern branch. As currently aligned, this route misses the opportunity to serve Ford Headquarters.

### Routing Changes

Under the Phase I recommendations, Route 200's two branches would be separated into two different routes to serve the Michigan Avenue corridor more frequently and simplify the route's schedule; the terminating destination of the route would no longer alternate, but instead be served consistently like every other stop on the route (much like Route 461 -462). The eastern branch (proposed Route 200) would follow the current 200's alignment to the Ford Michigan Assembly Plant, while the northern branch (proposed Route 210) would follow the current 200's northern alignment to Howard Termes Packaging and extend farther north to Meijer in Westland via Newburgh Road, Cherry Hill Road, Central City Parkway, and Warren Road. These changes would establish a stronger anchor for the route and open the ability to serve Westland Mall on the weekends.



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 12:00 am (19 hours)	30 (60 for branches)	40 (80 for branches)
Saturday	5:00 am – 12:00 am (19 hours)	45 (90 for branches)	45 (90 for branches)
Sunday	5:00 am – 11:00 pm (18 hours)	45 (90 for branches)	45 (90 for branches)

## Route 250 Ford Rd

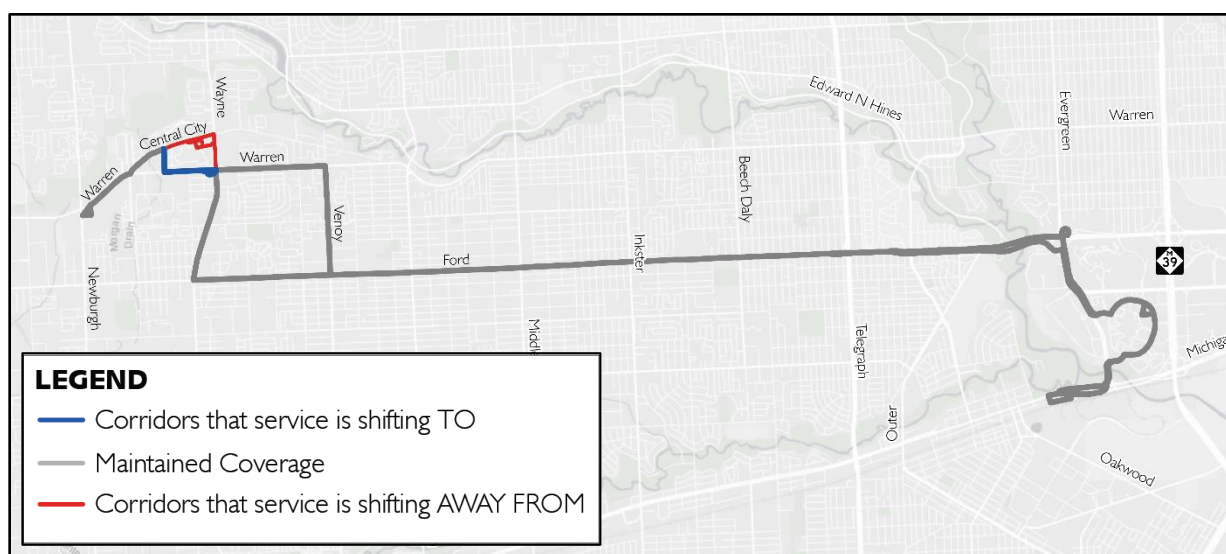
The 250 Ford Rd route is a Crosstown route from Dearborn Transit Center to Meijer in Westland. It has a moderate frequency and productivity with inconsistent inbound and outbound alignments along Wayne Road and Venoy Road.

### Routing Changes

Under the Phase I recommendations, Route 250 service at Westland Center would shift from Wayne Road and Central City Parkway to Warren Road and Nankin Boulevard to better serve the West Ridge Shopping Center on the south side of Warren Road.

### Interlines

Under the Phase I recommendations, Route 250 would interline with **Route 160**.



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 9:00 pm (15 hours)	60	60

### Route 255 Ford Rd Express

The 250 Ford Rd Express route is a Commuter route with peak-period directional service from Westland Park-&-Ride to Downtown Detroit. It has moderate productivity.

#### Routing Changes

Under the Phase I recommendations, Route 255 would remain the same as current.

#### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	6:00 am – 9:00 am 3:30 pm – 6:30 pm (Peak Period Only)	35

### Route 261 FAST Michigan

The 261 FAST Michigan route is a FAST route between Downtown Detroit and the Detroit Metropolitan Airport via Michigan Avenue. It deviates to serve the Amazon facility on Ecorse Road in Romulus on select trips. The route has a high peak frequency with moderate ridership per trip but inconsistent service frequency.

#### Routing Changes

Under the Phase I recommendations, Route 261 would remain the same as current.

#### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 11:00 pm (18 hours)	30	50 (only the last 2 hours of service)
Saturday	5:00 am – 11:00 pm (18 hours)	30	50 (only the last 4 hours of service)
Sunday	6:00 am – 10:00 pm (16 hours)	50	50



## Route 275 Telegraph

The 275 Telegraph route is a Crosstown route from Taylor to Pontiac via Telegraph Road. It has a high peak frequency with an hourly off-peak and high ridership per trip. The route has poor on-time performance during the afternoon peak and evening hours.

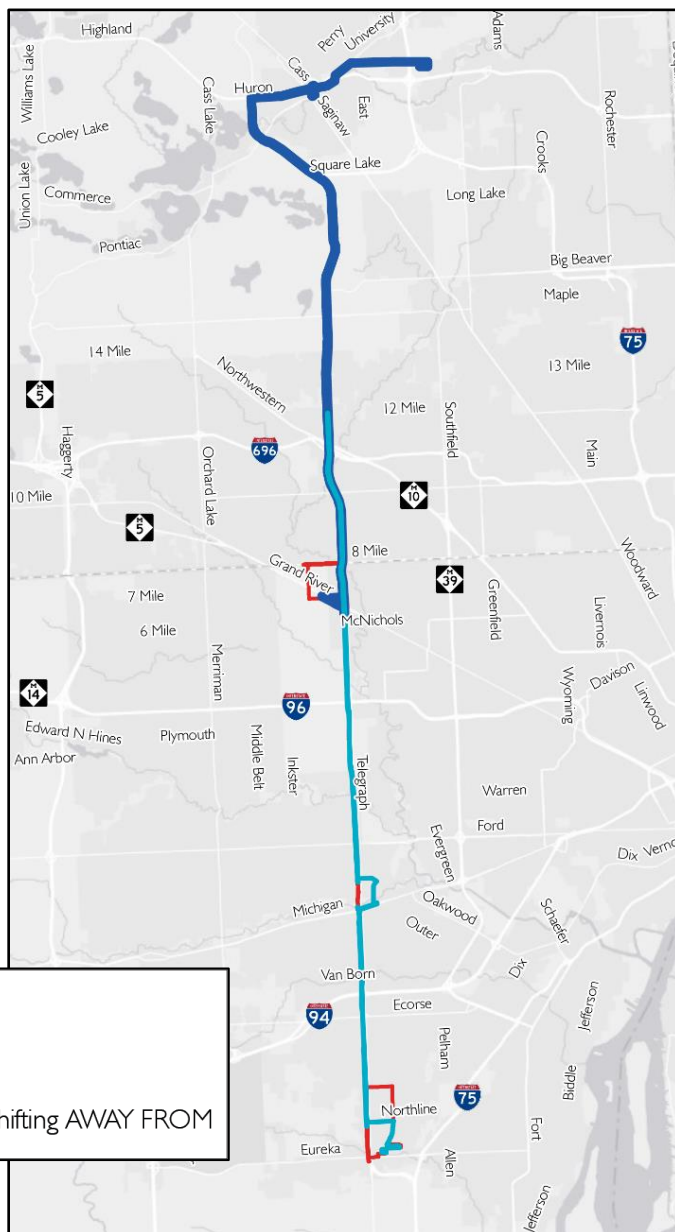
### Routing Changes

Under the Phase I recommendations, Route 275 would become two separate routes overlapping along Telegraph Road between 12 Mile Road and 7 Mile Road / Grand River Avenue. Passengers could transfer to the other route at any stop within this segment. Splitting the route is intended to create better on-time performance. The two routes terminate as described:

- 275 North: from Oakland Community College – Auburn Hills Campus to 7 Mile Road / Grand River Avenue
- 275 South: from Southland Center in Taylor to 12 Mile Road

#### LEGEND

- New 275 North route
- New 275 South route
- Corridors that service is shifting AWAY FROM



### Proposed Service Levels

#### 275 North

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:30 am – 10:30 pm (17 hours)	60	60
Saturday	6:30 am – 10:30 pm (16 hours)	60	60

#### 275 South

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:30 am – 10:30 pm (17 hours)	60	60
Saturday	6:30 am – 10:30 pm (16 hours)	60	60

## Route 280/330

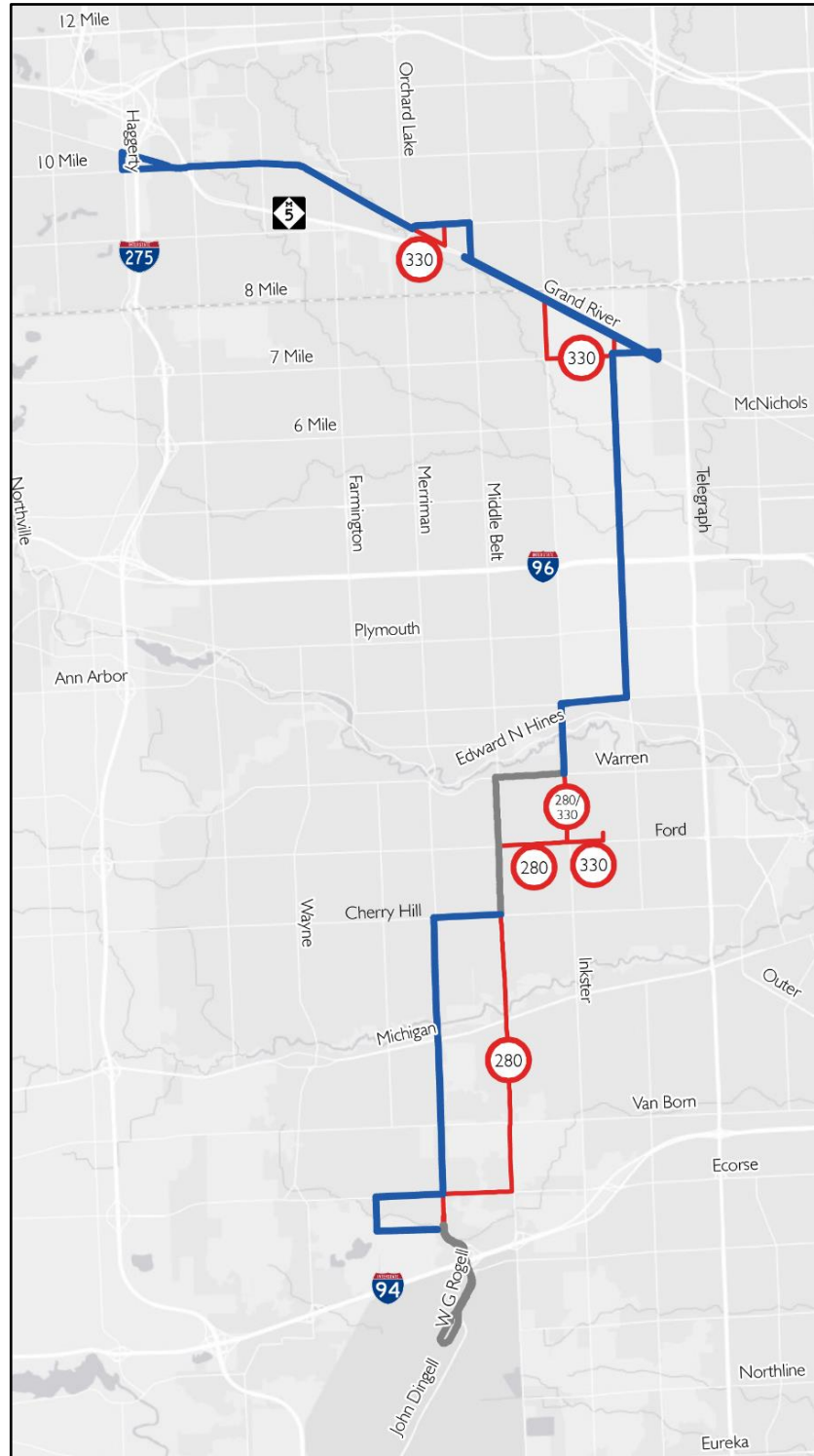
### Middlebelt-Grand River

The 280 Middlebelt South route is a Community route between the Detroit Metropolitan Airport and Warren Road in Garden City via Middlebelt Road. It has an hourly service frequency and relatively low ridership per trip.

The 330 Grand River-Beech Daly route is a Crosstown route between the Grand River Avenue corridor in Farmington Hills and Ford Road in Dearborn Heights. It has a moderate frequency during peaks and low frequency during off-peaks. Ridership on this route is heavily concentrated along Grand River Avenue and is fairly low south of 7 Mile Road.

### Routing Changes

Under the Phase I recommendations, Route 280 would shift service from Middlebelt Road south of Cherry Hill Road to Merriman Road in order to serve more retail and medical destinations, as well as several multi-family housing communities. The route would also serve the Amazon facility on Ecorse Road and extend to Grand River Avenue covering the alignment of the existing Route 330 with streamlined routing. The additional destinations along this route would now be connected to the airport. These changes address poor ridership south of 7 Mile Road and enable Route 280 to provide connections to more places.



#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:30 am – 9:30 pm (16 hours)	60	60
Saturday	5:30 am – 9:30 pm (16 hours)	60	60
Sunday	6:00 am – 7:00 pm (13 hours)	60	60

### Route 400 Southfield-Orchard Ridge

The 400 Southfield-Orchard Ridge route is a Community route between Providence Hospital in Southfield and Oakland Community College – Orchard Lake Campus in Farmington Hills. It has a moderate peak frequency and a 90-minute off-peak frequency with low ridership per trip and poor on-time performance.

### Routing Changes

Under the Phase I recommendations, Route 400 would remain the same as current.

### Proposed Service Levels – same as current

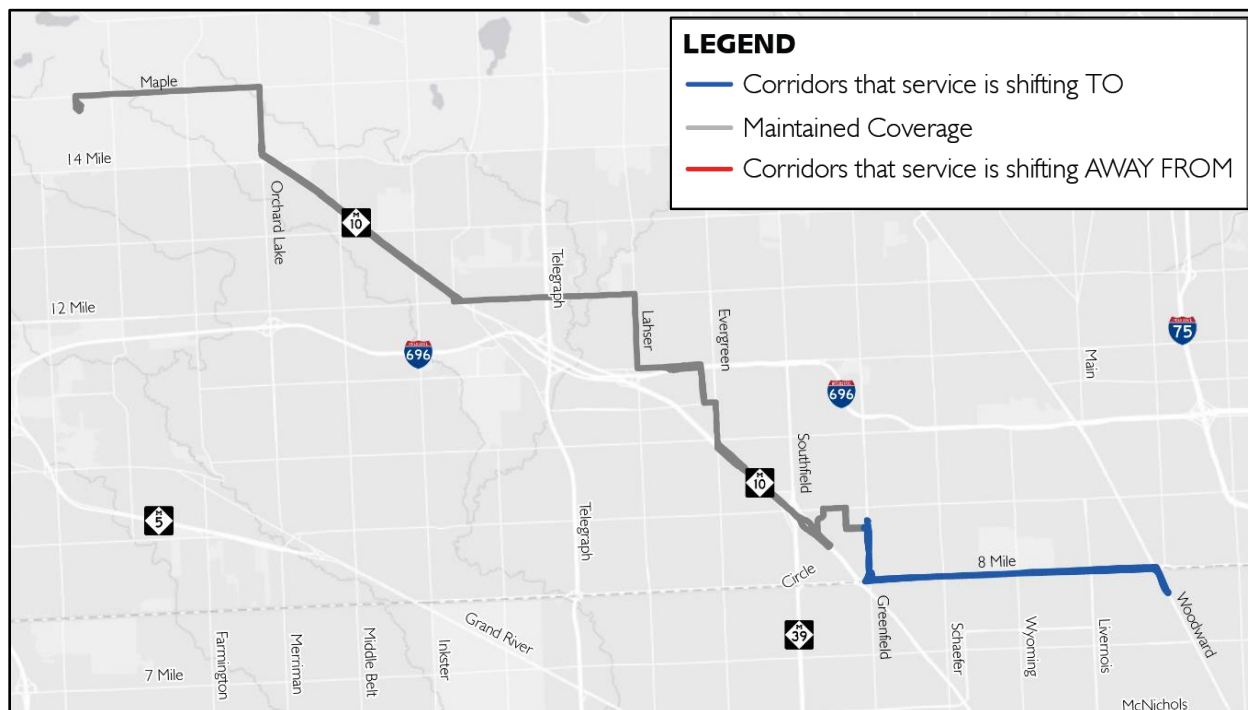
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:18 am - 7:52 pm (13.6 hours)	30 – 45	90

## Route 405 Northwestern Highway

The 405 Northwestern Highway route is a Crosstown route between Henry Ford Medical Center in West Bloomfield and Providence Hospital in Southfield. It has a moderate peak frequency and a 60-minute off-peak frequency. Ridership is low except for a few peak trips.

