2040 Long Range Transportation Plan

Financial Summary

Financial Outlook

Establishing MPO Transportation Plan fiscal forecasts for a 20 plus year planning horizon in today's transportation environment is a challenging endeavor. Though, federal transportation funds have historically been authorized through six year legislative cycles, in recent years passing long term bills has proven a challenge. On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act" authorizing \$305 billion over fiscal years 2016 through 2020, the first long term bill since 2005.

Consistent with federal transportation regulations, MVRPC has developed planning level "year of expenditure" revenue projections and cost estimates through the year 2040. MVRPC projections include Federal, State, and local sources. These projections represent MVRPC's outlook on available future transportation program funding. MVRPC is projecting average growth in transportation program revenue at 2.3% and average project inflation at 2.3%. MVRPC's assumption is that over the Transportation Plan's 25 year planning horizon, existing revenue sources will keep pace with inflation.

The Ohio Department of Transportation (ODOT), a key transportation stakeholder and project implementer in the MVRPC Region, also develops fiscal projections for its statewide programs and projects. ODOT's recently updated Access Ohio 2040 long term financial assumptions are not significantly different than those included in the MVRPC Transportation Plan.

MVRPC also worked closely with the regional transit agencies and financial forecast were provided by each agency in year of expenditure dollars for the same periods using the, FY 2016, U.S. Office of Management and Budget, U.S. Budget Economic Assumptions for Consumer Price Index for FY 2019 (2.3 percent per year) to project inflation into the future.

For each mode, the costs of the 2016 through 2040 plan projects are balanced against projected revenues and, following the FAST Act requirements, are expressed in year of expenditure dollars. The fiscal constraints for each transportation mode are summarized in Table 1.

Table 1 - Fiscal Constraints of the 2040 LRTP Projects (in millions of Year of Expenditure dollars)

Project Type	Total Revenues	Total Cost	Total Revenues - Total Cost -	
Highway	2,783.37	1,971.15	+812.22 (Fiscally Constrained)	
Transit	2,954.88	2,954.88	0.00 (Fiscally Constrained)	
Rideshare/Air Quality	33.02	33.02	0.00 (Fiscally Constrained)	
Bikeway/Pedestrian	4.89	4.89	0.00 (Fiscally Constrained)	

Source: MVRPC

Highway Cost and Revenue Forecasts

The 2040 LRTP's 25 year forecasted highway revenues were determined by considering two main funding sources: projects in the TIP and projects financed entirely by local funds. The TIP includes funds from the Ohio Department of Transportation as well as other MPO-controlled funds. Local jurisdiction funds include Ohio Public Works funds and local ED/GE grants, in addition to local revenues. Detailed information about each program including eligibility, application process, funding levels, and contact information is available on the MVRPC website at:

http://www.mvrpc.org/transportation/transportation-financing



The revenue forecast was completed by identifying the actual expenditures in years 2013-2015 and using those as a base to calculate the year 2040 revenue forecast. Therefore, the 25-year time period was separated into two increments. The first increment is from SFY 2016 to SFY 2019 and includes the actual programmed expenditures for that time period in the current TIP. The second increment includes the remaining 21 years in the period and is further sub-divided into three additional increments for the purposes of applying inflationary factors (2020), (2021-2030), and (2031-2040). The revenues outside the TIP are based on average annual expenditures for years 2013-2015.

The TIP estimates (SFY 2016-2019) were determined by adding the amount of actual programmed expenditures in each funding source as shown in the TIP. Expenditures were then divided between

maintenance/reconstruction (38%) and capacity/operational/safety (62%) based on the actual mix of such projects in the TIP and according to the categories described in Table 2.

The forecasted revenues for the entire 25 year period 2040 LRTP were then determined by adding actual TIP and local expenditures to the projected figures of the remaining 21 year forecasts from both TIP and local sources. The results can be seen in Table 3.

