

Southeast Michigan Regional Transit Feasibility Study

Feasible Options to Improve Transit in Southeast Michigan
December 2017

Southeast Michigan
Regional Transit Feasibility Study

Prepared for The Kresge Foundation by HNTB Corporation.

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1 Introduction

The Kresge Foundation has a longstanding commitment to improve access to a high-quality, connected transit system for all who live in and visit southeast Michigan. Following the defeated November 2016 Regional Transit ballot initiative, we and others were concerned that our region was left with few options to develop such a modern system. To respond to the concerns, Kresge engaged a team of national experts to research, identify and analyze a range of possible answers to important questions about transit's future in the metropolitan area. The resulting research is contained in this report.

The team was charged with conducting a multi-faceted analysis of possibilities for a comprehensive transit system. And they delivered. Their report offers some new concepts and revisits ideas that have been widely discussed in our community. It builds on past plans and efforts, drawing especially on the Regional Master Transit Plan (<http://www.rtamichigan.org/masterplan/>) that was developed and approved through a robust community engagement process in 2016.

The report is an assessment of options for the region, not a prescription for how the region should act. It takes no position about whether, when, or in what form, a regional transit initiative should be placed on the ballot. That is not our role as a private foundation. But it is our role to contribute to the base of information and analysis that others can utilize in making informed, balanced judgments about these, and other decisions that bear on the region's future direction in providing transit services.

Four overarching questions are explored in the study:

1. Are there ways that the Regional Master Transit Plan can serve the region more effectively?
2. How can connectivity between the airport and other parts of the region be improved?
3. Are the geographic boundaries of the transit region appropriately aligned with the services proposed?
4. Can transit services be structured to gain cost efficiencies and achieve a seamless rider experience across geographic boundaries?

This report may be accessed at www.kresge.org. We hope it contributes to a meaningful dialogue about our community's future.

Rip Rapson, President and CEO
The Kresge Foundation

2 Feasible Scenarios

To address the four questions of this Feasibility Study, the project team sought feedback during a discovery phase following the November 2016 referendum, on the election results, the Regional Master Transit Plan (RMTP), and the overall structure of the Southeast Michigan RTA (RTA). Sources of data included media articles, interviews with representatives of Macomb, Oakland, Washtenaw and Wayne counties, interviews with representatives of the City of Detroit, and interviews with the two primary metro Detroit area transit providers, SMART and DDOT.

Key insights from the discovery phase are summarized below under each of the four study questions. These insights characterize the recurring themes that were identified in the interview process and the broad community input that has been received and collected since November of 2016. Based on the feedback gathered by the study team, three Feasible Master Plan Scenarios were identified.

ARE THERE WAYS THAT THE TRANSIT MASTER PLAN CAN SERVE THE REGION MORE EFFECTIVELY?

Yes. Five major areas of potential improvement to be addressed in a future regional transit plan for the region have been summarized below.

THERE IS A NEED FOR “HIGH QUALITY” TRANSIT OPTIONS ON MORE CORRIDORS THROUGHOUT THE REGION.

The need for more “high quality” transit options is addressed in the feasible scenarios in a variety of ways ranging from the construction of light rail transit to the airport to the incorporation of reliable, rapid transit capital improvements on up to 16 corridors in the region.

FUTURE REGIONAL TRANSIT PLANS MUST ADDRESS EMERGING TECHNOLOGIES

Over the past decade, the transportation industry has experienced dramatic innovation. Recognizing the difficulty of identifying cutting edge transit mobility solutions and their future impacts during this time of accelerated innovation, feasible scenarios could include a program focused on Community Mobility & Innovation. This potential program could be designed to be flexible to respond to technological advances and the resulting individual community needs.

A REGIONAL PLAN SHOULD HAVE LOCAL CONTROL OVER SOME PROJECTS

The Community Mobility & Innovation program identified above could also allow for more local control of transit solutions by providing the local communities a formula allocation for

mobility-based projects. The program rules could be determined by the appropriate governing body.

CROSS COUNTY TRANSIT CONNECTIONS MUST BE IMPROVED

Geographically diverse employment centers are not well served by existing transit systems. An increase in funding is needed for improved service between job centers regardless of geographic and municipal boundaries to provide reliable transportation options for employees and complement the existing transit networks.

MORE COMMUTER EXPRESS SERVICES ARE NEEDED TO SUPPORT JOB CENTERS

Potential future feasible scenarios should expand the Commuter Express project category beyond the four routes in the current RMTP.

Based on the feedback gathered by the study team, three Feasible Master Plan Scenarios were identified. Projects included in each plan are compared below in Table 1 with project variations between scenarios highlighted in yellow. Table 2 summarizes the risk assessment of each Feasible Master Plan Scenario. Finally, summaries of the three Feasible Master Plan Scenarios are included in **Appendix A**. A table comparing the 2016 Regional Master Plan and the three Feasible Master Plan Scenarios can be found in **Appendix B**.