### Routing Changes

Under the Phase I recommendations, Route 405 would extend east to maintain a connection to the State Fair Transit Center in Detroit in lieu of the current connectivity via **Route 415-420**.



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 8:00 pm (14 hours)	50	50
Saturday	8:00 am – 8:00 pm (12 hours)	50	50



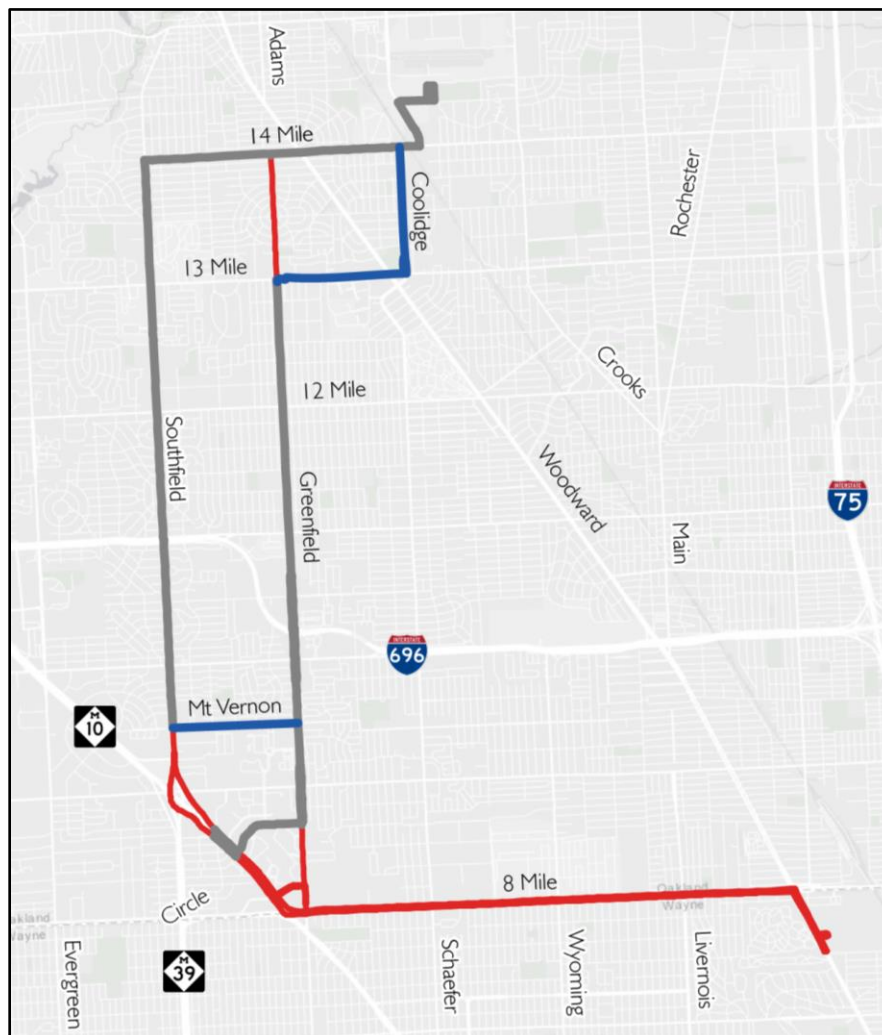
## Route 415-420

### Greenfield-Southfield

The 415 Greenfield route and the 420 Southfield route are Community routes between State Fair Transit Center in Detroit and Meijer in Royal Oak via 8 Mile Road and Greenfield or Southfield Road. The routes have a moderate peak frequency and a 60-minute off-peak frequency. Ridership is moderate for each trip.

#### Routing Changes

Under the Phase I recommendations, Route 415 and Route 420 would interline at Meijer and Providence Hospital to create a bi-directional loop operating along both Greenfield and Southfield Road. This would eliminate service to the State Fair Transit Center and shift the route to 13 Mile Road and Coolidge Hwy from Greenfield Road. These changes would help improve connectivity between Southfield Road and Greenfield Road and provide access to Beaumont Hospital in Royal Oak. Trips to Detroit could instead be made on the recommended **Route 405** or via DDOT connections at Providence Hospital.



#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM

#### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak/Midday	Evening
Weekday	5:30 am – 10:30 pm (17 hours)	30	60 (only the last 2 hours of service)
Saturday	6:00 am – 10:00 pm (16 hours)	30	60 (only the last 4 hours of service)
Sunday	8:00 am – 8:00 pm (12 hours)	60	60

## Route 430 Main Street – Big Beaver

The 430 Main Street – Big Beaver route is a Community route between Royal Oak Transit Center and the Somerset Collection in Troy via Main Street/Livernois Road and Big Beaver Road. The route operates with one trip per direction to Royal Oak High School, during peak periods only. The route has low ridership.

### Routing Changes

Under the Phase I recommendations, Route 430 would operate bi-directionally for the entire route, eliminating the one-way loop in the center of the route. The route would also be extended to the Central Michigan University Troy Center via Crooks Road, overlapping partially with the existing **Route 465**. The route would no longer operate along Livernois Road. These changes would help connect passengers to the Troy Internal Medicine facility, as well as other key destinations.

#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	6:30 am – 9:30 am 2:00 pm – 7:00 pm (Peak Period Only)	50

### Route 445 Maple & Telegraph Limited

The 445 Maple & Telegraph Limited route is a Commuter route between Downtown Detroit and Maple at Telegraph Road in Bloomfield Township. The route operates with four trips northbound and three trips southbound. Route 445 has low ridership per trip except on the first northbound trip.

#### Routing Changes

Under the Phase I recommendations, Route 445 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	6:30 am - 8:30 am 4:00 pm - 7:00 pm (Peak Period Only)	20 – 40

### Route 450-460 Woodward Local

The 450-460 Woodward Local route is a Main Corridor route via Woodward Avenue between Downtown Detroit and Phoenix Center in Pontiac or Somerset Collection in Troy. The route operates with high frequencies and has moderate to high ridership per trip.

#### Routing Changes

Under the Phase I recommendations, Route 450-460 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	4:26 am - 2:35 am (22.2 hours)	15	15
Saturday	4:55 am - 2:24 am (21.5 hours)	20	20
Sunday	5:46 am - 12:51 am (19.1 hours)	25	25

## Route 461-462 FAST

### Woodward

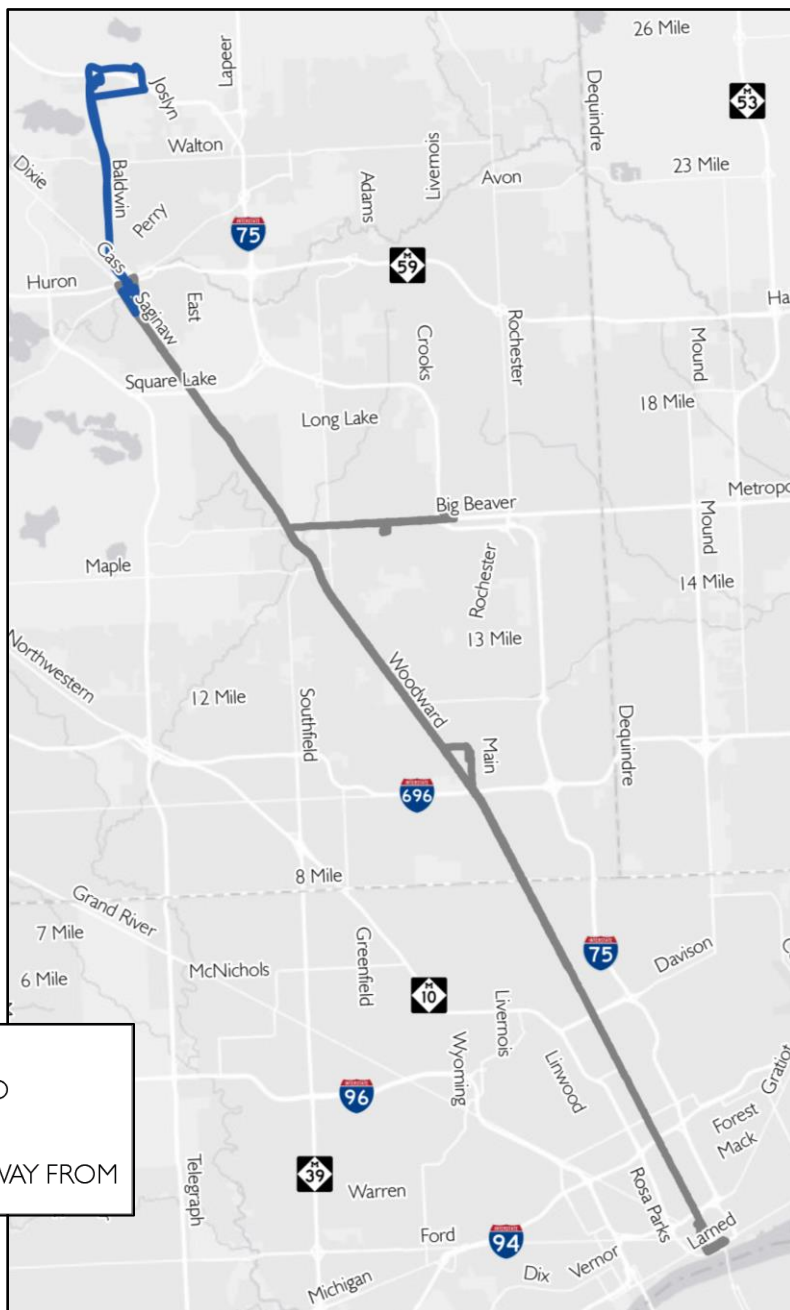
The 461-462 FAST Woodward route is a FAST route with two branches connecting Downtown Detroit to Troy Civic Center (Route 461) and Phoenix Center (Route 462) via Woodward Avenue. The route operates with high frequencies and has moderate ridership per trip. Overall, however, the route has high ridership performance, but poor on-time performance.

### Routing Changes

Under the Phase I recommendations, Route 462 would extend north along Baldwin Avenue, following the current Route 753 alignment, in order to provide access to Great Lakes Crossing. Recovery time was added to help improve reliability.

#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:00 am – 2:00 am (21 hours)	20 where the routes overlap 40 in the separate branches
Saturday	5:00 am – 1:00 am (20 hours)	20 where the routes overlap 40 in the separate branches
Sunday	6:00 am – 11:00 pm (17 hours)	25 where the routes overlap 50 in the separate branches



## Route 465 Auburn Hills Limited

The 465 Auburn Hills Limited route is a Commuter route between Downtown Detroit and Courtyard Parkway in Pontiac via Oakland Community College – Auburn Hills, Chrysler Technology Center, and Cooley Law School in Auburn Hills. The route operates with four trips per day and has low ridership per trip.

### Routing Changes

Under the Phase I recommendations, Route 465 would be eliminated. The route has low ridership performance, and its alignment is largely covered by other routes in the system (see **Route 430** and **Route 756**).

## Route 494 Dequindre

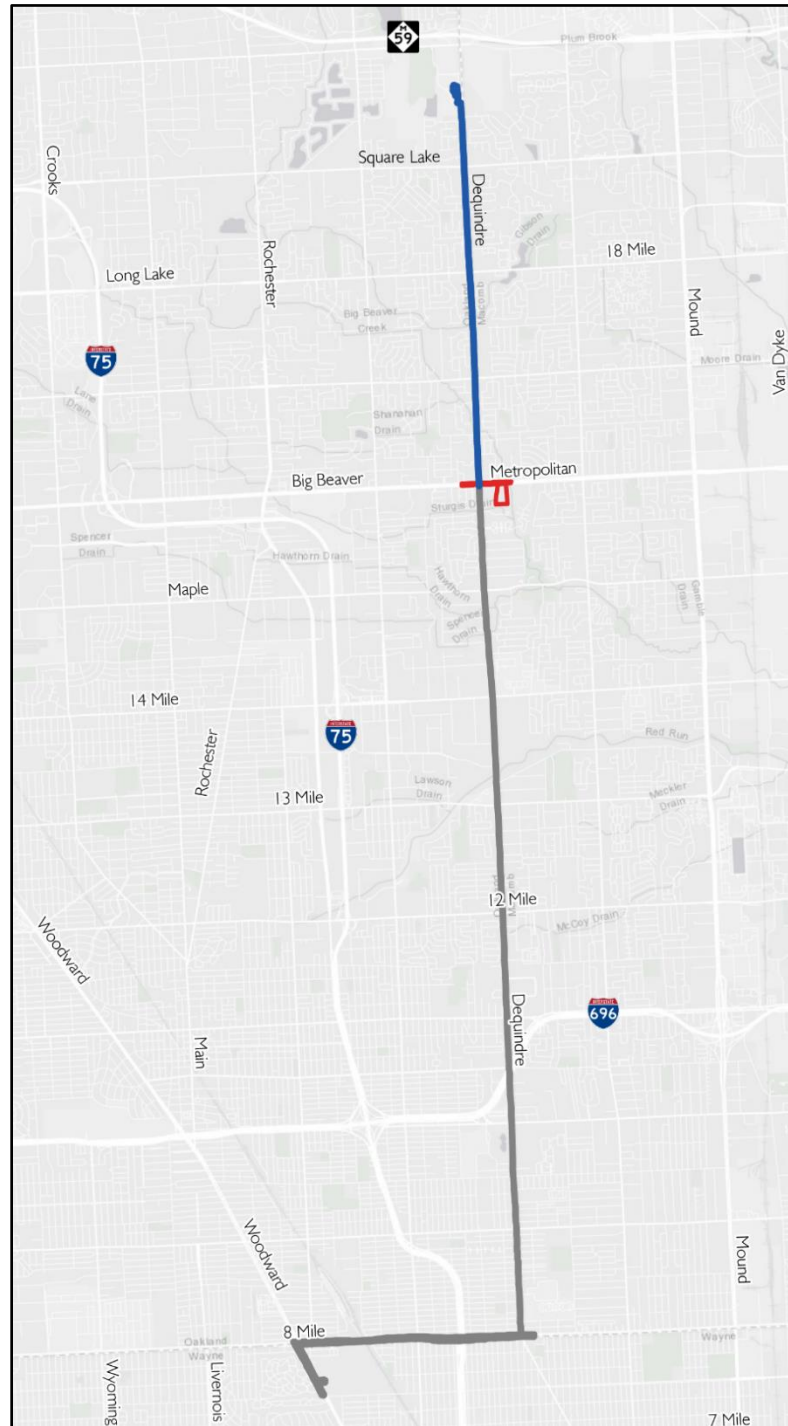
The 494 Dequindre route is a Community route between State Fair Transit Center in Detroit and Target in Sterling Heights via Dequindre Road. The route operates 45-minute frequencies and has moderate ridership per trip.

### Routing Changes

Under the Phase I recommendations, Route 494 would extend north along Dequindre Road beyond Square Lake Road, in order to provide access to Beaumont Hospital in Troy.

### Interlines

Under the Phase I recommendations, Route 494 would be interlined with **Route 495**.



### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 11:00 pm (17 hours)	30	60
Saturday	6:30 am – 10:30 pm (16 hours)	60	60

### Route 495 John R

The 495 John R route is a Community route between State Fair Transit Center in Detroit and Oakland Mall via John R Road. The route operates with moderate to high frequencies. Ridership is moderate to high per trip.

### Routing Changes

Under the Phase I recommendations, Route 495 would remain the same as current.

### Interlines

Under the Phase I recommendations, Route 495 would be interlined with **Route 494** on weekdays and Saturdays.