Table 2 - Project Types in TIP/LRTP Analysis

Maintenance/Reconstruction	Capacity/Operational/Safety
Simple Resurfacing (no widening)	Resurfacing/Reconstruction (includes new lanes)
Reconstruction (no widening)	Intersection Widenings/Improvements
Guardrail and Pavement Markers	Signal Improvements (including interconnects)
Bridge Repair/ Replacement (no additional width or lanes)	Curve Relocations/Elimination
Minor widening (shoulders)	Bridge Replacement or Realignment (on new alignment, new lanes)
Street Maintenance	Bikeways (widen curb lanes or separate paths)
Sign Upgrades	Other Safety Upgrades (which modify road profile or geometry)

Source: MVRPC

The next step in the revenue forecasting process was to determine how much of the total revenue would be available for the maintenance versus capacity improvement projects. According to MVRPC's annual survey data, the Region is expending approximately 72% of its roadway expenditures on maintenance and 28% on capacity type improvements for projects not programmed in the TIP.

The final step involved using inflation rates to adjust revenues beyond the TIP years, to year of expenditure dollars for the three LRTP periods (2020), (2021-2030) and (2031-2040). After consulting several sources (National Highway Construction Cost Index, Congressional Budget Office) and finding similar long term inflationary trends, MVRPC used the latest, FY 2016, U.S. Office of Management and Budget, U.S. Budget Economic Assumptions for Consumer Price Index for FY 2019 (2.3 percent per year) to project inflation into the future. This resulted in inflation factors of 1.13, 1.26, and 1.58 for years 2020, 2025, and 2035, the mid-years of the Plan periods (2020), (2021-2030), and (2031-2040). These same factors were applied to cost estimates for any projects outside the TIP years, therefore assuming that in the long run costs and revenues will approach each other. A few projects outside the TIP years were not inflated because their cost estimates reflect ODOT's Ellis and are already inflated according to ODOT guidelines. These projects are identified in Chapter 5 as TIP: NF.

In summary, Table 3 presents the result of the total revenue forecast of \$7,362.34 million, followed by Table 4 and Table 5, showing the breakdown of the total revenue forecast by funding sources for the 2040 LRTP in maintenance / reconstruction (\$4,578.97 million) and capacity / operational /

safety improvements (\$2,783.37 million) projects. The revenue sources listed in Tables 3 to 5 do not include transit operating (FTA Section 5307, ODOT or local), transit capital (FTA Section 5307, 5337, 5339, ODOT, or local), or bikeway projects.

Table 3 - 2040 Forecasted Revenues for All Improvement Types by Funding Source (in millions of 2015 / Year of Expenditure dollars)

		millions of 20	10 / 100.	, zupene	Reven		
General Source			Four Year TIP (2016-2019)	Annual Average	Short Term Plan (2016-2020)	Long Term Plan (2021-2030) (2031-2040)	For Full 25 Year Plan
	Federal	Various Sources	269.97	108.54	378.51	1,085.40	2,549.31
ODOT/MPO Controlled Funds	State	State Match (Includes 100%)	95.08	47.31	142.39	473.10	1,088.59
Controlled Fullus		Includes Local, 1 In Combination ederal Funds)	50.75	17.87	68.62	178.70	426.02
Ohio Public Works	Ohio Public W	orks Commission	58.40	14.60	73.00	146.00	365.00
(LTIP and Issue 1)	Local Match		14.60	3.65	18.25	36.50	91.25
Local FD/CF	Grant		6.32	1.58	7.90	15.80	39.50
Local ED/GE	Local Contribu	ıtion	18.96	4.74	23.70	47.40	118.50
100%	Local, Private, C	Other	118.00	29.50	147.50	295.00	737.50
	Federal		269.97	108.54	378.51	1,085.40	2,549.31
Subtotal	State	State		61.91	215.39	619.10	1,453.59
	Local, Other		208.63	57.34	265.97	573.40	1,412.77
Total (2015 dollars)	Total (2015 dollars)		632.08	227.79	859.87	2,277.90	5,415.67
Total (Year of Expenditure dollars)			632.08	-	889.23	2,875.85/3,597.26	7,362.34