TABLE 1: FEASIBLE SCENARIO COMPARISON TABLE

Route	Scenario 1 Major Infrastructure (\$11.3B)	Scenario 2 Moderate Infrastructure (\$8.6B)	Scenario 3 Phased Plan (\$5.9B)
Commuter Rail (Ann Arbor-New Center)	X	X	X
Commuter Rail (Ann Arbor-Downtown)			PD*
Commuter Rail Feeder Bus Route(s)	X	X	X
Light Rail (LRT) Detroit - DTW	X	N/A	PD*
Streetcar System Expansion	N/A	N/A	PD*
Future Q-Line Operations	X	X	X
Airport Express	X	X	X
Commuter Express	X	X	X
Park-and Ride Lots	X	X	X
Premium - BRT	X	X	PD*
BRT Light (\$1.5 M per Mile)	11	11	5
Cross County Connector	N/A	N/A	10
Local routes	X	X	X
Paratransit	X	X	X
Community Mobility and Innovation	X	X	X
Regional Integrated Fare System	X	X	X
One Click-One Call Center	X	X	X
Facilities Improvements	X	X	X

*PD = Planning, design and project development

**X = Equivalent projects

TABLE 2: FEASIBLE MASTER PLAN SCENARIO RISK ASSESSMENT INDEX

	Scenario 1 Major Infrastructure	Scenario 2 Moderate Infrastructure	Scenario 3 Phased Plan
Meeting Regional Needs	Yes	Yes	Yes
Implementation Risk	Medium	Medium	Low
85% Compliant	Yes	Yes	Yes
Revenue Risk	High	Medium	Low

HOW CAN CONNECTIVITY BETWEEN THE AIRPORT AND OTHER PARTS OF THE REGION BE IMPROVED?

It is recognized that the current level of transit service connecting to Detroit Metropolitan Airport (DTW) is insufficient for a region of the population and size of SE Michigan. Currently, two local SMART routes in the Detroit metro area and the improved Air Ride express service from Ann Arbor to Detroit are the only public transportation alternatives to the airport. In fact, most major metropolitan areas similar in size to SE Michigan have a premium rail service to the airport in addition to the traditional public transportation.

TABLE 3: METROPOLITAN STATISTICAL AREAS WITH POPULATION GREATER THAN 1 MILLION AND AIRPORT TRANSIT

MSA	Population	Service Name to Airport	Type
New York-Newark-Jersey City, NY-NJ-PA Metro Area	19,979,950	Airtrain JFK	People Mover
Los Angeles-Long Beach-Anaheim, CA Metro Area	13,154,457	Metro Green Line	Shuttle to Light Rail
Chicago-Naperville-Elgin, IL-IN-WI Metro Area	9,534,008	Blue Line - O'Hare	Community/Intercity Rail
Chicago-Naperville-Elgin, IL-IN-WI Metro Area	9,534,008	Orange Line - Midway	Community/Intercity Rail
Dallas-Fort Worth-Arlington, TX Metro Area	6,833,420	Orange Line	Light Rail
Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area	5,949,403	Washington Metro Blue Line	Community/Intercity Rail
Miami-Fort Lauderdale-West Palm Beach, FL Metro Area	5,861,000	Green and Orange Lines	Community/Intercity Rail
Atlanta-Sandy Springs-Roswell, GA Metro Area	5,535,837	Red and Gold Lines	Light Rail
San Francisco-Oakland-Hayward, CA Metro Area	4,528,894	BART - Pittsburg/Bay Point-SFO/Millbrae	Community/Intercity Rail

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MSA	Population	Service Name to Airport	Type
San Francisco-Oakland-Hayward, CA Metro Area	4,528,894	BART - Coliseum–Oakland Int'l Airport	People Mover to Heavy
Phoenix-Mesa-Scottsdale, AZ Metro Area	4,407,915	Valley Metro Rail	Light Rail
Detroit-Warren-Dearborn, MI Metro Area	4,296,416	SMART	Local Bus
Seattle-Tacoma-Bellevue, WA Metro Area	3,614,361	Central Link	Light Rail
Minneapolis-St. Paul-Bloomington, MN-WI Metro Area	3,458,790	Blue Line	Light Rail
St. Louis, MO-IL Metro Area	2,801,914	MetroLink	Light Rail
Baltimore-Columbia-Towson, MD Metro Area	2,769,818	Blue Line	Light Rail
Denver-Aurora-Lakewood, CO Metro Area	2,703,972	A-Line	Light Rail
Portland-Vancouver-Hillsboro, OR-WA Metro Area	2,320,323	MAX Red Line	Light Rail
Cleveland-Elyria, OH Metro Area	2,064,483	Red Line	Community/Intercity Rail
San Jose-Sunnyvale-Santa Clara, CA Metro Area	1,925,706	VTA's Metro/Airport Light Rail	Shuttle to Light Rail
Providence-Warwick, RI-MA Metro Area	1,606,424	MBTA Commuter Rail	Community/Intercity Rail
Milwaukee-Waukesha-West Allis, WI Metro Area	1,570,006	Amtrak	Community/Intercity Rail
Salt Lake City, UT Metro Area	1,139,851	TRAX Green Line	Light Rail

Each Feasible Master Plan Scenario presented previously improves the transit connection to DTW.