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 11:00 pm (17 hours)	30	60
Saturday	6:30 am – 10:30 pm (16 hours)	60	60
Sunday (No interlining, same as current)	7:50 am - 8:05 pm (12.3 hours)	70	40

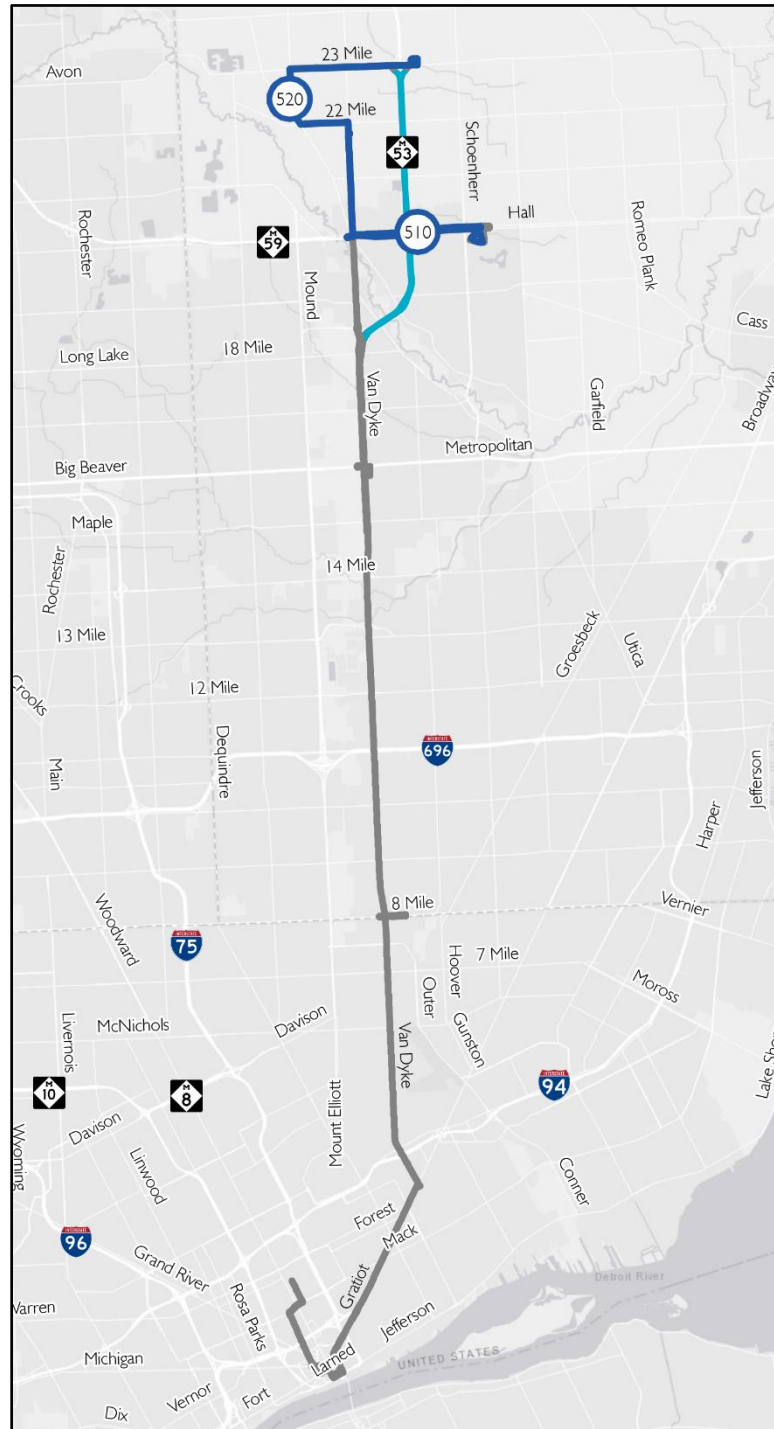
## Route 510-515 Van Dyke

The 510 Van Dyke Local route is a Main Corridor route that operates between Bel Air Shopping Center on 8 Mile Road and either Walmart in Shelby or Lakeside Center Mall in Sterling Heights, via Van Dyke Avenue. This route serves Downtown Detroit during peak periods. The route has high frequency and high ridership performance.

The 515 Van Dyke Limited route is a Commuter route between Downtown Detroit and Walmart in Shelby, via Van Dyke Avenue. The route is a limited, weekday-only peak period service. Ridership is reported with Route 510.

### Routing Changes

Under the Phase I recommendations, Route 515 would remain the same while Route 510's two branches would be separated into two different routes to serve the Van Dyke corridor more frequently and simplify the route's schedule; the terminating destination of the route would no longer alternate, but instead be served consistently like every other stop on the route (much like **Route 461-462**). The eastern branch (proposed Route 510) would follow the current 510's alignment to Lakeside Center Mall in Sterling Heights, while the northern branch (proposed Route 520) would follow the current 510's northern alignment to the Amazon facility and Walmart on 23 Mile Road. Both routes would serve Downtown Detroit during peak periods and terminate at the Bel Air Shopping Center on 8 Mile Road during off-peaks.



### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Maintained Route 515

## Proposed Service Levels

### Route 510-520

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak (service to Downtown Detroit)	Off-Peak
<b>Weekday</b>	4:30 am – 1:30 am (21 hours)	20 where the routes overlap 40 in the separate branches	25 where the routes overlap 50 in the separate branches
<b>Saturday</b>	6:00 am – 2:00 am (20 hours)	30	30
<b>Sunday</b>	6:00 am – 11:00 pm (17 hours)	30	30

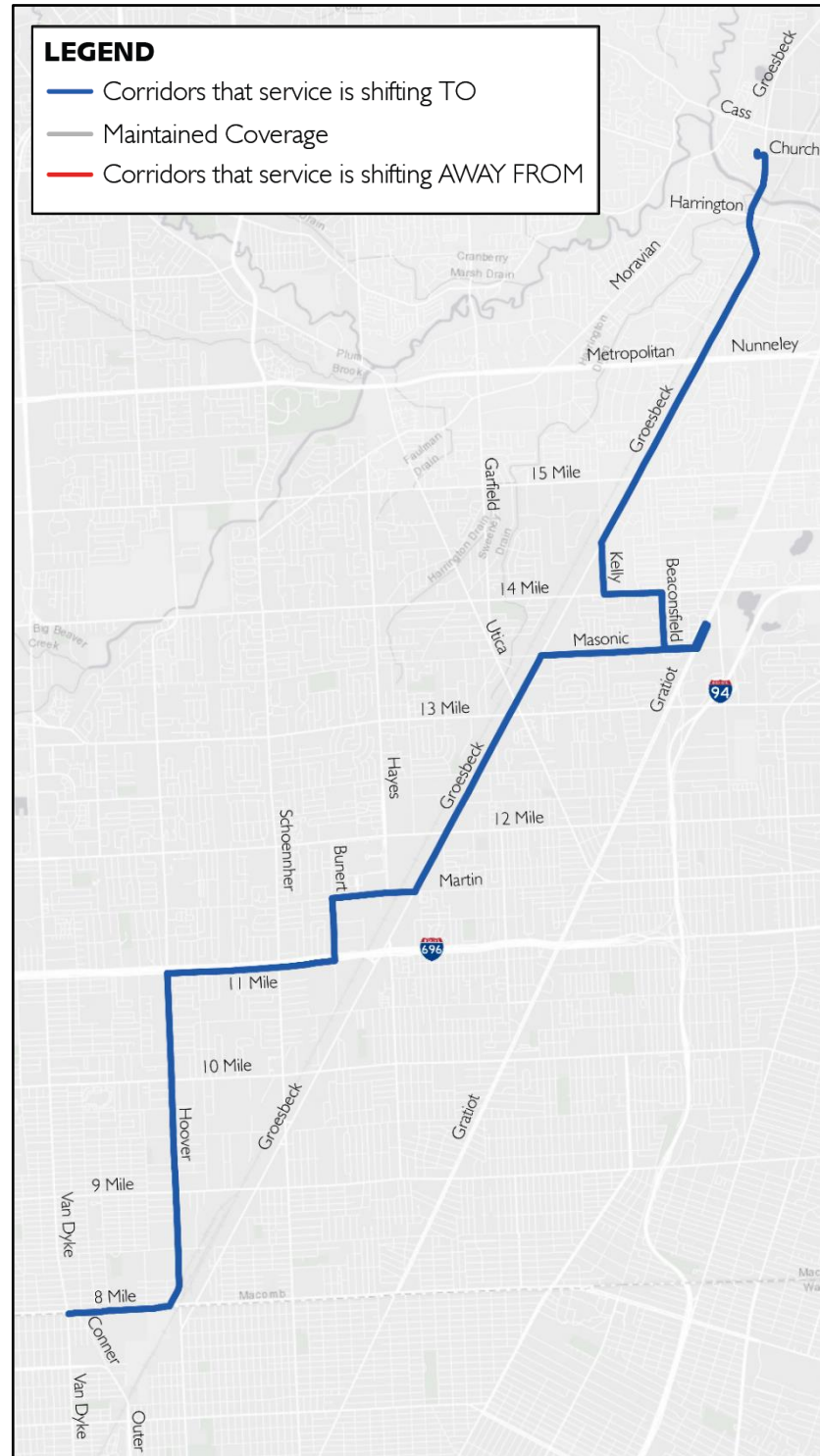
### Route 515

Service Period	SERVICE SPAN	FREQUENCY (minutes)
<b>Weekday</b>	5:30 am – 8:00 am 4:00 pm – 7:00 pm (Peak Period Only)	50



### Route 525 Groesbeck

The proposed 525 Groesbeck route would be a new route between 8 Mile Road and Meijer in Clinton Township, via Groesbeck Highway. The route would replace the current Groesbeck Flex Route.



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:00 am – 7:00 pm (14 hours)	60

### Route 530 Schoenherr

The 530 Schoenherr route is a Commuter route between Downtown Detroit and Lakeside Center in Sterling Heights, via Schoenherr Road. The route makes four trips in each direction on weekdays only. The route has low to moderate ridership per trip.

#### Routing Changes

Under the Phase I recommendations, Route 530 would remain the same as current.

#### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	6:00 am – 9:00 am 4:30 pm - 6:30 pm (Peak Period Only)	40

### Route 550 Garfield

The 550 Garfield route is a Community route between Macomb Mall in Roseville and Lakeside Center via Garfield Road. The route operates with 40-minute frequencies and has low to moderate ridership per trip.

#### Routing Changes

Under the Phase I recommendations, Route 550 would remain the same as current.

#### Interlines

Under the Phase I recommendations, Route 550 would interline with **Route 615**.

#### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 8:00 pm (14 hours)	35	70

## Route 560 Gratiot Local

The 560 Gratiot Local route is a Main Corridor route between Downtown Detroit and Gratiot at 23 Mile in Chesterfield, via Gratiot Avenue. The route has high frequencies and high ridership, with some trips exceeding 40 passengers.

### Routing Changes

Under the Phase I recommendations, Route 560 would remain the same as current.

### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak/Midday	Evening
Weekday	4:17 am - 2:43 am (22.4 hours)	15	15 – 45
Saturday	4:44 am - 1:59 am (21.3 hours)	30	25 – 40
Sunday	6:23 am - 11:14 pm (16.9 hours)	30	30 – 60

## Route 561-563 FAST Gratiot

The 561-563 FAST Gratiot route is a FAST route connecting Downtown Detroit to Mount Clemens (Route 561) and Chesterfield (Route 563), via Gratiot Avenue. The route has high frequencies and moderate ridership per trip.

### Routing Changes

Under the Phase I recommendations, Route 561-563 would remain the same as current.

### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak/Midday	Evening
Weekday	4:30 am - 1:51 am (21.4 hours)	15	15 – 20
Saturday	4:44 am - 2:41 am (22 hours)	20	20
Sunday	6:04 am - 10:52 pm (16.8 hours)	30	20 – 40

### Route 562 FAST Gratiot – WSU

The 562 FAST Gratiot – WSU route is a FAST route between Wayne State University and Mount Clemens, via Gratiot Avenue. The route provides three trips per direction per day. Ridership per trip on this route is low.

#### Routing Changes

Under the Phase I recommendations, Route 562 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:48 am - 8:54 am 3:05 pm - 6:20pm (Peak Period Only)	130 – 135

### Route 567 New Baltimore / Lenox

The 567 New Baltimore / Lenox route is a Community route connecting Chesterfield and New Baltimore. Ridership per trip on this route is very low.

#### Routing Changes

Under the Phase I recommendations, Route 567 would be kept in operation until it can be replaced by a microtransit zone (see the **Microtransit** section of the Phase I Recommendations).

### Route 580 Harper

The 580 Harper route is a Commuter route between Downtown Detroit and I 6 Mile in Clinton, via Harper Avenue. The route makes five northbound trips and four southbound trips per day. Ridership performance is low to moderate per trip.

#### Routing Changes

Under the Phase I recommendations, Route 580 would instead be operated as a Park-&-Ride route along the I-94 corridor. The specific routing and service levels are to be determined.



## Route 610 Kercheval-Harper

The 610 Kercheval-Harper route is a Main Corridor route between Grosse Pointe Park and 15 Mile in Clinton via Eastland Center and Harper Ave. It also serves Downtown Detroit during peak periods. Ridership performance is low per trip.

### Routing Changes

Under the Phase I recommendations, Route 610 would remain the same as current.

### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Midday/Evening
Weekday	5:06 am - 11:27 pm (18.4 hours)	30 – 50	40
Saturday	5:45 am - 1:30 am (19.8 hours)	60	60
Sunday	7:03 am - 9:00 pm (14 hours)	65	65

## Route 615 Jefferson

The 615 Jefferson route is a Community route between Moross Road in Detroit/Grosse Pointe Farms and Macomb Mall in Roseville, via Mack Avenue and Jefferson Avenue. The route makes five northbound trips and four southbound trips per day. Ridership performance is low to moderate per trip.

### Routing Changes

Under the Phase I recommendations, Route 615 would remain the same as current.

### Interlines

Under the Phase I recommendations, Route 615 would interline with **Route 550**.

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 8:00 pm (14 hours)	35	70

### Route 620 Charlevoix

The 620 Charlevoix route is a Commuter route between Downtown Detroit and Macomb Mall via Mack Avenue and Little Mack Avenue. The route makes four northbound trips and three southbound trips per day. Ridership performance is low per trip.

#### Routing Changes

Under the Phase I recommendations, Route 620 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	6:12 am - 8:19 am 4:03 pm - 6:39 pm (Peak Period Only)	30

### Route 635 Jefferson Express

The 635 Jefferson Express route is a Commuter route between Downtown Detroit and I 6 Mile in Harrison via Jefferson Avenue and Lake Shore Road. The route makes four northbound trips and three southbound trips per day. Ridership performance is low per trip.

#### Routing Changes

Under the Phase I recommendations, Route 635 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:57 am - 8:47 am 4:07 pm - 6:27 pm (Peak Period Only)	20 – 30

### Route 710 Nine Mile Crosstown

The 710 Nine Mile Crosstown route connects Jefferson Avenue in St. Clair Shores to Telegraph Road in Southfield, via 9 Mile. The route has moderate to high frequencies and has moderate to high ridership per trip.

#### Routing Changes

Under the Phase I recommendations, Route 710 would remain the same as current.

#### Proposed Service Levels – same as current

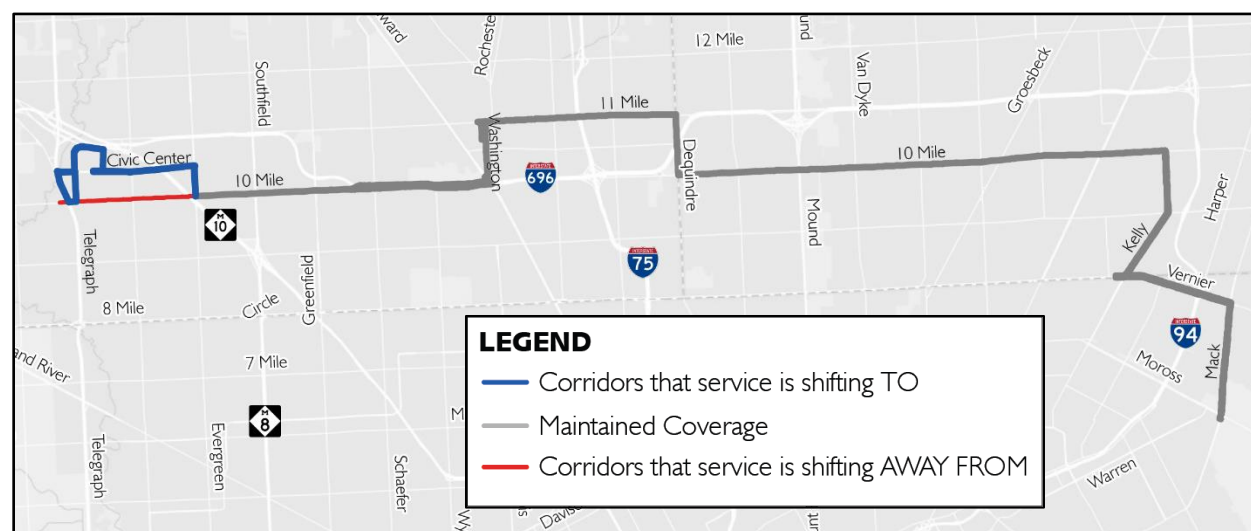
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	4:52 am - 11:50 pm (19 hours)	20 – 30	20 – 40
Saturday	5:52 am - 10:28 pm (16.6 hours)	47	45 – 47
Sunday	7:39 am - 9:46 pm (14.1 hours)	65 – 80	70

### Route 730 Ten Mile Crosstown

The 730 Ten Mile Crosstown route connects Grosse Pointe Farms to Southfield via 10 Mile and 11 Mile Road. The route operates with hourly service and has relatively high ridership per trip.

#### Routing Changes

Under the Phase I recommendations, the west end of Route 730 would be realigned from 10 Mile Road to Civic Center Drive via Evergreen Road. The purpose of the realignment is to address low ridership along 10 Mile Road and shift service to areas with higher ridership potential.