Table 4 - 2040 Forecasted Revenues for Maintenance/Reconstruction by Funding Source (in millions of 2015 / Year of Expenditure dollars)

		111110113 0) 2013		Revenues					
General Source			Four Year TIP (2016-2019)	Annual Average	Short Term Plan (2016-2020)	Long Term Plan (2021-2030) (2031-2040)	For Full 25 Year Plan		
	Federal	Various Sources	166.63	66.99	233.62	669.91	1,573.43		
ODOT/MPO Controlled Funds	State	State Match (Includes 100%)	58.68	29.20	87.88	292.00	671.88		
Controlled Fallus	Other Funds (Includes Local, OPWC, & Issue 1 In Combination with State & Federal Funds)		31.32	11.03	42.35	110.29	262.94		
Ohio Public Works	Ohio Public W	orks Commission	42.09	10.52	52.61	105.22	263.06		
(LTIP and Issue 1)	Local Match		10.52	2.63	13.15	26.31	63.13		
Local ED/GE	Grant		0.00	0.00	0.00	0.00	0.00		
LOCAL ED/GE	Local Contribu	ution	0.00	0.00	0.00	0.00	0.00		
100%	Local, Private, (Other	85.04	21.26	106.30	212.61	531.52		
	Federal		166.63	66.99	233.62	669.91	1,573.43		
Subtotal	State		100.77	39.72	140.49	397.22	934.93		
	Local, Other		126.89	34.92	161.81	349.21	860.22		
Total (2015 dollars)	Total (2015 dollars)		394.29	141.63	535.92	1,416.33	3,368.59		
Total (Year of Expenditure dollars)		394.29	-	554.18	1,788.12/2,236.67	4,578.97			

Table 5 - 2040 Forecasted Revenues for Operational/Safety/Capacity Improvements by Funding Source (in millions of 2015 / Year of Expenditure dollars)

		arce (III IIIIIIII)	Revenues					
General Source	Specific Source		Four Year TIP (2016-2019)	Annual Average	Short Term Plan (2016-2020)	Long Term Plan (2021-2030) (2031-2040)	For Full 25 Year Plan	
	Federal	Various Sources	103.34	41.55	144.89	415.49	975.88	
ODOT/MPO Controlled Funds	State	State Match (Includes 100%)	36.40	18.11	54.51	181.10	416.71	
Controlled Fullus	Other Funds (Includes Local, OPWC, & Issue 1 In Combination with State & Federal Funds)		19.43	6.84	26.27	68.41	163.08	
Ohio Public Works	Ohio Public W	orks Commission	16.31	4.08	20.39	40.78	101.94	
(LTIP and Issue 1)	Local Match		4.08	1.02	5.10	10.19	25.49	
Local ED/GE	Grant		6.32	1.58	7.90	15.80	39.50	
LOCAL ED/GE	Local Contribu	ition	18.96	4.74	23.70	47.40	118.50	
100%	Local, Private, C	Other	32.96	8.24	41.20	82.39	205.98	
	Federal		103.34	41.55	144.89	415.49	975.88	
Subtotal	State		52.71	22.19	74.90	221.88	518.66	
Local, Oth			81.74	22.42	104.16	224.19	552.55	
Total (2015 dollars)		237.79	86.16	323.95	861.57	2,047.08		
Total (Year of Expenditure dollars)		237.79	-	335.06	1,087.73/1,360.58	2,783.37		

Transit Service

Greater Dayton Regional Transit Authority (GDRTA)

The long range planning process used by GDRTA is based upon strategic plan priorities, as well as federal directives. This planning process has led to the current transit system and has also assisted in the development of the 2040 LRTP. GDRTA provides approximately 10 million passenger-trips per year through an extensive network of fixed routes, covering nearly 1,000 miles of directional roadways. Further, GDRTA's Transit Centers, located



throughout Montgomery County, connect the central city and the suburban areas with bus services at centralized locations.