Scenario 1 includes light rail transit (LRT) service along Michigan Avenue with 15-minute peak frequency from downtown to Detroit Metro Airport, including direct service to both the McNamara and North terminals.

Scenario 2 replaces the light rail transit with high quality bus rapid transit (BRT) services (including lane dedication). Direct service to both the McNamara and North terminals is included in this scenario.

Lastly, **Scenario 3** takes a phased approach to the ultimate vision of LRT between downtown Detroit and DTW airport by implementing BRT with minimal capital improvements in the immediate term while the necessary planning, design and project

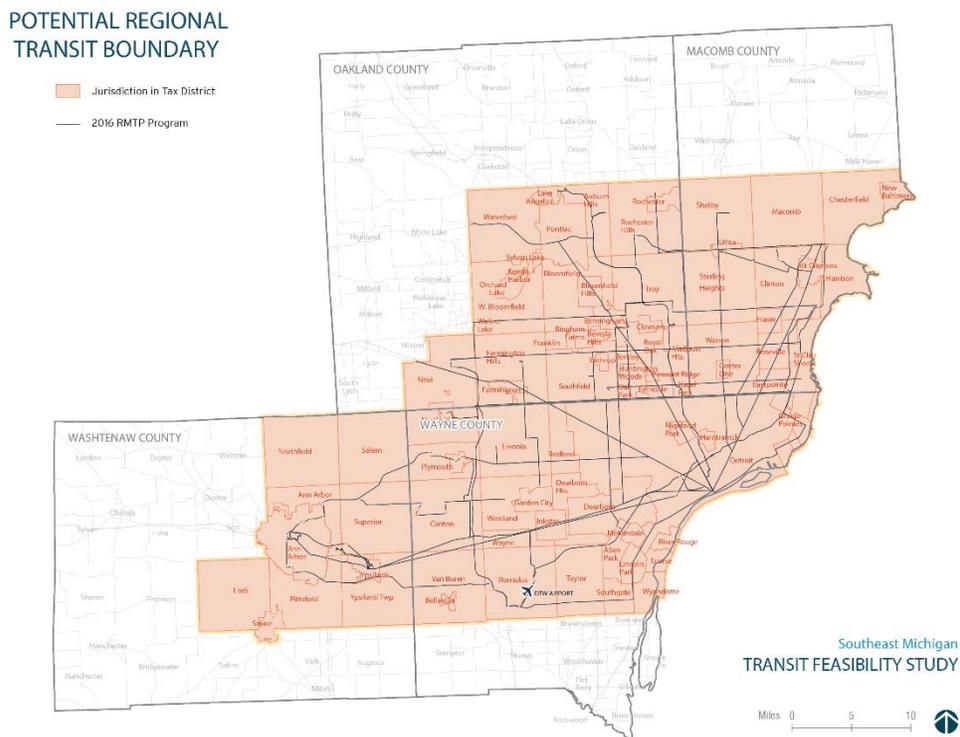
development for light rail service to the airport is completed. Under this scenario, future funding for the light rail construction and operations could be sought once substantial project definition and development has occurred.

In addition to the high quality, frequent BRT and LRT services in Wayne County offered in all three scenarios above, accessibility to the airport is also improved with four new direct airport express services from Macomb, Oakland and Washtenaw counties that serve the airport hourly.

ARE THE GEOGRAPHIC BOUNDARIES OF THE TRANSIT REGION APPROPRIATELY ALIGNED WITH THE SERVICES PROPOSED?

Analysis of the November 2016 voting data along with feedback from stakeholders and regional leaders showed a direct correlation between support of the RMTP and proximity to fixed-route service or “lines on a map”. To respond to this question, several geographic “definitions” of the Southeast Michigan transit region were considered, including the current definition (entire four-county region), and variations of the federally defined urbanized areas of Detroit and Ann Arbor. Comparison of the urbanized areas with proposed fixed-route transit services revealed close alignment. Gathering available data, a potential revised Regional Transit Boundary was identified and is presented in Figure 1 below.