#### Proposed Service Levels

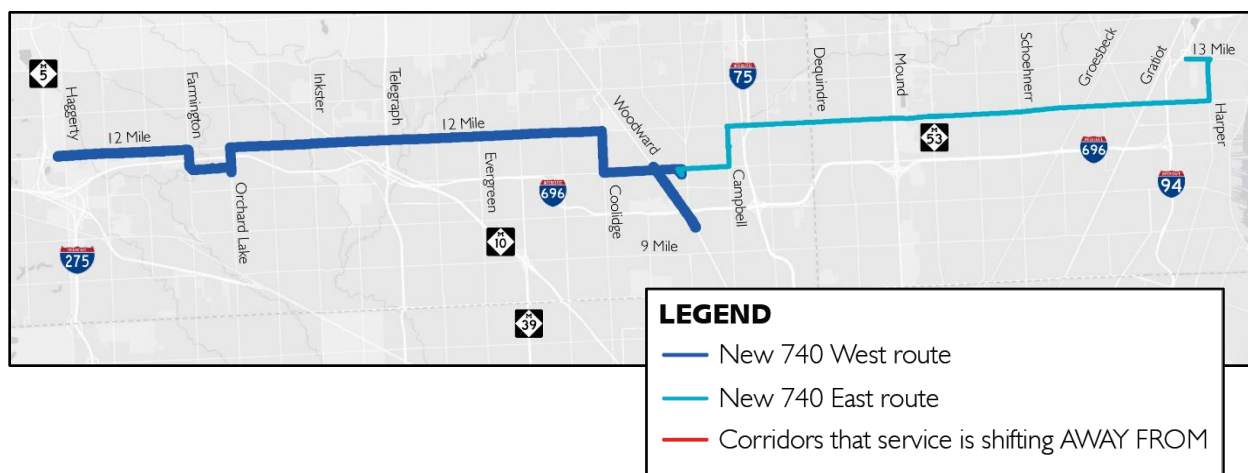
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 8:00 pm (14 hours)	60	60
Saturday	8:00 am – 8:00 pm (12 hours)	60	60

## Route 740 Twelve Mile Crosstown

The 740 Twelve Mile Crosstown route connects Meijer in Roseville to Haggerty Road in Farmington Hills, via 12 Mile and Royal Oak Transit Center. The route has low to moderate frequencies and high ridership performance. On-time performance, however, is poor during PM peak periods and Sundays.

### Routing Changes

Under the Phase I recommendations, Route 740 would split into two separate routes at the Royal Oak Transit Center to improve on-time performance. The two routes could be interlined on weekends when on-time performance is less of an issue.



### Proposed Service Levels

#### Route 740 E

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 11:00 pm (18 hours)	30	60
Saturday	6:00 am – 10:00 pm (16 hours)	60	60
Sunday	8:00 am – 9:00 pm (13 hours)	60	60

#### Route 740 W

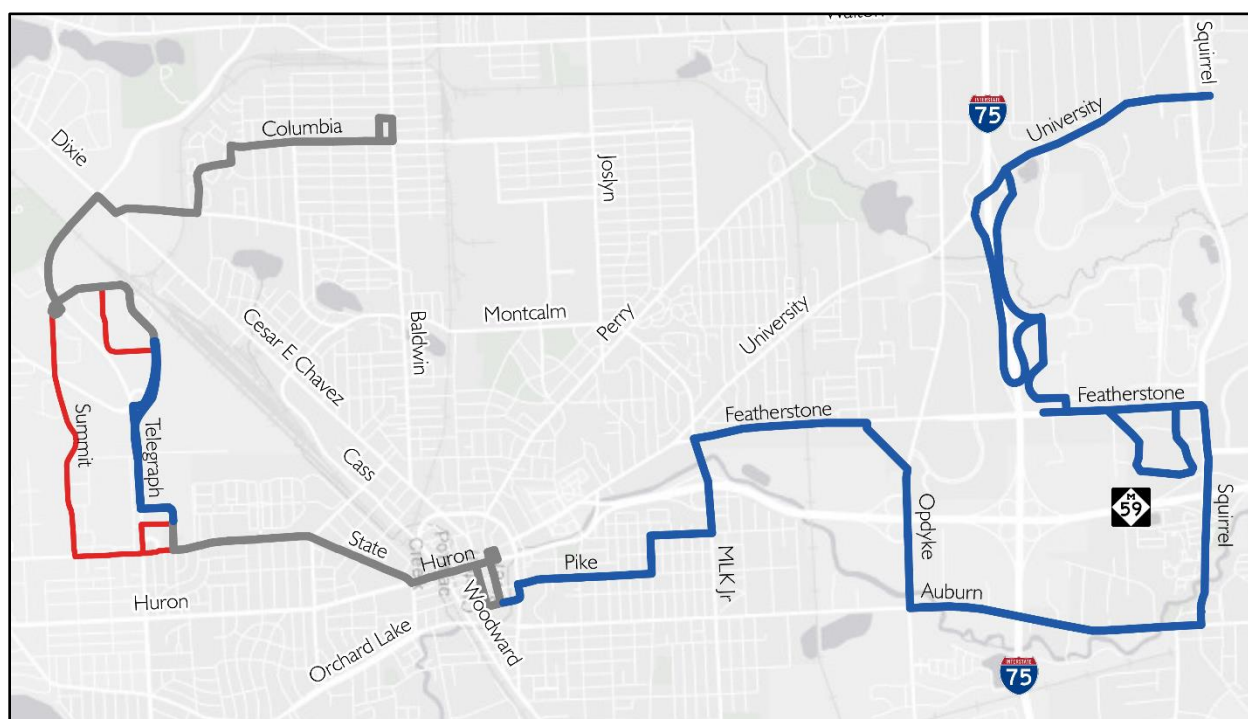
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 11:00 pm (18 hours)	30	60
Saturday	6:00 am – 10:00 pm (16 hours)	60	60
Sunday	8:00 am – 9:00 pm (13 hours)	60	60

## Route 752 Pontiac – North Hill Farms

The 752 Pontiac – North Hill Farms route is a Community route between Phoenix Center and Columbia Avenue in Pontiac. Destinations along the route include the Oakland County Courts and jail. The route operates with hourly frequencies and has low ridership per trip.

### Routing Changes

Under the Phase I recommendations, Route 752 would shift from Summit Drive to County Center Drive and Telegraph Road. It would also extend further east to Oakland University via Pike Street, Featherstone Road, Auburn Avenue, Squirrel Road, I-75, and University Drive. The purpose of the changes is to provide more direct service between Downtown Pontiac and the Oakland County government center while also offering crosstown service through Pontiac, connecting to the former Silverdome site redevelopment project, Oakland Community College – Auburn Hills Campus, and Oakland University.



#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	7:00 am – 9:00 pm (14 hours)	50	50
Saturday	8:40 am - 7:40 pm (11 hours)	75	75
Sunday	9:30 am - 6:30 pm (9 hours)	75	75

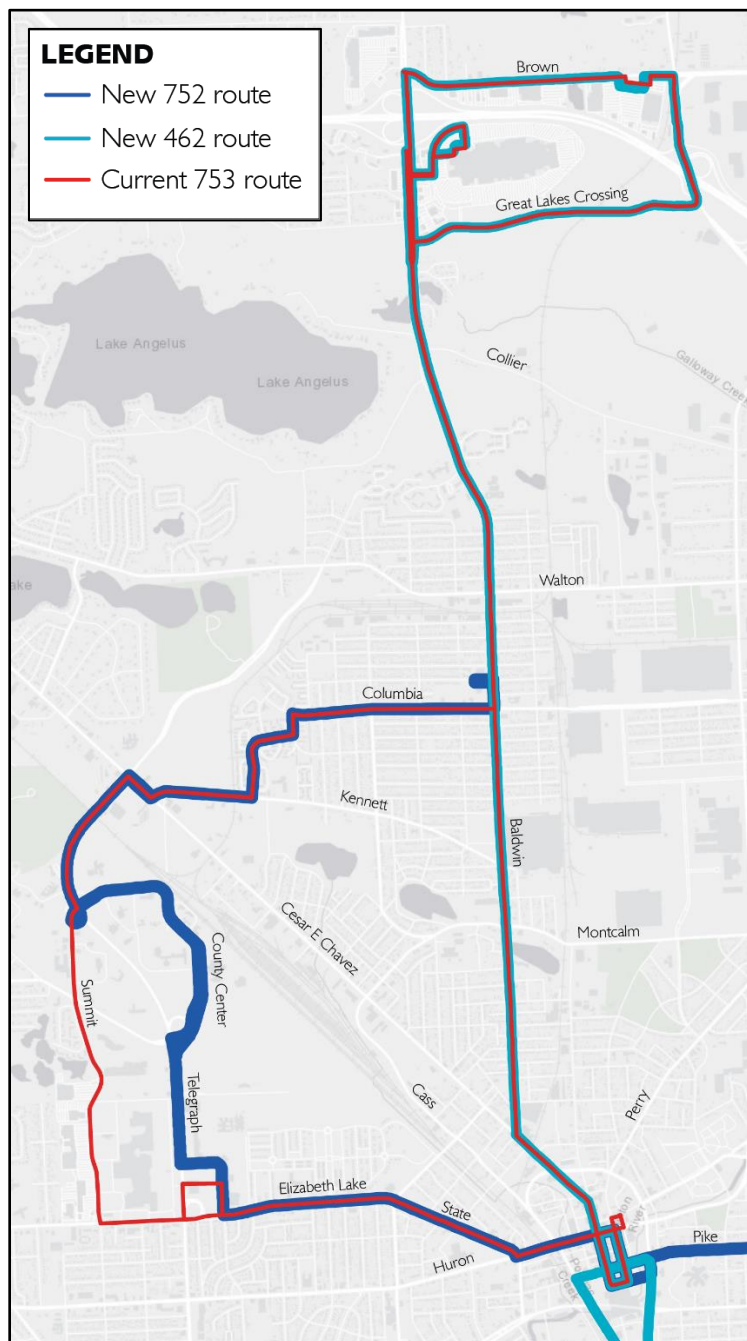


## Route 753 Baldwin – Great Lakes Crossing

The 753 Baldwin – Great Lakes Crossing route is a Community route between Phoenix Center and Great Lakes Crossing in Auburn Hills. Destinations along the route include the Oakland County Courts and jail. The route operates with hourly frequencies and has low ridership per trip.

### Routing Changes

Under the Phase I recommendations, Route 753 would consolidate with Routes 752 and 462. The change would provide more direct service in and through Pontiac.

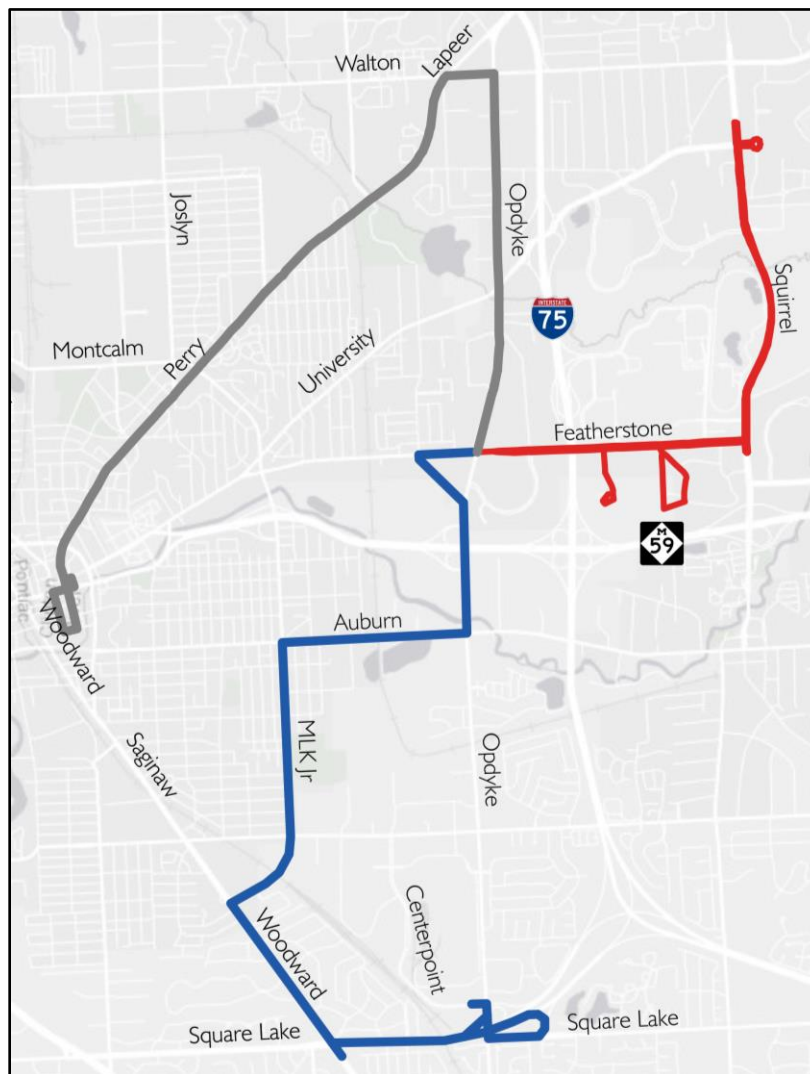


### Route 756 Pontiac – Perry – Opdyke

The 756 Pontiac – Perry – Opdyke route is a Community route between Phoenix Center in Pontiac and Oakland University in Auburn Hills via Baker College, Cooley Law School, Chrysler Technology Center, and Oakland Community College – Auburn Hills. The route operates with hourly frequencies and has low ridership per trip.

#### Routing Changes

Under the Phase I recommendations, Route 756 would shift away from serving Oakland University (to be served by Route 752 instead). Instead, the route would serve the former Silverdome site redevelopment project and extend south to Centerpoint Parkway via Auburn Avenue, MLK Jr Boulevard, Woodward Avenue and Square Lake Road (I-75 Business Loop). The change would provide more direct north-south service through Pontiac and Auburn Hills.



#### LEGEND

- Corridors that service is shifting TO
- Maintained Coverage
- Corridors that service is shifting AWAY FROM

#### Proposed Service Levels

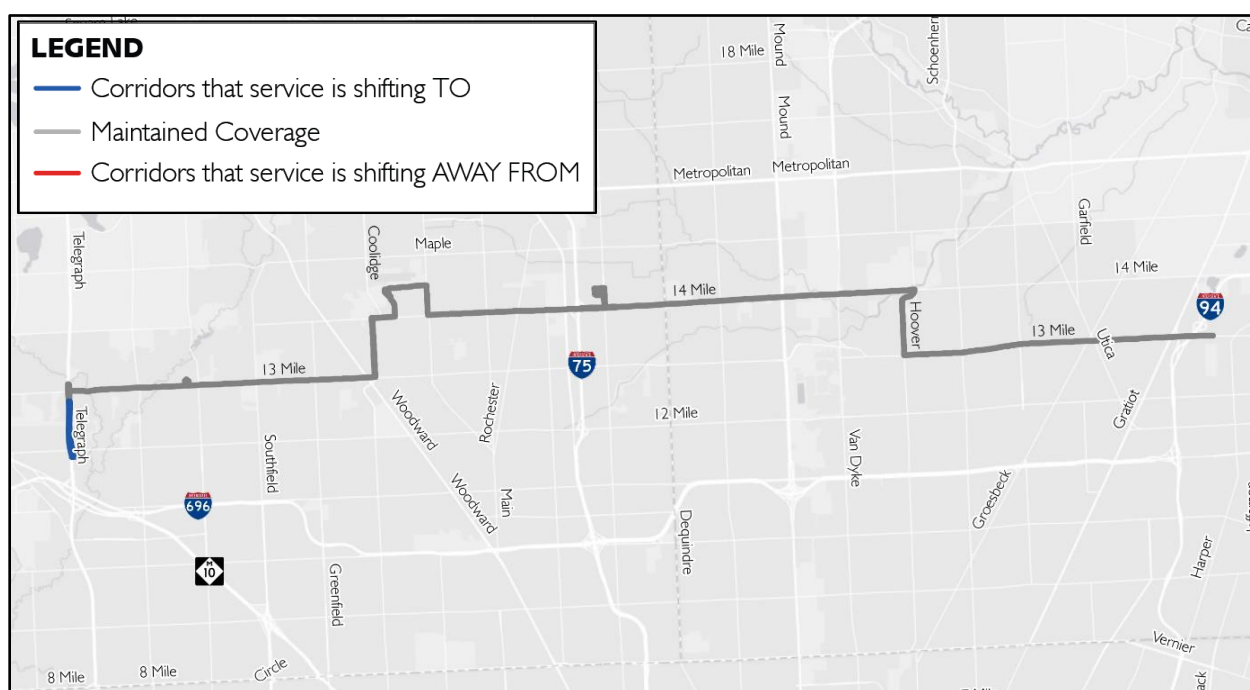
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	6:00 am – 8:00 pm (14 hours)	60	60
Saturday	6:00 am – 7:00 pm (13 hours)	75	75

## Route 760 Thirteen/Fourteen Mile Crosstown

The 760 Thirteen/Fourteen Mile Crosstown route connects Meijer in Roseville to Telegraph Road in Southfield, via 13 Mile, 14 Mile, and Oakland Mall. The route operates with 45-minute frequencies and has moderate ridership performance. The route has poor on-time performance during PM peak periods and Sundays

### Routing Changes

Under the Phase I recommendations, the west end of Route 760 would extend south on Telegraph Road to 12 Mile Road. This would create a stronger anchor with direct access to more retail. Recovery time was added to the schedule to help improve reliability.