The following assumptions were made in developing the GDRTA Long Range Transportation Plan project lists, costs, and revenues:

Service Configuration

- Service area remains approximately the same. However, new markets will continue to be explored (e.g., additional expansion into western Greene County. Possible extensions into northern Warren and southern Miami Counties);
- GDRTA will continue to operate as a multiple hub/transfer system;
- GDRTA will pursue dual-mode vehicle technology for service extensions off existing electric trolley wire;
- GDRTA is in compliance with ADA and will continue to work with human services transportation coordination efforts;
- Annual vehicle hours and vehicle miles will slightly increase.
- Annual ridership will slightly increase.
- Average fare will be consistent with inflation.

Fleet Changes — GDRTA anticipates a fleet size as follows:

- Electric Trolleys 45;
- Diesels 30' to 40' 111;
- Project Mobility Vehicles 75;
- Contingency 35' to 40' Diesels remain at 20 percent.

Revenue

- Annual Section 5307 formula capital allocation meets 80% of all future capital projects;
- Annual Section 5337 formula capital assistance meets 80% of all future capital projects;
- STP allocation to GDRTA: none assumed:

- CMAQ allocation to GDRTA: none assumed;
- State allocation remains constant and can only be used for capital projects;
- Bonding capital: no new issues assumed;
- Sales tax: assumed to remain steady;
- Reserve: the availability of local reserve is predicated on the reserve base being built up to support the level of spending with the Long Range Plan being adjusted accordingly as funds are available; and
- Other (interest, advertising, rentals, etc.): will increase in order to seek other revenue sources to fund operations.

Operating Costs

- Annual operating costs: held constant and adjusted for inflation; and
- Annual debt service goes to zero as the bonds are retired.

The capital program, costs and revenues, and sources of revenues for 2016-2040 are presented in detail in Tables 6 and 7. The expenditures were adjusted to year of expenditure dollars based on an average of 2.3 percent per year in all years for operating costs. Capital costs were adjusted based on the expected increase in spending in the project area an average of 2.3 percent per period.

Table 6 — GDRTA 2040 LRTP Costs and Revenues (in millions of Year of Expenditure dollars)

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Program	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan			
Total Costs	530.65	968.38	1,255.14	2,754.17			
- Capital Costs	179.44	134.00	207.73	521.17			
- Operating/Maintenance Costs	351.21	834.38	1,047.41	2,233.00			
- Debt Service	0	0	0	0			
Total Revenues	530.65	968.38	1,255.14	2,754.17			
- Specified Revenues	530.65	968.38	1,255.14	2,754.17			
- Local Reserve Funds	0	0	0	0			

Source: GDRTA

Table 7 — GDRTA 2040 LRTP Sources of Revenues (in millions of Year of Expenditure dollars)

Sources	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
Total Capital Funds	179.44	134.01	207.73	521.17
Federal Funds				
- FTA 5307	54.61	83.1	86.03	223.74
- FTA 5337	55.62	24.11	80.15	159.88
- FTA Other	31.98	10.80	10.80	53.58
GDRTA Capital Funds	37.23	16.00	30.75	83.97
Total Operating/Maintenance Funds	351.22	834.38	1,047.40	2,233.00
Local				
- Passenger Revenue	48.62	115.50	144.98	309.10
- Sales Tax	216.16	513.53	644.65	1,374.34
- Other (interest, ads, misc.)	7.91	18.78	23.57	50.26
Federal				
- Federal 5307 (Prev. Maint. only)	51.31	121.89	153.01	326.21
- Federal 5337 (Prev. Maint. only)	23.69	56.28	70.65	150.62
- Federal Other (Prev. Maint. only)	3.53	8.40	10.54	22.47
Grand Total - Revenue Sources	530.66	968.39	1,255.13	2,754.18

Source: GDRTA

Greene County Transit Board (Greene CATS)

The agency provides a combination of traditional demand responsive and flex route services. It is wheelchair accessible and serves a mix of fare-paying and contract riders. The transit service area is Greene County with trips to Montgomery County and surrounding counties as needed. In addition, the Greene County Transit Board works with local social services agencies to help coordinate social services transportation and to provide a wider range of transportation options to riders.