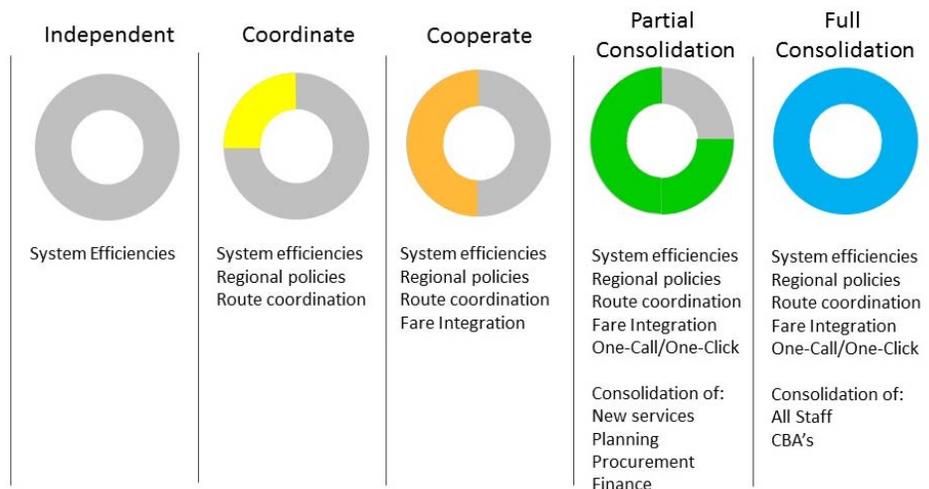
FIGURE 1: POTENTIAL REGIONAL TRANSIT BOUNDARY



CAN TRANSIT SERVICES BE STRUCTURED TO GAIN COST EFFICIENCIES AND ACHIEVE A SEAMLESS RIDER EXPERIENCE ACROSS GEOGRAPHIC BOUNDARIES?

Several options to gain cost efficiencies and achieve various levels of a seamless customer experience exist and range from agency cooperation to full consolidation of existing transit agencies.

FIGURE 2: POTENTIAL TRANSIT SERVICE STRUCTURES TO IMPROVE EFFICIENCY AND RIDER EXPERIENCE



Options considered during the feasibility study effort include:

- Complete Consolidation of RTA, DDOT, and SMART services
- Consolidation of New Service, Planning, Procurement and Administration Only
- Cooperative agreements with common fares, branding and policies for agencies that remain separate and distinct

There are risk/reward considerations associated with the three alternatives considered.

RISKS

Three risk areas identified for the new transit service structures include the potential for cost increases, legislative requirements and possible loss in transit ridership. All three potential risks categories registered the same risk level for partial consolidation and cooperation/consolidation scenarios. Full consolidation registers a higher risk in the

potential cost increase category (due to the likely renegotiation of current labor agreements) and the required legislative changes required for full consolidation.

Despite registering the highest potential for risk, full consolidation remains a viable option, however the full transition to one agency could be time intensive. Pursuit of either cooperation/coordination and partial consolidation in the interim does not preclude full consolidation from occurring in the future and could be a viable interim solution if full consolidation is desired.

TABLE 4: RISK CONSIDERATIONS FOR TRANSIT AGENCY STRUCTURES CHANGES

	Potential Cost Increase	Legislative Changes	Possible Loss in Ridership
Full Consolidation	High	High	Low
Partial Consolidation	Low	Low	Low
Cooperation/Coordination	Low	Low	Low

BENEFITS

Benefits taken into consideration while investigating alternative transit agency structures include the improvement of internal processes, service coordination and an improved customer experience. Full consolidation registered the highest benefit for achieving all three. Partial consolidation has a lower ranking than full consolidation for the improved processes category due to both agencies remaining separate despite sharing administrative, procurement, and planning functions. Lastly, service coordination and customer experience can be improved under all three scenarios, however it is of note that the benefit of improved service coordination and customer experience is the same under both partial and full consolidation. Consolidation of critical functions related to planning and customer service under the partial consolidation alternative allow for the separate agencies to appear as one agency to the customer, maximizing service coordination and customer service benefits.

TABLE 5: BENEFIT CONSIDERATIONS FOR TRANSIT AGENCY STRUCTURE CHANGES

	Improve Processes	Service Coordination	Customer Experience
Full Consolidation	High	High	High
Partial Consolidation	Medium	High	High
Cooperation/Coordination	Low	Low	Medium

GOVERNANCE

The review of alternative transit agency structures also included investigation of potential governance models as well. Feedback from stakeholders indicates strong support for a consensus model of governance similar to models currently in place for COBO Hall or the Great Lakes Water Authority (GLWA).

POTENTIAL “COBO-LIKE” GOVERNANCE

- 1 member for each county in the region and City of Detroit
- Acts upon unanimous consensus

POTENTIAL “GLWA-LIKE” GOVERNANCE

- 2 members for each county in the region and 1 from the City of Detroit
- Acts upon affirmative vote from at least 1 member of each county and the City of Detroit

Both models can be applied to all three alternative structures (Full Consolidation, Partial Consolidation and Cooperation/Coordination) and could also include a non-voting Chair appointed by the State as in the current RTA structure.