### Proposed Service Levels

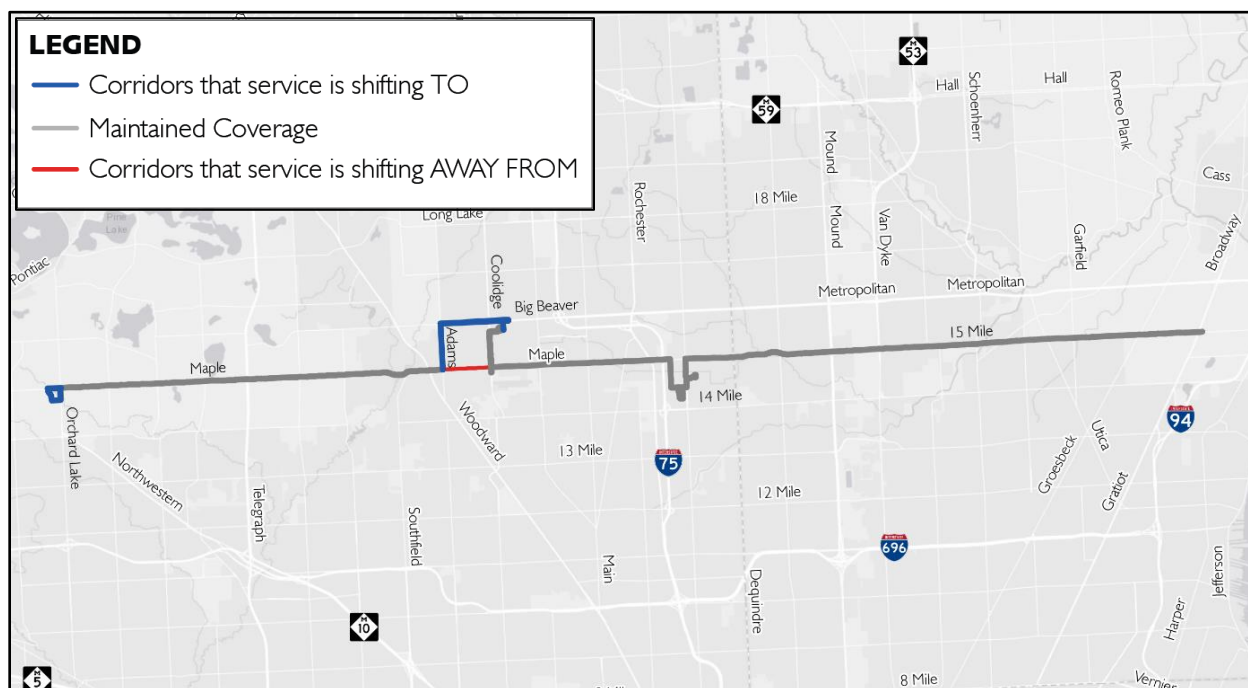
Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 8:00 pm (15 hours)	45	45
Saturday	5:40 am - 7:40 pm (14 hours)	75	75

## Route 780 Fifteen Mile Crosstown

The 780 Fifteen Mile Crosstown route connects Gratiot Avenue in Clinton to Telegraph Road in Southfield via 15 Mile Road and Somerset Collection. The route operates with 50-minute frequencies and has moderate ridership performance. It has poor on-time performance during PM peak periods and Sundays.

### Routing Changes

Under the Phase I recommendations, Route 780 would add Adams Road service to and from Somerset Collection. This change would allow the route to serve several multi-family housing complexes in the corridor.



### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)	
		Peak	Off-Peak
Weekday	5:00 am – 9:00 pm (16 hours)	60	60
Saturday	7:00 am - 9:00 pm (14 hours)	60	60

### Route 805 Grand River Park-&-Ride

The 805 Grand River Park-&-Ride route connects Downtown Detroit to Bonaventure Family Skating Center in Farmington Hills. The route provides peak period directional service. Ridership performance is moderate to high, but on-time performance is poor.

#### Routing Changes

Under the Phase I recommendations, Route 805 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:28 am - 8:51 am 3:35 pm - 6:49 pm (Peak Period Only)	15 – 20

### Route 830 Downriver Park-&-Ride

The 830 Downriver Park-&-Ride route connects Downtown Detroit and Grange Road in Trenton. The route provides peak period directional service. Ridership performance is moderate, but on-time performance is poor during PM peak periods.

#### Routing Changes

Under the Phase I recommendations, Route 830 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:29 am - 8:50 am 3:43 pm - 6:38 pm (Peak Period Only)	15



### Route 849 Northland Loop Park-&-Ride

The 849 Northland Loop Park-&-Ride route connects Providence Hospital in Southfield and Downtown Detroit via Wayne State University. The route provides peak period directional service. Ridership performance is very low.

#### Routing Changes

Under the Phase I recommendations, Route 849 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	6:02 am - 8:48 am 3:35 pm - 6:21 pm (Peak Period Only)	15 – 24

### Route 851 West Bloomfield – Farmington Hills Park-&-Ride

The 851 West Bloomfield – Farmington Hills Park-&-Ride route connects Downtown Detroit and Lone Pine Road in West Bloomfield. The route provides peak period directional service. Ridership performance is low to moderate, but on-time performance is poor.

#### Routing Changes

Under the Phase I recommendations, Route 851 would remain the same as current.

#### Proposed Service Levels – same as current

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	5:52 am - 8:50 am 3:25 pm - 7:01 pm (Peak Period Only)	10 – 25

## Microtransit

Microtransit is a transportation service which includes smaller vehicles with flexible, “on-demand” routing; partnerships between transit agencies and technology providers; and mobile apps for ride hailing, navigation, and payment. Microtransit can provide improved access to transit for people and places that fixed bus routes do not serve well, more directly matched supply of service to the demand for rides, shorter wait times, and greater flexibility to hail a ride when you need one via an app or phone call.

To complement the fixed route network and its Phase I service changes, microtransit pilot projects are recommended for the following zones:

- Dearborn – connecting riders to Dearborn's two downtowns, Fairlane Town Center, Dearborn Transit Center, Henry Ford College, University of Michigan - Dearborn, and The Henry Ford. A stop-to-stop service, which would pick up and drop off riders from designated stop locations instead of directly at the door, could be successfully deployed in this zone for better trip pooling and shorter wait times. The familiarity of stops also fosters more efficient behavior from drivers and riders.
- Oakland Mall/Somerset – connecting riders to Somerset Collection, Oakland Mall, Beaumont Health & Wellness Center - Coolidge, Walsh College, International Academy of Design & Technology, and their surrounding areas.
- Hall Road – connecting riders to destinations along the corridor between Ryan Road and I-94 including Walmart, Lakeside Center, the Mall at Partridge Creek, Macomb Community College Center Campus, and Henry Ford Macomb Hospital.
- New Baltimore – connecting riders to the shopping center at Gratiot Avenue and 23 Mile Road, the Meijer at County Line Road and 26 Mile Road, and their surrounding areas. A stop-to-stop service could be successfully deployed in this zone.

SMART plans to employ a turnkey operational model, meaning a contractor would provide the technology, drivers, and vehicles needed for microtransit service. Cost estimates for the Phase I microtransit zones are provided in the **Financial Plan** section of this report.

## Geographic Coverage Impacts

As shown in **Figure 51**, route segments will be added and deleted per the Phase I recommendations. The primary areas that will no longer be directly served by a fixed route will have service through a new microtransit pilot route or will be within a half-mile walk catchment zone of fixed route service. A half mile is considered the reasonable walking distance to a fixed route bus stop (as shown in **Figure 52**). The service changes are not expected to extend the existing ADA coverage area as the new routing will not be outside a  $\frac{3}{4}$  mile of the existing service.

Figure 51: Phase I Geographic Coverage Impacts

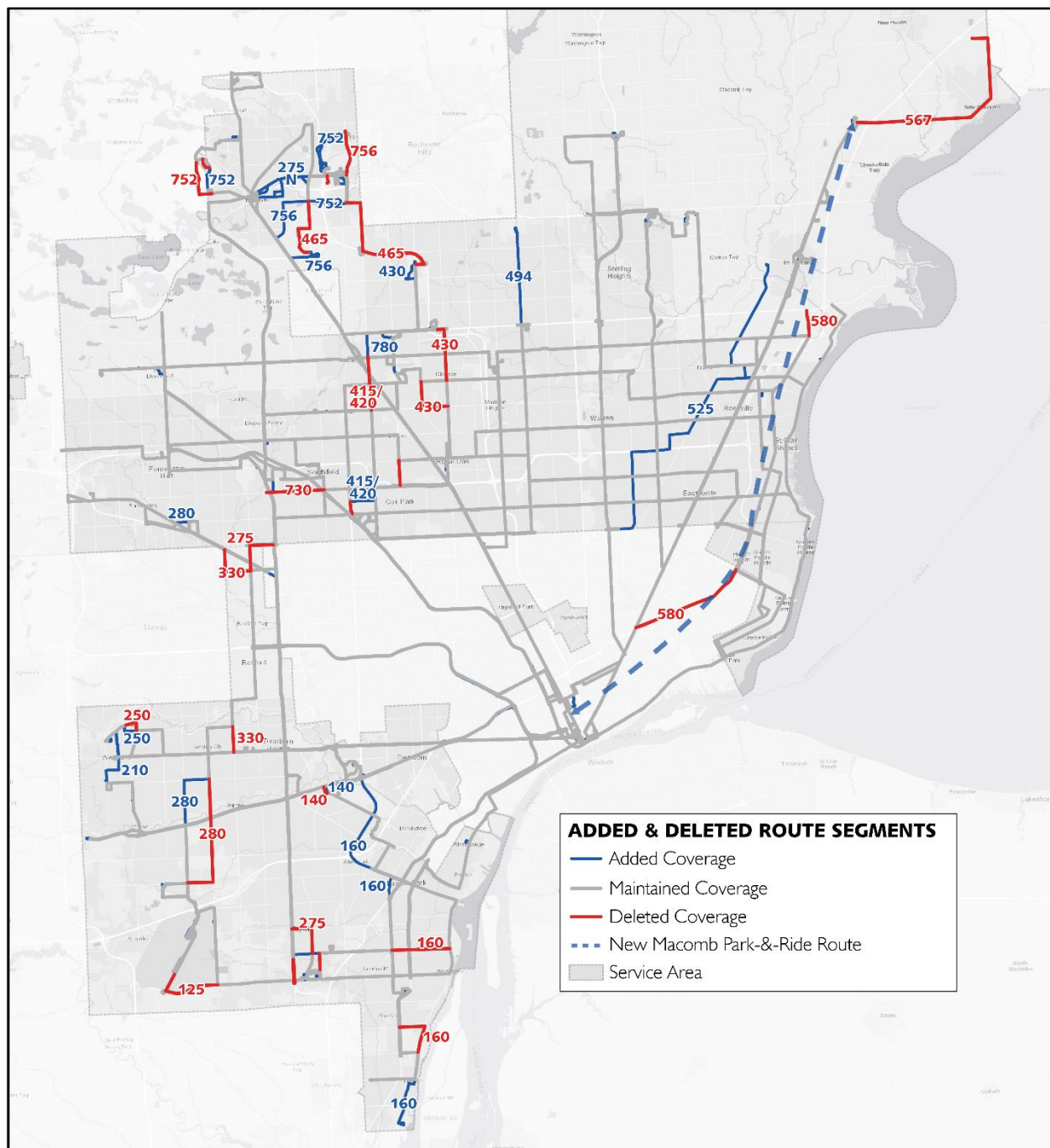
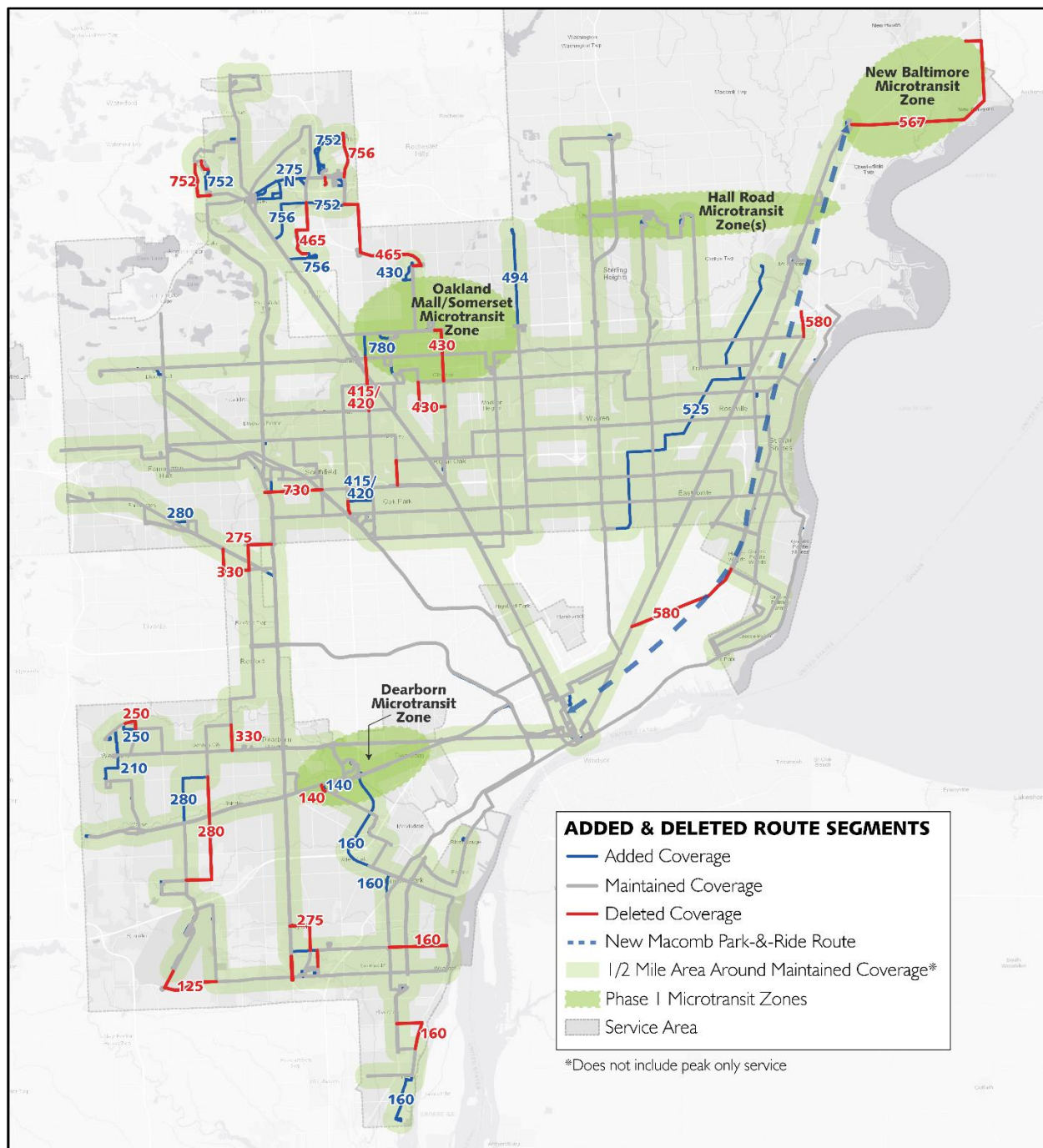


Figure 52: Phase I Geographic Coverage Impacts within Half-Mile Walking Distance and Microtransit



## Service Impacts

Overall, the Phase I recommendations add about 22,000 annual revenue hours to existing fixed-route service, an increase of about 4% (see **Table 5**). The additional hours represent improved frequency on some routes and added recovery time on many routes to improve the systemwide reliability of service and on-time performance. **Table 5** does not include the service impacts of microtransit service; revenue hours for Route 567 (to be replaced by a microtransit zone) have been removed from this table and are documented in the **Financial Plan** section of this report.

Table 5: Phase I Impacts to Revenue Hours

Route	Weekday Revenue Hours	Saturday Revenue Hours	Sunday Revenue Hours	Total Annual Revenue Hours
125	77.4	54.2	24.8	23,968.1
140	24.1	0.0	0.0	6,109.2
160	44.9	14.4	0.0	12,162.9
200/210	66.4	31.7	28.6	20,192.7
250	20.8	0.0	0.0	5,285.2
255	10.7	0.0	0.0	2,718.6
261	77.8	73.1	42.8	26,111.5
275 N	30.5	28.7	0.0	9,257.5
275 S	44.9	38.0	0.0	13,408.7
280/330	40.1	39.0	31.7	14,097.0
400	15.1	0.0	0.0	3,835.4
405	36.3	30.0	0.0	10,804.1
415/420	58.2	50.7	21.7	18,725.1
430	13.5	0.0	0.0	3,419.1
445	8.3	0.0	0.0	2,108.2
450/460	124.2	75.8	55.3	38,771.6
461/462	159.1	148.6	101.0	54,156.3
494	38.3	24.0	0.0	10,992.6
495	21.5	13.5	14.5	7,022.0
510/520	112.7	62.5	50.6	34,879.1
515	9.1	0.0	0.0	2,301.9
525*	22.0	0.0	0.0	5,596.8
530	7.9	0.0	0.0	2,011.8
550	20.9	0.0	0.0	5,300.6
560	147.3	63.8	46.9	43,515.8
561/563	142.5	99.2	55.0	44,642.6
562	5.6	0.0	0.0	1,422.4
580**	9.2	0.0	0.0	2,336.8
610	54.0	30.0	22.0	16,582.0
615	18.9	0.0	0.0	4,789.7



620	7.6	0.0	0.0	1,930.4
635	9.9	0.0	0.0	2,514.6
710	72.6	40.5	22.5	21,891.9
730	37.9	32.5	0.0	11,358.3
740 W	57.9	28.2	22.9	17,515.3
740 E	43.5	28.2	22.9	13,859.0
752	37.8	17.6	14.3	11,364.1
756	24.0	11.3	0.0	6,693.9
760	54.0	34.3	0.0	15,525.1
780	43.4	35.6	0.0	12,919.0
805	21.0	0.0	0.0	5,334.0
830	14.1	0.0	0.0	3,581.4
849	6.0	0.0	0.0	1,524.0
851	20.9	0.0	0.0	5,308.6
<b>Total Phase I</b>	<b>1,890.4</b>	<b>1,105.3</b>	<b>577.5</b>	<b>572,248.0</b>
<b>Total Existing Service</b>	<b>1,840.5</b>	<b>1,017.9</b>	<b>493.6</b>	<b>550,064.5</b>
<b>Difference</b>	<b>2.7%</b>	<b>8.6%</b>	<b>17.0%</b>	<b>4.0%</b>

\*Not included in the Total Phase I revenue hours due to replacement of the Groesbeck Flex Route.