3 Conclusion

Despite the failure of the November 2016 referendum on regional transit, subsequent dialogue has been productive. The Feasible Scenarios presented in response to the four study questions require additional discussion before a new path forward can be charted. Ultimately, it will be critical for that path forward to be supported by the region’s elected leadership, transit providers, transit advocates and business leaders.

4 Appendices

APPENDIX A: FEASIBLE MASTER PLAN SCENARIO SUMMARIES

APPENDIX B: FEASIBLE SCENARIO PROJECT COMPARISON TABLES

Appendix A

FEASIBLE SCENARIO 1 – MAJOR INFRASTRUCTURE: \$11.3 Billion Transit Plan in portions of Oakland, Macomb, Washtenaw and Wayne Counties

Description: An investment in capital and operations/maintenance activities to support expanded and more robust transit services within a defined regional transit boundary area in the City of Detroit, and portions of Macomb County, Oakland County, Washtenaw County and Wayne County.

Service Description:	Projects:	Frequency of Service	Avg. Span of Service
Regional Rail	Light Rail on Michigan Ave between Downtown Detroit and DTW	15 Minutes	20 hours
	Commuter Rail between Ann Arbor and Detroit (New Center)	8 Trips Daily	3 trips in each peak and 2 mid-day trips
Bus Rapid Transit	Woodward Ave. between Downtown Detroit and Pontiac	15 Minutes	20 hours
	Gratiot Ave. between Downtown Detroit and Mt. Clemens	15 Minutes	20 hours
	Van Dyke Ave. between Downtown Detroit and Sterling Heights	15 Minutes	20 hours
	Grand River Ave. between Downtown Detroit and Novi	15 Minutes	20 hours
Cross County Connectors	12 routes that improve east-west connections across the 5 jurisdictions to improve access to jobs, residential population and other activity centers includes \$1.5M/mile capital improvements	15 Minutes	20 hours
Commuter Express	12 routes along regions freeway/major state trunkline routes to improve access to jobs	60 minutes	7 hours/weekdays
	14 Park n Ride Lots	Daily	24 hours
Airport Express	Direct Airport service from DTW to Ann Arbor, Novi, Troy, Sterling Heights, Dearborn	60 minutes	13 hours/daily
Community Mobility & Innovation	Provide communities in all 5 jurisdictions ability to fund flexible transit options/services	TBD	TBD
Paratransit Funds	Additional funding to help provide additional paratransit services in all 5 jurisdictions	TBD	TBD
Regional User Enhancements	Funding to provide a regional fare system, one click/one call center and improved transit facilities	Daily	24 hours

FEASIBLE SCENARIO 1 – MAJOR INFRASTRUCTURE: \$11.3 Billion Transit Plan in portions of Oakland, Macomb, Washtenaw and Wayne Counties

FEASIBILITY ASSESSMENT

TECHNICAL FEASIBILITY

- MEETS REGIONAL NEEDS: YES NO
- IMPLEMENTATION RISK: H M L

FINANCIAL FEASIBILITY

- 85% COMPLIANT: YES NO
- REVENUE RISK: H M L

QUALITATIVE FEEDBACK: Large Investment in one corridor (Michigan Ave) that requires transferring all of Detroit’s and Wayne County Community Mobility and Innovation funds to meet 85%. LRT requires large federal contribution as well as a large local contribution above what the regional tax provides. Assumption of federal funding across multiple platforms (LRT, BRT) has low probability.

SCENARIO CHARACTERISTICS

ASSUMED FEDERAL & STATE DOLLARS: \$4,593,400 (YOE\$)

TOTAL LOCAL: \$6,773,600 (YOE\$)

TOTAL EXPENDITURES: \$11,367,000 (YOE\$)

*YOE = Year of Expenditure

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FEASIBLE SCENARIO 2 – MODERATE INFRASTRUCTURE: \$8.6 Billion Transit Plan in portions of Oakland, Macomb, Washtenaw and Wayne Counties

Description: An investment in capital and operations/maintenance activities to support expanded and more robust transit services within a defined regional transit boundary in the City of Detroit, and portions of Macomb County, Oakland County, Washtenaw County and Wayne County.

Service Description:	Projects:	Frequency of Service	Avg. Span of Service
Regional Rail	Commuter Rail between Ann Arbor and New Center	8 Trips Daily	3 in each peak 2 midday trips
Bus Rapid Transit	Michigan Ave. between Downtown Detroit and DTW	15 Minutes	20 hours
	Woodward Ave. between Downtown Detroit and Pontiac	15 Minutes	20 hours
	Gratiot Ave. between Downtown Detroit and Mt. Clemens	15 Minutes	20 hours
	Van Dyke Ave. between Downtown Detroit and Sterling Heights	15 Minutes	20 hours
	Grand River Ave. between Downtown Detroit and Novi	15 Minutes	20 hours
Cross County Connectors	12 routes that improve east-west connections across the 5 jurisdictions to improve access to jobs, residential population and other activity centers includes \$1.5M/mile of capital	15 Minutes	20 hours
Commuter Express	12 routes along regions freeway/major state trunkline routes to improve access to jobs	60 minutes	7 hours/weekdays
	14 Park n Ride Lots	Daily	24 hours
Airport Express	Direct Airport service from DTW to Ann Arbor, Novi, Troy, Sterling Heights, Dearborn	60 minutes	13 hours/daily
Community Mobility & Innovation	Provide communities in all 5 jurisdictions ability to fund flexible transit options/services	TBD	TBD
Paratransit Funds	Additional funding to help provide additional paratransit services in all 5 jurisdictions	TBD	TBD
Regional User Enhancements	Funding to provide a regional fare system, one click/one call center and improved transit facilities	Daily	24 hours

FEASIBLE SCENARIO 2 – MODERATE INFRASTRUCTURE: \$8.6 Billion Transit Plan in portions of Oakland, Macomb, Washtenaw and Wayne Counties

FEASIBILITY ASSESSMENT

TECHNICAL FEASIBILITY

- MEETS REGIONAL NEEDS: YES NO
- IMPLEMENTATION RISK: H M L

FINANCIAL FEASIBILITY

- 85% COMPLIANT: YES NO
- REVENUE RISK: H M L

QUALITATIVE FEEDBACK: Program remains the same as Scenario 1 except LRT is switched out with Bus Rapid Transit from Detroit to DTW. All jurisdictions receive Community Mobility and Innovation funds that is more proportionate to their population compared to Scenario 1. This Scenario still requires heavy/risky investment from Federal Discretionary grant funding.

SCENARIO CHARACTERISTICS

ASSUMED FEDERAL & STATE DOLLARS: \$2,958,600 (YOE\$)

TOTAL LOCAL: \$5,673,600 (YOE\$)

TOTAL EXPENDITURES: \$8,632,200 (YOE\$)

*YOE = Year of Expenditure

FEASIBLE SCENARIO 3 PHASED PLAN: \$5.9 Billion Transit Plan in portions of Oakland, Macomb, Washtenaw and Wayne Counties

Description: An investment in capital and operations/maintenance activities and planning/project development to support expanded and more robust transit services within a defined regional transit boundary in the City of Detroit, and portions of Macomb County, Oakland County, Washtenaw County and Wayne County.

Service Description:	Projects:	Frequency of Service	Avg. Span of Service
Regional Rail	Commuter Rail between Ann Arbor and New Center	8 Trips Daily	3 trips in each peak 2 trips mid-day
	Planning/Project Development/Design for CRT from Downtown Detroit to Ann Arbor + 20 more trips		
	Planning/Project Development/Design for LRT from Downtown Detroit to DTW		
	Planning/Project Development/Design for Streetcar Extensions in Detroit		
Bus Rapid Transit	Michigan Avenue BRT "Lite" between Downtown Detroit and DTW	15 Minutes	20 hours
	Woodward Ave. BRT "Lite" between Downtown Detroit and Pontiac	15 Minutes	20 hours
	Gratiot Ave. BRT "Lite" between Downtown Detroit and Mt. Clemens	15 Minutes	20 hours
	Grand River Ave. BRT "Lite" between Downtown Detroit and Novi	15 Minutes	20 hours
	Van Dyke Ave. BRT "Lite" between Downtown Detroit and Sterling Heights	15 Minutes	20 hours
	Planning/Project Development/Design for expanded BRT along Woodward, Gratiot, Van Dyke and Grand River Avenues.		
Cross County Connectors	10 routes that improve east-west connections across the 5 jurisdictions to improve access to jobs, residential population and other activity centers	15 Minutes	20 hours
Commuter Express	12 routes along regions freeway/major state trunkline routes to improve access to jobs	60 minutes	7 hours/weekdays
	14 Park n Ride Lots	Daily	24 hours
Airport Express	Direct Airport service from DTW to Ann Arbor, Novi, Troy, Sterling Heights, Dearborn	60 minutes	13 hours/daily
Community Mobility & Innovation	Provides communities in all 5 jurisdictions ability to fund flexible transit options/services	TBD	TBD
Paratransit Funds	Additional funding to help provide additional paratransit services in all 5 jurisdictions	TBD	TBD
Regional User Enhancements	Funding to provide a regional fare system, one click/one call center and improved transit facilities	Daily	24 hours

FEASIBLE SCENARIO 3 – PHASED PLAN: \$5.9 Billion Transit Plan in portions of Oakland, Macomb, Washtenaw and Wayne Counties

FEASIBILITY ASSESSMENT

TECHNICAL FEASIBILITY

- MEETS REGIONAL NEEDS: YES NO
- IMPLEMENTATION RISK: H M L

FINANCIAL FEASIBILITY

- 85% COMPLIANT: YES NO
- REVENUE RISK: H M L

QUALITATIVE FEEDBACK: Provides everything in Scenario 1 except that the delivery of the major capital projects is provided in a phased approach, focusing on “quick wins” with services that can be implemented quickly and create positive momentum. Included in this scenario for major capital projects is environmental clearance, design, cost estimating and other project development tom make projects more attractive for highly competitive Federal discretionary funding for construction phases.