\*\*To be converted to an I-94 Park-&-Ride route. Specific routing and service levels are to be determined, so current revenue hours are kept as a placeholder.

**Table 6** illustrates how these revenue hours are split between the three different counties of SMART's service area.

**Table 6: Phase I County Breakdown of Revenue Hours**

	Wayne County	Oakland County	Macomb County
<b>Phase I</b>			
Annual County Revenue Hours	134,449.8	230,075.5	207,722.8
Share of Annual Systemwide Revenue Hours	23.5%	40.2%	36.3%
<b>Existing</b>			
Annual County Revenue Hours	127,122.3	221,541.9	201,400.3
Share of Annual Systemwide Revenue Hours	23.1%	40.3%	36.6%
<b>Difference in Share of Service</b>	<b>0.4%</b>	<b>-0.1%</b>	<b>-0.3%</b>

**Table 7** illustrates how Phase I will impact each route's frequency and hours of service. Decreased hours of service are recommended for some routes in order to shift service from times of the day with very poor ridership to higher frequency and new or extended service elsewhere in the system.

**Table 7: Phase I Impacts to Frequency and Hours of Service**

Route	WEEKDAY			SATURDAY			SUNDAY		
	Hours of Service	Peak Frequency (minutes)	Off-Peak Frequency (minutes)	Hours of Service	Peak Frequency (minutes)	Off-Peak Frequency (minutes)	Hours of Service	Peak Frequency (minutes)	Off-Peak Frequency (minutes)
125	↓ 2	↓ 6	↓ 10	↓ 2	No Change	No Change	No Change	No Change	↓ 15
140	↓ 1	↑ 5	↑ 5	N/A			N/A		
160	↑ 4	↑ 5	↑ 5	↓ 1	↑ 15	↑ 15	No Change	No Change	No Change
200	↓ 1	↓ 6	↓ 10	↓ 2	↑ 15	No Change	↓ 2	No Change	No Change
250	↓ 2	No Change	↑ 5	N/A			N/A		
255	Peak Period Only	↓ 10	N/A	N/A			N/A		
261	↓ 2	No Change	↓ 20	↓ 2	↑ 15	↓ 5	↓ 2	↑ 3	↑ 10
275	No Change	↓ 18	No Change	↓ 1	No Change	No Change	N/A		
280	↓ 2	No Change	No Change	↓ 2	↑ 8	No Change	No Change	↑ 10	↑ 10
330	Consolidated with Route 280								
400	No Changes								
405	No Change	↑ 3	No Change	No Change	No Change	No Change	N/A		
420	No Change	↓ 10	↓ 35	↓ 1	↓ 5	↓ 35	No Change	↓ 10	↓ 10

Table 8 Continued: Phase I Impacts to Frequency and Hours of Service

Route	Hours of Service	Peak Frequency (minutes)	Off-Peak Frequency (minutes)	Hours of Service			Peak Frequency (minutes)		
430	Peak Period Only	↓ 10	N/A	N/A			N/A		
445	No Changes								
450	No Changes								
461	No Change	↓ 3	↓ 5	↓ 1	No Change	No Change	No Change	↑ 5	↑ 5
465	Eliminated								
494	↓ 2	↑ 15	↓ 15	↓ 2	↓ 15	↓ 15	N/A		
495	↓ 2	↓ 10	↓ 20	↓ 2	↓ 20	↓ 20	No Change	No Change	No Change
510	No Changes								
530	Peak Period Only	↓ 10	N/A	N/A			N/A		
550	↓ 2	↑ 5	↓ 30	N/A			N/A		
560	No Changes								
561	No Changes								
562	No Changes								
580	Replaced by new Macomb County Park & Ride route								
610	No Changes								
615	No Change	↑ 5	↓ 30	N/A			N/A		
620	No Changes								
635	No Changes								
710	No Changes								

Table 8 Continued: Phase I Impacts to Frequency and Hours of Service

Route	Hours of Service	Peak Frequency (minutes)	Off-Peak Frequency (minutes)	Hours of Service	Peak Frequency (minutes)	Off-Peak Frequency (minutes)	Hours of Service		
730	↓ 1	No Change	No Change	No Change	No Change	No Change	N/A		
740	↓ 2	↑ 40	↓ 10	↓ 2	No Change	No Change	No Change	No Change	No Change
752	↑ 1	↑ 10	↑ 10	No Change	↓ 15	↓ 15	New Sunday Service		
753	Replaced by other routes								
756	↑ 1	No Change	No Change	↑ 1	↓ 15	↓ 15	N/A		
760	↓ 1	No Change	No Change	No Change	↑ 15	↑ 15	N/A		
780	↓ 2	↓ 10	↓ 10	↓ 2	No Change	No Change	N/A		
805	No Changes								
830	No Changes								
849	No Changes								
851	No Changes								

## 8.2 PHASE 2 RECOMMENDATIONS

The goal of Phase 2 is to further improve the operations by extending FAST service to new markets and improving weekend frequencies. Phase 2 adds new FAST service on the Van Dyke corridor and a new microtransit zone in Farmington and Farmington Hills. In addition, Phase 2 will add or improve Saturday service on three routes and add Sunday service on additional routes.

The plan provides important steps towards developing a more user friendly and convenient weekend service. The data shows that weekend ridership continues to grow and that the overall farebox recovery ratio is highest on the weekend. Improved weekend service was also one of the higher priority improvements requested from the public through the outreach meetings and surveys.

Phase 2 will also provide upgraded service and frequency on the Van Dyke corridor providing another key element to the overall FAST network of routes. With the addition of Van Dyke, the FAST system will become a comprehensive high frequency core network for SMART with connections in all three counties served by the agency. The frequent network will provide the foundation that all other fixed routes and microtransit services can feed into, which will improve overall travel times and level of service.

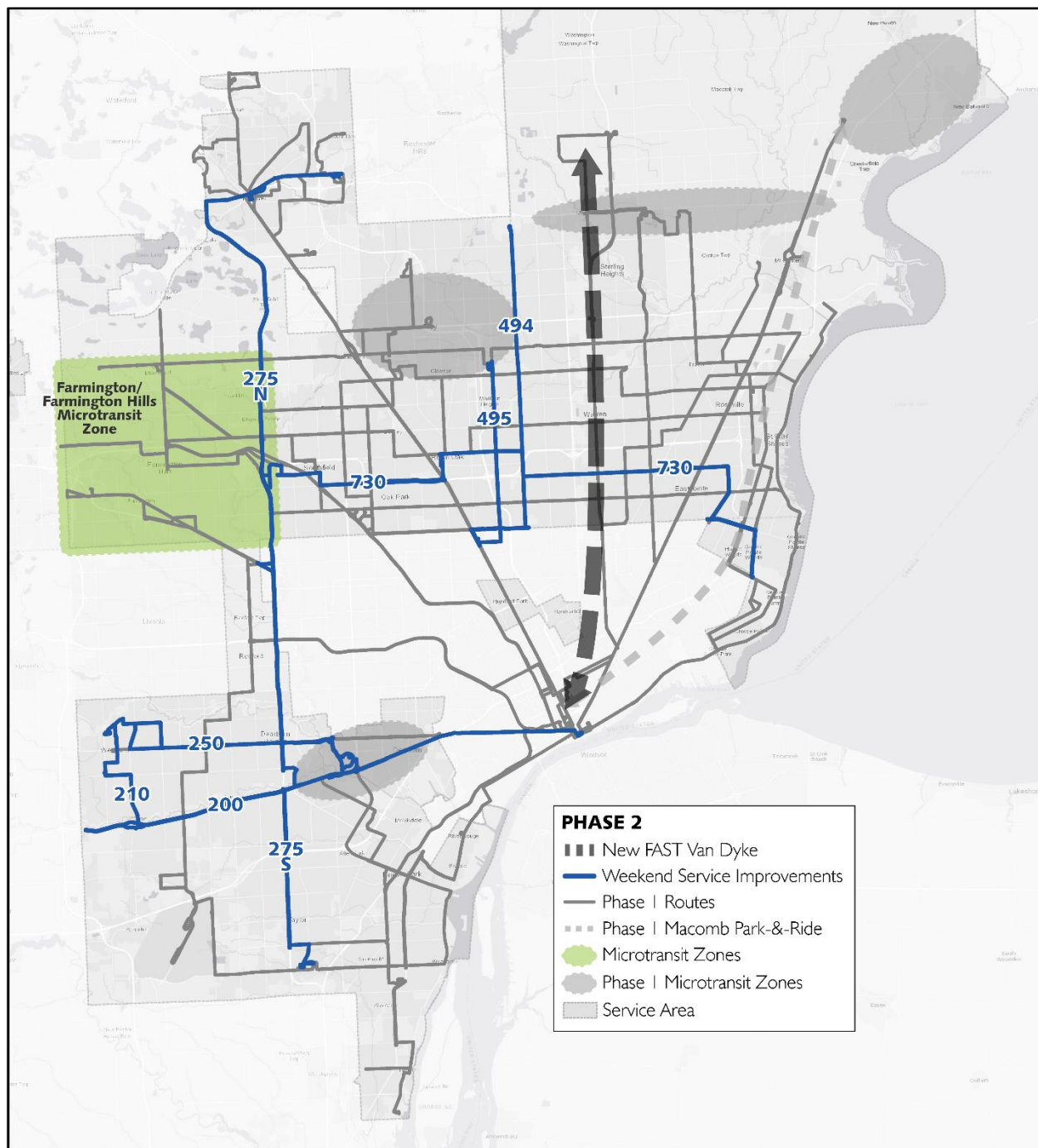
Phase 2 will continue to build out the microtransit network established in Phase 1. In this Phase, the existing Farmington/Farmington Hills Shuttle will transition to a microtransit zone. The exact boundaries of the zone will be defined during the Phase 2 implementation period, however the focus of the service is to improve the existing shuttle route by providing shorter wait times, dynamic scheduling and more efficient operations.

Phase 2 is planned for implementation in Years 2022 and 2023. Key improvements:

- Expanded and improved weekend service on key routes to continue to build and strengthen the weekend network
- New FAST service in the Van Dyke Avenue corridor
- Additional microtransit pilot projects



Figure 53: Phase 2 Recommendations



## Improved Weekend Service

Under Phase 2 recommendations, service would be added or improved on six different routes:

### Route 200/210 Michigan Avenue Local

Frequency on the 200/210 Michigan Avenue Local route would increase to every 30 minutes on Saturdays from the existing 45 minutes. The Route 200 is one of the highest ridership and productivity routes on Saturdays. The improved frequency will strengthen the weekend service in Wayne County and provide key connections to the new Saturday service on Route 250 Ford Road and to the 275 Telegraph Road route.

### Route 250 Ford Road

Route 250 currently operates weekdays only. Due to its high weekday ridership and important east – west connections in Wayne County, new Saturday service would be added to the 250 Ford Road route with 60-minute frequency. On Saturdays, Route 250 would connect to Route 200 Michigan Avenue Local at Fairlane Town Center and Route 275 Telegraph.

### Route 275 N&S Telegraph

Route 275 is one of the highest ridership and productivity routes on Saturdays. The introduction of Sunday service on the route would provide a key north -south spine through Oakland and Wayne counties on Sundays. The new Sunday service would be added to both the 275 North and South Telegraph routes with 60-minute frequency.

### Route 494 Dequindre

Route 494 is a high ridership Saturday route. In Phase 2, new Sunday service would be added to the 494 Dequindre route with 60-minute frequency. The service provides north-south service to Macomb and Oakland counties and provides a key transfer point for weekend crosstown routes.

### Route 495 John R

Route 495 has the highest ridership of all routes on Saturdays. Due to the ongoing weekend demand on the route, it is recommended to increase the Saturday frequency on the 495 John R route from every 40 minutes on Saturdays currently to every 30 minutes.

### Route 730 10 Mile Crosstown

Sunday service would be added to the highest ridership Saturday crosstown route. The 730 would improve the Sunday service network providing east-west service through Oakland and Macomb counties. The new service would operate with a 60-minute frequency.

### Proposed Service Levels

ROUTE	SATURDAY		SUNDAY	
	Service Span	Frequency (minutes)	Service Span	Frequency (minutes)
200/210	5:00 am – 12:00 am (19 hours)	*DOUBLED* 23	5:00 am – 11:00 pm (18 hours)	45
250	*NEW* 6:00 am – 8:00 pm (14 hours)	50	N/A	N/A
275 N	6:30 am – 10:30 pm (16 hours)	60	*NEW* 6:30 am – 9:30 pm (15 hours)	60
275 S	6:30 am – 10:30 pm (16 hours)	60	*NEW* 6:30 am – 9:30 pm (15 hours)	60
494	6:30 am – 10:30 pm (16 hours)	50	*NEW* 6:30 am – 8:30 pm (14 hours)	50
495	6:30 am – 10:30 pm (16 hours)	*DOUBLED* 30	7:50 am - 8:05 pm (12.3 hours)	60
730	8:00 am – 8:00 pm (12 hours)	60	*NEW* 8:00 am – 8:00 pm (12 hours)	60

## Microtransit

### Farmington/Farmington Hills Microtransit

In Phase 2, the existing Farmington/Farmington Hills Shuttle service would become a new microtransit zone. The exact boundaries of the zone will be identified through a simulation prior to the implementation of the service. The concept for the microtransit zone will be to continue to serve the communities of Farmington and Farmington Hills but with improved service including app-based trip planning, shorter wait times, dynamic trip scheduling, and faster travel times. The service hours and vehicle needs will be defined prior to implementation of the service.

## New FAST Van Dyke

The new FAST Van Dyke service will become a high capacity route along the current 510/515 Van Dyke corridor. It will build on the FAST network providing faster service connecting northern Macomb County to Downtown Detroit. The route will have two branches for the northern terminus serving both the Lakeside Center and the 23 Mile Road Walmart at varying times throughout the day. The terminus in Downtown Detroit will be the Larned Street and Jefferson Avenue couplet to Griswold Street.

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	4:30 am – 1:30 am	15 – 20
Saturday	6:00 am – 2:30 am	20 – 30
Sunday	6:30 am – 11:00 pm	30

## Service Impacts

Overall, the Phase 2 recommendations add about 71,000 annual revenue hours to Phase 1 service, an increase of about 10% (see **Table 8**, does not include the service impacts of microtransit service).

**Table 8: Phase 2 Impacts to Revenue Hours**

Route	Weekday Revenue Hours	Saturday Revenue Hours	Sunday Revenue Hours	Total Annual Revenue Hours
Total Phase 2	2,082.9	1,309.0	774.3	2,082.9
Total Phase 1	1,890.4	1,105.3	577.5	1,890.4
<b>Difference</b>	<b>10.2%</b>	<b>18.4%</b>	<b>34.1%</b>	<b>10.2%</b>

**Table 9** illustrates how these revenue hours are split between the 3 different counties of SMART's service area.

**Table 9: Phase 2 County Breakdown of Revenue Hours**

	Wayne County	Oakland County	Macomb County
<b>Phase 2</b>			
Annual County Revenue Hours	138,847.7	234,257.3	270,236.5
Share of Annual Systemwide Revenue Hours	21.6%	36.4%	42.0%
<b>Phase 1</b>			
Annual County Revenue Hours	134,449.8	230,075.5	207,722.8
Share of Annual Systemwide Revenue Hours	23.5%	40.2%	36.3%
<b>Difference in Share of Service</b>	<b>-1.9%</b>	<b>-3.8%</b>	<b>5.7%</b>

### 8.3 PHASE 3 RECOMMENDATIONS

Phase 3 recommendations focus on building out the microtransit service into new areas in Macomb and Wayne counties and doubling the weekday frequencies of the Crosstown service. In addition, a FAST route will be introduced to improve connections to the western part of the service area and possibly to new areas of Oakland County.