SCENARIO CHARACTERISTICS

ASSUMED FEDERAL & STATE DOLLARS: \$1,405,000 (YOE\$)

TOTAL LOCAL: \$4,516,000 (YOE\$)

TOTAL EXPENDITURES: \$5,921,000 (YOE\$)

*YOE = Year of Expenditure

Appendix B

*PD = Planning, Design, and Project Development

Regional Transit Feasibility Study Scenario Comparison Chart							
Route	Terminal A	Terminal B	Peak Freq	RMTP	\$5.9B Plan	\$8.6B Plan	\$11.3B Plan
Regional Rail							
Commuter Rail	Detroit New Center	Ann Arbor	8 Trips Daily	X	X	X	X
Commuter Rail	Downtown Detroit	Ann Arbor	20 Trips Daily		PD*		
Ann Arbor Feeder Bus	Ann Arbor Amtrak	Ann Arbor	60 Minutes	X	X	X	X
Ypsilanti Feeder Bus	Ypsilanti Amtrak	Ann Arbor	60 Minutes	X	X	X	X
Light Rail (LRT)							
Light Rail	Downtown Detroit	DTW - Airport	15 Minutes		PD*		X
Streetcar							
System Expansion	Detroit Eastbound	Detroit Northbound	15 Minutes		PD*		
Future Q-Line Operations	Downtown Detroit	New Center	15 Minutes	X	X	X	X
Airport Express							
Ann Arbor	Downtown Ann Arbor	DTW	60 Minutes	X	X	X	X
Oakland Co (Novi via I-275)	12 Oaks Mall	DTW	60 Minutes	X	X	X	X
Oakland Co (Troy)	Troy Transit Center	DTW	60 Minutes	X	X	X	X
Macomb Co	Lakeside Mall	DTW	60 Minutes	X	X	X	X
Detroit	Downtown Detroit	DTW	30 Minutes	X			
Commuter Express							
Ann Arbor-Plymouth-Livonia	Downtown Ann Arbor	Livonia	60 Minutes	X	X	X	X
Canton Express	Downtown Ann Arbor	Canton	4 Trips	X	X	X	X
M-59	Pontiac	Mt Clemens	60 Minutes	X	X	X	X
I-75 Fisher Express	Great Lakes Crossing	Downtown Detroit	60 Minutes	X	X	X	X

*PD = Planning, Design, and Project Development

Regional Transit Feasibility Study Scenario Comparison Chart							
Route	Terminal A	Terminal B	Peak Freq	RMTP	\$5.9B Plan	\$8.6B Plan	\$11.3B Plan
I-96/M-14 Express	Ann Arbor /Plymouth	Downtown Detroit	60 Minutes		X	X	X
M-10 Lodge Express	OCC Orchard Ridge	Downtown Detroit	60 Minutes		X	X	X
I-75 Chrysler Express	Pontiac	Downtown Detroit	60 Minutes		X	X	X
US-23 Express	8-Mile	Ann Arbor	60 Minutes		X	X	X
I-696 Express	Twelve Oaks Mall	St. Clair Shores	60 Minutes		X	X	X
I-94 Express	New Baltimore	Downtown Detroit	60 Minutes		X	X	X
M-39 Southfield Express	Twelve Oaks Mall	Lincoln Park	60 Minutes		X	X	X
I-275 Express	Twelve Oaks Mall	Downtown Detroit	60 Minutes		X	X	X
14 Park-and Ride Lots	Regionwide	Regionwide	N/A	X	X	X	X
Regional - Frequent Transit Network							
Premium - BRT							
Woodward	Pontiac	Downtown Detroit	10 Minutes	X	PD*	X	X
Gratiot	Gratiot & M-59	Downtown Detroit	10 Minutes	X	PD*	X	X
Michigan	DTW (via Merriman)	Downtown Detroit	10 Minutes	X	PD*	X	X
Washtenaw	Downtown Ann Arbor	Downtown Ypsilanti	Capital Only			X	X
Grand River	12 Mile/Grand River/Beck	Downtown Detroit	15 Minutes		PD*	X	X
Van Dyke	Walmart - Shelby/23-mile	Downtown Detroit	15 Minutes		PD*	X	X
BRT Light (\$1.5 M per Mile)							
Woodward	Pontiac	Downtown Detroit	15 Minutes		X		
Gratiot	Gratiot & M-59	Downtown Detroit	15 Minutes		X		