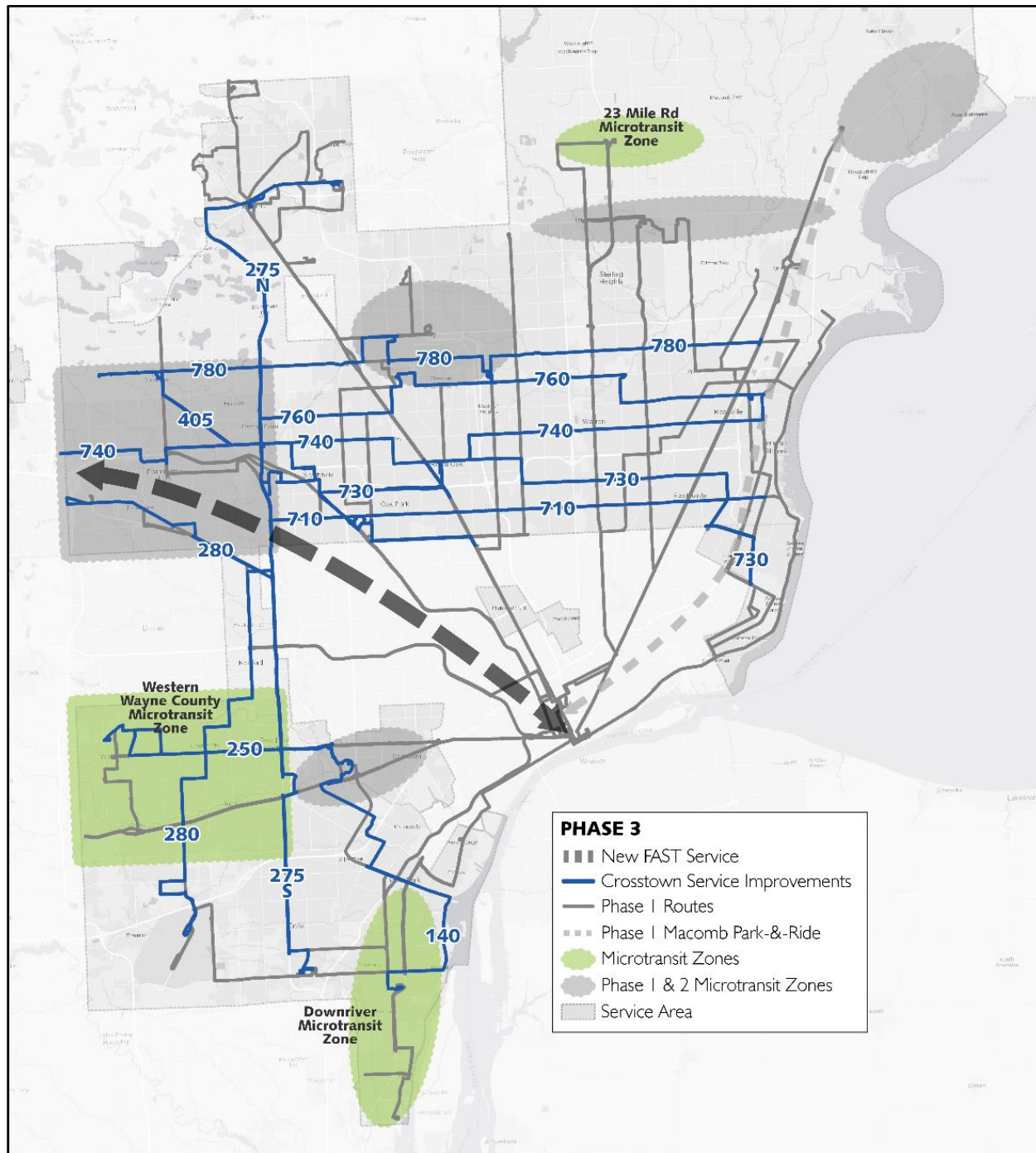
The key objectives of Phase 3 are improving system travel times and route connections with more frequent Crosstown routing. The existing service operates at 60-minute frequency on most east – west Crosstown routes which makes transfers between routes challenging if time points do not match up or if a service is running late. The proposed service would improve weekday peak frequencies to between 20 and 30 minutes. The improvements will speed up the system and make it more attractive to current and new riders. The Phase 3 recommendations are shown in **Figure 54**.

Key features of the scenario are as follows:

- Add microtransit zones at 23 Mile Road (near Van Dyke), Western Wayne County and Downriver
- Improve weekday frequencies on all Crosstown routes
- Split Route 760 12 Mile Crosstown at Oakland Mall to improve reliability of service
- Add new FAST service between Downtown Detroit and Farmington/Farmington Hills with potential future connections to Novi



Figure 54: Phase 3 Recommendations



## Improved Crosstown Service

Under Phase 3 recommendations, weekday frequencies on all Crosstown routes would be doubled as shown in the table below, and Route 760 would be split at Oakland Mall to form two separate routes to improve on-time performance and the reliability of the service by transitioning from one of the longest routes in the system to two shorter routes. In most cases Crosstown service would improve from 60 minute headways to 30 minute headways or better.

### Route 760

- 760 West: Telegraph Road and 12 Mile Road in Southfield (see Phase I extension of Route 760) to Oakland Mall
- 760 East: Oakland Mall to Meijer in Roseville

### Proposed Service Levels

ROUTE	WEEKDAY FREQUENCY (minutes)	
	Peak	Off-Peak
140	30	30
250	25	25
275 N	30	30
275 S	30	30
280/330	30	30
405	30	30
710	15	30
730	30	30
740 W	15	30
740 E	15	30
*NEW* 760 W	30	30
*NEW* 760 E	30	30
780	30	30

## New FAST Corridor to Western Oakland County

Phase 3 focuses on improving connections in the system to allow passengers to have faster travel times through more frequent service on crosstown routes. In addition, Phase 3 will improve travel times between Downtown Detroit and the western part of the service area in Farmington/Farmington Hills and possibly new service area member cities such as Novi. The exact routing of the service has yet to be identified as the route could utilize the Grand River Corridor, John Lodge Freeway/I-696 or other potential routes. The route would attract riders for commute trips from Farmington, Farmington Hills and potentially Novi to Downtown Detroit and for workforce and shopping trips from Detroit to Twelve Oaks Mall and other retail centers in the area. The direct routing and limited stops of the FAST service would be an attractive option for new riders. Although the service is at the conceptual stage, the projected service characteristics are displayed below.

### Proposed Service Levels

Service Period	SERVICE SPAN	FREQUENCY (minutes)
Weekday	4:30 am – 1:30 am	15 – 20
Saturday	6:00 am – 2:30 am	20 – 30
Sunday	6:30 am – 11:00 pm	30

### Microtransit

If microtransit pilot projects in Phases 1 and 2 are successful, it is recommended to continue to add new zones in Phase 3. For this phase, SMART would continue to improve access to new parts of the service area with microtransit in the following locations:

- 23 Mile Road near Van Dyke (Macomb County) for better connections to workforce opportunities in the area. The zone would connect to the new FAST Van Dyke service for direct connections to Downtown Detroit.
- Western Wayne County – west of Telegraph Road to improve access in Westland, Garden City, Wayne, and Inkster. The service would connect to SMART routes along the Ford Road, Telegraph Road and Grand River corridors.
- Downriver in southern Wayne County – improve access and coverage to residential and commercial areas that are difficult to serve by limited fixed route service. The service would connect to SMART routes on the Eureka Road, West Jefferson and Fort Street corridors.

### Service Impacts

Overall, the Phase 3 recommendations add about 148,000 annual revenue hours to Phase 2 service, an increase of about 23% (see **Table 10**, does not include the service impacts of microtransit service).

**Table 10: Phase 3 Impacts to Revenue Hours**

Route	Weekday Revenue Hours	Saturday Revenue Hours	Sunday Revenue Hours	Total Annual Revenue Hours
Total Phase 3	2,622.2	1,431.7	848.0	791,099.8
Total Phase 2	2,082.9	1,309.0	774.3	643,341.5
<b>Difference</b>	<b>25.9%</b>	<b>9.4%</b>	<b>9.5%</b>	<b>23.0%</b>

**Table 11** illustrates how these revenue hours are split between the 3 different counties of SMART's service area.

Table 11: Phase 3 County Breakdown of Revenue Hours

	Wayne County	Oakland County	Macomb County
Phase 3			
Annual County Revenue Hours	176,713.7	320,132.1	294,254.0
Share of Annual Systemwide Revenue Hours	22.3%	40.5%	37.2%
Phase 2			
Annual County Revenue Hours	138,847.7	234,257.3	270,236.5
Share of Annual Systemwide Revenue Hours	21.6%	36.4%	42.0%
<b>Difference in Share of Service</b>	<b>0.8%</b>	<b>4.1%</b>	<b>-4.8%</b>

## 8.4 PHASE 4 RECOMMENDATIONS

Phase 4 recommendations are focused on longer term improvements from the years 2026 to 2030. This phase builds on the previous phases with the implementation goal of increasing ridership and improving the passenger experience. The key components of Phase 4 include:

- Monitor and make adjustments to Phases 1 – 3 service
- Continue the transition to clockface headways on all routes
- Improve frequencies on high performing routes
- Implement additional microtransit service as needed
- Continue to improve weekend service coverage and frequencies as ridership increases

The Phase 4 implementation prioritization will be based on the system performance and funding opportunities after the first five years of the COA planning horizon. SMART will continue to monitor the service of the new routes and make updates based on defined service standards and performance measures. As the new services mature, a service prioritization plan can be implemented to better define the agency's goals for the last five years of the plan. For example, if the microtransit zones successfully provide cost effective and efficient service in the first three phases, then additional zones may be the highest priority to meet demand in other areas, including cities that may join the SMART service area. Phase 4 will also provide the opportunity to improve travel times and connections between routes with higher frequency service on weekdays and weekends.

## 9.0 FINANCIAL PLAN

This section provides the operating cost, capital cost, and revenue assumptions used in the development of the SMART Path COA Financial Plan. Dollar values shown here are given as year of expenditure equivalents, unless indicated otherwise. **Table 12** provides the factors used to escalate costs from an FY19 base to year of expenditure amounts. Operating costs were escalated based on a variable factor from SMART financial planning staff to reflect expected timing of salary adjustments. Vehicle costs assume an annual escalation of 3.5% and non-vehicle capital costs assume 2.7% annual escalation.

**Table 12: Cost Escalation Factors**

Fiscal Year	2020	2021	2022	2023	2024	2025
Operating Cost Escalation <sup>1</sup>	3.0%	2.0%	2.5%	2.0%	2.5%	3.0%
Vehicle Capital Cost Escalation	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Non-Vehicle Capital Cost Escalation	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%

Service levels and costs for FY19 were used to develop an approximate unit cost of \$150 per fixed route vehicle revenue hour, as shown in **Table 13**. These values are for SMART-operated revenue service only and exclude the Route 566 Price School as this service was not representative of expected costs for planned service changes. Additionally, FY19 route revenue of \$11,960,158 was used to generate an approximate revenue recovery ratio, inclusive of allocated farebox, ticket and pass sales, of 14.6%.

**Table 13: 2019 Baseline Service Costs**

Day of the Week	Service Days	Daily Revenue Hr.	Annual Revenue Hr.	FY 19 Operating Cost (Platform) <sup>1</sup>	FY19 Cost per Revenue Hr.
Weekday	254	1,841	467,487	\$70,095,872	\$ 150
Saturday	53	1,017	53,880	\$7,801,685	\$ 145
Sunday	58	494	28,629	\$4,257,478	\$ 149
Annual Total	365		549,996	\$82,155,035	\$ 150

For each plan phase, the change in fixed route vehicle revenue hours as compared to the baseline service levels given in **Table 13** were multiplied by a unit cost of \$150 (FY19) to arrive at an incremental cost of service recommendations. Incremental revenue is assumed to cover 14.6% of these additional costs. All costs were escalated to year of expenditure (YOE) based on an assumption of Phase 1 changes beginning in FY21, Phase 2 beginning in FY22 and Phase 3 beginning in FY24, as shown in **Table 14**.

**Table 14: Fixed Route Operating Costs**

Plan Phase	Phase 1		Phase 2		Phase 3
Fiscal Year	2021	2022	2023	2024	2025
Annual Revenue Hr.	577,845	648,958	796,693	796,693	796,693
Incremental Revenue Hr.	27,849	98,962	246,698	246,698	246,698
Incremental Op. Cost (YOE)	\$4.39 M	\$15.99 M	\$16.31 M	\$41.66 M	\$42.91 M
Incremental Revenue (YOE)	\$639 k	\$2.33 M	\$2.37 M	\$6.07 M	\$6.25 M



Two financial plans have been developed for COA scenarios excluding (Financial Scenario A) and including (Financial Scenario B) implementation of microtransit service. Costs to implement microtransit service are assumed to be approximately \$50 per vehicle revenue hour<sup>4</sup>. Spare Labs annualized 2020 cost estimates for a “Medium-Demand”, “Low-Cost” microtransit profile are shown below in **Table 15** and escalated according to the factors given in **Table 12**. These costs would apply for either door-to-door or stop-to-stop service, which optimize a given vehicle profile for either walk times or wait times, respectively. An additional 10% above the Spare Labs operations and maintenance estimates was assumed to account for turn-key microtransit operations, eliminating the need for SMART to purchase and maintain microtransit vehicles. Costs are assumed to be offset by a reduction of 4,614 annual fixed route revenue hours for replacement of Route 567 by the New Baltimore Microtransit Zone. The Oakland Mall/Somerset Microtransit Zone would replace Connector services at these locations.<sup>5</sup> Similar to fixed route service, incremental service revenue is estimated as 14.6% of the net service costs. Changes to the level of service or demand profile could affect cost and revenue assumptions.

**Table 15: Microtransit Operating Costs**

Fiscal Year	2020	2021	2022	2023	2024	2025
Dearborn	\$440 k	\$449 k	\$460 k	\$469 k	\$481 k	\$495 k
New Baltimore	\$820 k	\$836 k	\$857 k	\$874 k	\$896 k	\$923 k
Oakland Mall/ Somerset	\$550 k	\$561 k	\$575 k	\$587 k	\$601 k	\$619 k
Hall Road	\$550 k	\$561 k	\$575 k	\$587 k	\$601 k	\$619 k
Subtotal	\$2.36 M	\$2.41 M	\$2.47 M	\$2.52 M	\$2.58 M	\$2.66 M
Plus 10% for turn-key service	\$2.60 M	\$2.65 M	\$2.71 M	\$2.77 M	\$2.84 M	\$2.92 M
Route 567 Elimination	(\$692 k)	(\$706 k)	(\$724k)	(\$738 k)	(\$757 k)	(\$779 k)
<b>Net Cost of Microtransit Service Changes</b>	<b>\$1.90 M</b>	<b>\$1.94M</b>	<b>\$1.99 M</b>	<b>\$2.03M</b>	<b>\$2.08M</b>	<b>\$2.14M</b>

Because services are assumed to be provided by a turn-key operator, there are no capital costs associated with microtransit service implementation. **Table 16** highlights capital needs associated with expansion or transition of fleet to accommodate fixed route service recommendations. Vehicle costs include standard IT bus equipment and are based on SMART’s vehicle cost schedule with a 3.5% annual cost escalation. Fleet expansion estimates assume use of similar vehicles across standard and FAST Route services, where fleet expansion would only occur where the sum of FAST and standard vehicle requirements exceeds available fleet. Fleet conversion represents the number of vehicles currently used for fixed route services that would need to be re-branded for use on FAST routes. Costs for fleet conversion include new vehicle wraps and are included in non-vehicle capital estimates.

<sup>4</sup> Spare Labs, SMART Realize Report, 2020

<sup>5</sup> Costs associated with deferred Connector service have not been included in the COA recommendations but could comprise part of the 2021 TBD service cuts needed to implement Phase 1. See Tables 18 and 20.

**Table 16: Vehicle Capital Costs**

Plan Phase	Baseline	Phase 1	Phase 2	Phase 3
Fiscal Year	2020	2021	2022	2024
FAST Branded Vehicles in Peak Service	33	27	39	49
FAST & Standard Vehicles in Peak Service	206	187	199	185
Total Fleet	278	278	278	281
Fleet Expansion <sup>3</sup>	N/A	0	0	3
Fleet Conversion <sup>4</sup>	N/A	0	6	10
Expansion Cost (YOE)	N/A	\$ -	\$ -	\$1,816,650

Non-vehicle capital costs, as shown in **Table 17**, are associated with the rebranding of vehicles for FAST service as well as costs associated with new locations for bus stop amenities. The number of amenities is based on average stop spacing of 1 per mile for new FAST service route mileage and 4 per mile for new standard bus route mileage. All (100%) of new FAST stops would receive full amenities at a cost of \$33k (FY19). For standard routes, it was assumed that 10% would receive shelter treatment, 20% would receive bench treatment, and 70% would receive pole & sign treatment. ADA curb and sidewalk improvements were assumed for key walks at approximately 20% of all new FAST and standard bus stops.

**Table 17: Non-Vehicle Capital Costs**

Plan Phase		Phase 1 (Fixed Route)	Phase 2 (FAST)	Phase 3 (FAST)
Fiscal Year		2021	2022	2024
New Round Trip Mileage		94.0	56.5	52.0
<b>Capital Item</b>	<b>FY19 Unit Cost</b>	<b>Incremental Capital Quantities by Phase</b>		
FAST Stop	\$33,097	0	57	52
FAST wrap	\$4,000	0	6	10
Shelter Stop	\$12,097	38	0	0
Bench Stop	\$6,297	75	0	0
Pole & Sign Stop	\$97	263	0	0
Key Walks	\$2,000	75	11	10
Non-Vehicle Capital Cost (YOE)		\$1,168,083	\$2,093,328	\$2,034,824

The following tables comprise the SMART Path COA Financial Plans. Tables 18 and 19 present Financial Scenario A associated with fixed route service recommendations without microtransit. Tables 20 and 21 present Financial Scenario B with microtransit costs included. Tables 18 and 20 present the operating costs associated with each financial plan. FY19 and FY20 figures reflect actual and projected amounts as of April, 2020. These amounts reflect recent trends and may not reflect amounts presented in the 5-year System Financial Plan. Capital costs for Financial Scenarios A and B are presented in Tables 19 and 21, respectively.