*PD = Planning, Design, and Project Development

Regional Transit Feasibility Study Scenario Comparison Chart							
Route	Terminal A	Terminal B	Peak Freq	RMTP	\$5.9B Plan	\$8.6B Plan	\$11.3B Plan
Michigan	DTW (via Merriman)	Downtown Detroit	15 Minutes		X		
Grand River	12 Mile/Grand River/Beck	Downtown Detroit	15 Minutes		X		
Van Dyke	Walmart - Shelby/23-mile	Downtown Detroit	15 Minutes		X		
8 Mile	8 Mile & Grand River	8 Mile & Gratiot	15 Minutes			X	X
9 Mile	OCC Southfield	9 Mile & Mack	15 Minutes			X	X
12 Mile East	12 Mile & Harper	Lawrence Tech	15 Minutes			X	X
12 Mile West	OCC Royal Oak	Twelve Oaks Mall	15 Minutes			X	X
15 Mile	12 Oaks Mall (via Haggerty)	15 Mile & Harper	15 Minutes			X	X
Fort/Eureka	Downtown Detroit	DTW	15 Minutes			X	X
Greenfield	Michigan & Schaefer	Troy Transit Center	15 Minutes			X	X
Jefferson	Downtown Detroit	Gratiot & 15 Mile	15 Minutes			X	X
John R	State Fair TC	Downtown Detroit	15 Minutes			X	X
Vernor	Michigan and Shafer	Downtown Detroit	Capital Only			X	X
Warren/Crosstown	W Warren / Telegraph	E Warren / Mack	Capital Only			X	X
Cross County Connector							
8 Mile	8 Mile & Grand River	8 Mile & Gratiot	15 Minutes	X	X		
9 Mile	OCC Southfield	9 Mile & Mack	15 Minutes	X	X		
12 Mile East	12 Mile & Harper	Lawrence Tech	15 Minutes	X	X		
12 Mile West	OCC Royal Oak	Twelve Oaks Mall	15 Minutes	X	X		

*PD = Planning, Design, and Project Development

Regional Transit Feasibility Study Scenario Comparison Chart							
Route	Terminal A	Terminal B	Peak Freq	RMTP	\$5.9B Plan	\$8.6B Plan	\$11.3B Plan
15 Mile	12 Oaks Mall (via Haggerty)	15 Mile & Harper	15 Minutes	X	X		
Fort/Eureka	Downtown Detroit	DTW	15 Minutes	X	X		
Greenfield	Michigan & Schaefer	Troy Transit Center	15 Minutes	X	X		
Jefferson	Downtown Detroit	Gratiot & 15 Mile	15 Minutes	X	X		
John R	State Fair TC	Downtown Detroit	15 Minutes		X		
Plymouth	Plymouth & Grand River	Madonna U (via Levan)	30 Minutes	X			
Van Dyke	Detroit	Walmart - Shelby/23 Mile	15 Minutes	X			
Grand River	Downtown Detroit	Grand River/12 Mile/Napier	10 Minutes	X			
23 Mile	Pontiac - Phoenix Center	23 Mile and Gratiot			X	X	X
Local							
Ypsilanti Connector	Ypsilanti	Ford Livonia Plant	60 Minutes		X	X	X
Ypsilanti Connector	Ypsilanti	Michigan & Merriman	30 Minutes	X	X	X	X
Canal	Utica	Mt Clemens	60 Minutes	X			
Ford Extension (SMART 250)	Canton	Westland Center	60 Minutes	X			
Middlebelt South Ext. (SMART 280)	Middlebelt & 12 Mile	Middlebelt & Warren	60 Minutes	X			
Dequindre Extension (SMART 494)	Rochester	Dequindre & 16 Mile	60 Minutes	X			
Northville	Northville	Lawrence Tech	60 Minutes	X			
Groesbeck Highway	Gratiot & Outer Dr	Gratiot & M-59	60 Minutes	X			
Highland	Pontiac	Highland & Williams Lk	60 Minutes	X			

*PD = Planning, Design, and Project Development

Regional Transit Feasibility Study Scenario Comparison Chart							
Route	Terminal A	Terminal B	Peak Freq	RMTP	\$5.9B Plan	\$8.6B Plan	\$11.3B Plan
Regional Paratransit and Mobility							
Paratransit				X	X	X	X
Community Mobility and Innovation					X	X	X
Regional User Enhancements							
Regional Integrated Fare System				X	X	X	X
One Click-One Call Center				X	X	X	X
Facilities Improvements				X	X	X	X