As shown, Financial Scenario A requires approximately \$4.6 M worth of service reductions (TBD) in 2021 to implement Phase 1 operations while Financial Scenario B requires \$6.4 M in 2021 service reductions. Both Scenarios would require identification of additional revenue sources for Phase 3 of approximately \$11.3 M in 2024 and \$16.7 M in 2025.

Table 18: SMART Path COA Financial Scenario A - Operating

<b>Operating Budget</b>	<b>FY19 (Actual)</b>	<b>FY20 (Projected)</b>	<b>FY21 (Budgeted)</b>	<b>FY22 (Estimated)</b>	<b>FY23 (Estimated)</b>	<b>FY24 (Estimated)</b>	<b>FY25 (Estimated)</b>
<b>Revenue</b>							
Federal Grants <sup>2</sup>	\$8,597,258	\$9,472,780	\$10,238,000	\$10,651,530	\$10,864,561	\$12,882,640	\$13,269,119
Federal Grant % of Operating Expense	6%	7%	7%	7%	7%	7%	7%
State Grants <sup>3</sup>	\$44,932,634	\$38,464,016	\$44,836,000	\$48,036,072	\$49,666,565	\$58,892,067	\$60,658,829
State Grant % of Operating Expense	33%	30%	31%	32%	32%	32%	32%
County Contribution <sup>4</sup>	\$76,434,266	\$73,350,804	\$75,282,000	\$76,034,820	\$76,795,168	\$77,563,120	\$78,338,751
County % of Operating Expense	53%	54%	51%	50%	50%	46%	45%
Base Service Route Revenue <sup>5</sup>	\$11,960,158	\$9,709,803	\$10,965,100	\$11,074,751	\$11,185,499	\$11,297,353	\$11,410,327
Incremental Fare Revenue (10% FBR)	\$ -	\$ -	\$511,592	\$1,673,068	\$1,706,529	\$4,244,142	\$4,371,466
Other Income <sup>6</sup>	\$3,128,826	\$4,006,176	\$4,648,000	\$4,694,480	\$4,741,425	\$4,788,839	\$4,836,727
<b>Total Operating Revenue</b>	<b>\$145,053,142</b>	<b>\$135,003,579</b>	<b>\$146,480,692</b>	<b>\$152,164,721</b>	<b>\$154,959,747</b>	<b>\$169,668,161</b>	<b>\$172,885,220</b>
<b>Expenses</b>							
Base Service Operating Expense <sup>7</sup>	\$125,661,882	\$119,811,707	\$132,130,772	\$135,434,041	\$138,142,722	\$141,596,290	\$145,844,179
Restricted Operating Expenses	\$8,587,046	\$9,331,854	\$9,234,000				
Incremental Operating Cost (Fixed Route)	\$ -		\$5,115,920	\$16,730,680	\$17,065,294	\$42,441,419	\$43,714,662
<b>Total Operating Expense</b>	<b>\$134,248,928</b>	<b>\$129,143,561</b>	<b>\$146,480,692</b>	<b>\$152,164,721</b>	<b>\$155,208,016</b>	<b>\$184,037,710</b>	<b>\$189,558,841</b>
<b>Revenues over (under) expenses</b>	<b>\$10,804,214</b>	<b>\$5,860,018</b>	<b>\$0</b>	<b>\$ -</b>	<b>\$ (248,269)</b>	<b>\$ (14,369,548)</b>	<b>\$ (16,673,621)</b>

Table 19: SMART Path COA Financial Scenario A - Capital

<b>Capital Budget</b>	FY20	FY21	FY22	FY23	FY24	FY25
<b>Revenues</b>						
Federal Share (FY20 FP) <sup>8</sup>	\$29,808,220	\$32,826,060	\$34,581,818	\$32,223,322	\$30,997,676	\$29,600,000
Additional Federal (80% Incremental Capital) <sup>9</sup>	\$ -	\$934,466	\$1,674,663	\$ -	\$3,081,179	\$ -
State & Local Share (FY20 FP) <sup>8</sup>	\$8,733,169	\$9,497,686	\$9,980,472	\$9,458,599	\$9,028,549	\$7,400,000
Additional State (10% Incremental Capital) <sup>9</sup>	\$ -	\$116,808	\$209,333	\$ -	\$385,147	\$ -
<b>Expenses</b>						
5-year Capital Plan Total Budget <sup>8</sup>	\$34,230,529	\$38,863,956	\$40,985,576	\$37,924,539	\$36,598,545	\$37,000,000
Incremental Vehicle Capital Costs	\$ -	\$ -	\$ -	\$ -	\$1,816,650	\$ -
Incremental Non-Vehicle Capital	\$ -	\$1,168,083	\$2,093,328	\$ -	\$2,034,824	\$ -
<b>Total Capital Expenses</b>	\$34,230,529	\$40,032,039	\$43,078,904	\$37,924,539	\$40,450,019	\$37,000,000
<b>Revenues over (under) expenses</b>	\$4,310,860	\$3,342,982	\$3,367,381	\$3,757,382	\$3,042,533	\$ -
<b>Grand Total Capital and Operating Funding To be Identified (Reserves)</b>	<b>\$ (10,170,878)</b>	<b>\$ (3,342,982)</b>	<b>\$ (3,367,381)</b>	<b>\$ (3,509,113)</b>	<b>\$11,327,016</b>	<b>\$16,673,621</b>
<sup>1</sup> Based on anticipated wage adjustments						
<sup>2</sup> FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-FY2025 assume increase in federal revenue proportional with service levels, at approximately 7% of operating costs.						
<sup>3</sup> FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-FY2025 assume increase in state revenue for new services, not to exceed 32% of total operating costs.						
<sup>4</sup> FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-2025 Assume passage of a \$1 per \$1000 property tax renewal in August 2022 and annual 1% growth in property tax base.						
<sup>5</sup> FY2019 - FY2021 actual, projected, and budgeted amounts reflect observed declines in DART pass sales as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-2025 assume 1% growth annually.						
<sup>6</sup> Includes interest, fleet maintenance reimbursement, advertising, miscellaneous, and LCT operating Revenue. FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-FY2025 assume 1% growth annually.						
<sup>7</sup> FY2019 & FY2020 actual and projected expense as of 4/7/2020 from SMART Financial Director. FY2021 budget reflects assumes \$4.6 M service reductions (TBD) to offset the incremental cost of phase I recommendations. These cuts are to be determined and are not included in the COA plan.						
<sup>8</sup> FY20-FY24 from 5-Year Financial Plan, FY25 assumes 80% Federal 20% State and local share for approximate \$37 M in vehicle replacement cost. The COA would not require additional FY25 capital costs beyond typical vehicle replacement.						
<sup>9</sup> Assumes 80% Federal and 10% State share for incremental project capital costs.						

Table 20: SMART Path COA Financial Scenario B - Operating

<b>Operating Budget</b>	<b>FY19 (Actual)</b>	<b>FY20 (Projected)</b>	<b>FY21 (Budgeted)</b>	<b>FY22 (Estimated)</b>	<b>FY23 (Estimated)</b>	<b>FY24 (Estimated)</b>	<b>FY25 (Estimated)</b>
<b>Revenue</b>							
Federal Grants <sup>2</sup>	\$8,597,258	\$9,472,780	\$10,238,000	\$10,665,464	\$10,878,773	\$12,897,207	\$13,284,124
Federal Grant % of Operating Expense	6%	7%	7%	7%	7%	7%	7%
State Grants <sup>3</sup>	\$44,932,634	\$38,464,016	\$44,836,000	\$48,022,138	\$49,731,536	\$58,958,662	\$60,727,422
State Grant % of Operating Expense	33%	30%	31%	32%	32%	32%	32%
County Contribution <sup>4</sup>	\$76,434,266	\$73,350,804	\$75,282,000	\$76,034,820	\$76,795,168	\$77,563,120	\$78,338,751
County % of Operating Expense	53%	54%	51%	50%	49%	46%	45%
Base Service Route Revenue <sup>5</sup>	\$11,960,158	\$9,709,803	\$10,965,100	\$11,074,751	\$11,185,499	\$11,297,353	\$11,410,327
Incremental Fare Revenue (10% FBR)	\$ -	\$ -	\$705,790	\$1,872,121	\$1,909,563	\$4,452,252	\$4,585,819
Other Income <sup>6</sup>	\$3,128,826	\$4,006,176	\$4,648,000	\$4,694,480	\$4,741,425	\$4,788,839	\$4,836,727
<b>Total Operating Revenue</b>	<b>\$145,053,142</b>	<b>\$135,003,579</b>	<b>\$146,674,890</b>	<b>\$152,363,774</b>	<b>\$155,241,964</b>	<b>\$169,957,434</b>	<b>\$173,183,170</b>
<b>Expenses</b>							
Base Service Operating Expense <sup>7</sup>	\$125,661,882	\$119,811,707	\$130,382,992	\$133,642,567	\$136,315,418	\$139,723,304	\$143,915,003
Restricted Operating Expenses	\$8,587,046	\$9,331,854	\$9,234,000				
Incremental Operating Cost (Fixed Route)	\$ -		\$5,115,920	\$16,730,680	\$17,065,294	\$42,441,419	\$43,714,662
Incremental Operating Cost (Microtransit)	\$ -		\$1,941,978	\$1,990,527	\$2,030,338	\$2,081,096	\$2,143,529
<b>Total Operating Expense</b>	<b>\$134,248,928</b>	<b>\$129,143,561</b>	<b>\$146,674,890</b>	<b>\$152,363,774</b>	<b>\$155,411,050</b>	<b>\$184,245,819</b>	<b>\$189,773,194</b>
<b>Revenues over (under) expenses</b>	<b>\$10,804,214</b>	<b>\$5,860,018</b>	<b>\$0</b>	<b>\$ -</b>	<b>\$ (169,086)</b>	<b>\$ (14,288,386)</b>	<b>\$ (16,590,024)</b>



Table 21: SMART Path COA Financial Scenario B - Capital

<b>Capital Budget</b>	FY20	FY21	FY22	FY23	FY24	FY25
<b>Revenues</b>						
Federal Share (FY20 FP) <sup>8</sup>	\$29,808,220	\$32,826,060	\$34,581,818	\$32,223,322	\$30,997,676	\$29,600,000
Additional Federal (80% Incremental Capital) <sup>9</sup>	\$ -	\$934,466	\$1,674,663	\$ -	\$3,081,179	\$ -
State & Local Share (FY20 FP) <sup>8</sup>	\$8,733,169	\$9,497,686	\$9,980,472	\$9,458,599	\$9,028,549	\$7,400,000
Additional State (10% Incremental Capital) <sup>9</sup>	\$ -	\$116,808	\$209,333	\$ -	\$385,147	\$ -
<b>Expenses</b>						
5-year Capital Plan Total Budget <sup>8</sup>	<b>\$34,230,529</b>	<b>\$38,863,956</b>	<b>\$40,985,576</b>	<b>\$37,924,539</b>	<b>\$36,598,545</b>	<b>\$37,000,000</b>
Incremental Vehicle Capital Costs	\$ -	\$ -	\$ -	\$ -	\$1,816,650	\$ -
Incremental Non-Vehicle Capital	\$ -	\$1,168,083	\$2,093,328	\$ -	\$2,034,824	\$ -
<b>Total Capital Expenses</b>	<b>\$34,230,529</b>	<b>\$40,032,039</b>	<b>\$43,078,904</b>	<b>\$37,924,539</b>	<b>\$40,450,019</b>	<b>\$37,000,000</b>
<b>Revenues over (under) expenses</b>	<b>\$4,310,860</b>	<b>\$3,342,982</b>	<b>\$3,367,381</b>	<b>\$3,757,382</b>	<b>\$3,042,533</b>	<b>\$ -</b>
<b>Grand Total Capital and Operating Funding To be Identified (Reserves)</b>	<b>\$(10,170,878)</b>	<b>\$ (3,342,982)</b>	<b>\$ (3,367,381)</b>	<b>\$ (3,588,296)</b>	<b>\$11,245,853</b>	<b>\$16,590,024</b>
<sup>1</sup> Based on anticipated wage adjustments						
<sup>2</sup> FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-FY2025 assume increase in federal revenue proportional with service levels, at approximately 7% of operating costs.						
<sup>3</sup> FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-FY2025 assume increase in state revenue for new services, not to exceed 32% of total operating costs.						
<sup>4</sup> FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-2025 Assume passage of a \$1 per \$1000 property tax renewal in August 2022 and annual 1% growth in property tax base.						
<sup>5</sup> FY2019 - FY2021 actual, projected, and budgeted amounts reflect observed declines in DART pass sales as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-2025 assume 1% growth annually.						
<sup>6</sup> Includes interest, fleet maintenance reimbursement, advertising, miscellaneous, and LCT operating Revenue. FY2019 - FY2021 reflect actual, projected, and budgeted amounts as of 4/7/2020 from SMART Financial Director. Estimates for FY2022-FY2025 assume 1% growth annually.						
<sup>7</sup> FY2019 & FY2020 actual and projected expense as of 4/7/2020 from SMART Financial Director. FY2021 budget reflects assumes \$6.35 M service reductions (TBD) to offset the incremental cost of phase I recommendations. These cuts are to be determined and are not included in the COA plan.						
<sup>8</sup> FY20-FY24 from 5-Year Financial Plan, FY25 assumes 80% Federal 20% State and local share for approximate \$37 M in vehicle replacement cost. The COA would not require additional FY25 capital costs beyond typical vehicle replacement.						
<sup>9</sup> Assumes 80% Federal and 10% State share for incremental project capital costs.						

## 10.0 IMPLEMENTATION PLAN

This section outlines the steps that SMART must take to implement the recommendations of the plan and the sequence in which they need to be done. The primary tasks for implementation include the following categories:

### Service Planning

**Plan refinement:** Some changes to the Plan may be required as SMART solicits further feedback on the proposed service changes from stakeholders.

**Monitoring service after implementation:** Once the new service is in place, service standards should be monitored. Metrics should be compared to the recommended performance standards with the understanding that it may take one to two years to achieve the performance levels.

### Operations

**Final running times:** Preliminary running time calculations were done to establish estimates of bus service hours and the service plans. Additional route testing with a bus is ideal to finalize running times for the development of accurate route schedules.

### Bus Stops and Facilities

**Bus stop spacing:** Consideration should be taken for bus stop spacing on new route segments based on densities, surrounding land uses and type of bus service on the corridor.

**Bus facility and terminal needs:** There are no additional vehicles needed to operate Phases 1 and 2, however the added frequency of service in Phase 3 may require more buses. In order to accommodate the additional capacity needed for the buses, SMART should consider options such as expansion at existing bus terminals or identifying locations for a new terminal. The SMART Transit Asset Management plan should provide guidance for the planning of capital needs.

### Marketing New Service

**Information resources and marketing new services:** Marketing the Plan and new service types such as microtransit is key to success. SMART already has a robust marketing approach which was successful during the FAST launch. It will be important to continue that success and provide updated information via internet, social media, printed materials and advertising.

The following section outlines the recommended phased approach of the five-year plan.

### FY 2021 – Implement Phase 1

- Develop a system to monitor and track data for the Federal Transit Administration's National Transit Database (NTD) and the performance measures for fixed-route
- Prepare Title VI review to ensure that the level and quality of fixed-route are provided in a non-discriminatory manner
- Facilitate public hearings for new service
- Finalize microtransit zone boundaries

- Begin RFP process for microtransit provider
- Identify new bus stop locations and add bus stop facilities
- Test run new routings
- Develop service schedules
- Add pedestrian enhancements to provide safe access to and from new bus stops
- Initiate marketing campaign to promote new service and educate riders about microtransit
- Update marketing materials to reflect changes to the system
- Implement Phase 1 service changes in September 2020

### **FY 2022-2023 – Implement Phase 2**

- Monitor performance of fixed-route service to track the system after the Phase 1 implementation
- Update performance measures based on data collected after Phase 1 implementation
- Facilitate public hearings for new service
- Finalize microtransit zone boundaries
- Test run microtransit and new FAST Van Dyke
- Develop service schedules
- Add bus stop facilities and bus wraps for the FAST Van Dyke route
- Marketing campaign for new service
- Update marketing materials with new weekend and service schedules
- Implement Phase 2 service changes in September 2022

### **FY 2024-2025 – Implement Phase 3**

- Continue to monitor performance to track the system after the implementation of Phase 2
- Monitor fleet needs to plan for adequate inventory to operate Phase 3 recommendations (guidance provided by the SMART Transit Asset Management Plan)
- Monitor facility needs to plan for adequate capacity to accommodate vehicles for Phase 3 (guidance provided by the SMART Transit Asset Management Plan)
- Identify bus terminal expansion or new location if needed
- Update performance measures based on data collected after Phase 2 implementation
- Facilitate public hearings for new service
- Finalize microtransit zone boundaries
- Test run new microtransit and FAST
- Add bus stop facilities and bus wraps for the FAST route
- Develop service schedules
- Marketing campaign for new service
- Update marketing materials with new crosstown headways and service schedules
- Implement Phase 3 service changes in September 2024