The following assumptions were made in developing the Greene CATS project lists, expenses and revenues for the 2040 LRTP, a summary of the Greene CATS 2040 expenses and revenues are presented in Tables 8 and 9.

- Adding peak, evening, and weekend, flex route service beginning in 2016
- No change in fares 2016: traditional demand responsive service \$3.00 each one way in Greene County; \$6 each way to and from Montgomery County; \$0.75 for children 13 and under; flex services \$1.50



each way, \$0.75 for elderly, disabled, and children (13 and under);

- No change in FTA or ODOT formula funding or local revenue sources; and
- Continue to work with social services agencies to foster coordination and brokerage programs.

Table 8 — Greene CATS 2040 LRTP Expenses (in millions of 2015 / Year of Expenditure dollars)

Program	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
Capital Costs	2.50	5.00	5.00	12.50
- Bus Purchase	1.75	3.50	3.50	8.75
- Shop/Office purchase	0.03	0.05	0.05	0.13
- Planning Projects	0.45	0.90	0.90	2.25
- Other Capital Projects	0.27	0.55	0.55	1.37
Operating/Maint. Costs	16.47	32.95	32.95	82.37
Total (2015 dollars)	18.97	37.95	37.95	94.87
Total (YOE dollars)	19.46	47.91	59.93	127.30

Source: Greene CATS

Table 9 — Greene CATS 2040 LRTP Revenues (in millions of 2015 / Year of Expenditure dollars)

Sources	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
- Passenger Fares	0.60	1.20	1.20	3.00
- FTA formula	6.50	13.00	13.00	32.50
- ODOT formula	0.45	0.90	0.90	2.25
- Contracts	10.67	21.35	21.35	53.37
- Local match	0.75	1.50	1.50	3.75
Total (2015 dollars)	18.97	37.95	37.95	94.87
Total (YOE dollars)	19.46	47.91	59.93	127.30

Source: Greene CATS

Miami County Transit System

Miami County Transit System provides demand responsive transit services within the geographic area of Miami County. The County anticipates continued increases in benefits for local human service organizations. Many of these organizations have the opportunity to utilize Miami County Transit as a method of expanding existing programs.

The Miami County Commissioners plan to utilize a combination of federal, state, and local funds to financially support the program and its capital requirements as shown in Tables 10 and 11.

Table 10 — Miami County Transit 2040 LRTP Costs (in millions of Year of Expenditure dollars)

Program	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
Total Capital Costs	1.09	2.58	3.24	6.91
- Small Buses - 75 (3 per year)	1.02	2.43	3.04	6.49
- Shop/Office Equipment	0.01	0.03	0.04	0.08
- Security Equipment	0.03	0.06	0.08	0.17
- Planning Projects	0.03	0.06	0.08	0.17
Total Operating/Maint. Costs	5.48	12.84	15.81	34.13
Total	6.57	15.42	19.05	41.04

Source: Miami County Transit

Table 11 — Miami County Transit 2040 LRTP Revenues (in millions of Year of Expenditure dollars)

Sources	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
FTA Formula	2.18	5.22	6.59	13.99
FTA Discretionary (1 bus/year)	0.26	0.52	0.52	1.30
ODOT Formula	0.31	0.73	0.91	1.95
ODOT Fare Assistance	0.22	0.51	0.64	1.37
Fares, Contract Rev., Misc.	1.57	3.66	4.52	9.75
Local Support	2.02	4.81	5.85	12.67
Total	6.57	15.46	19.03	41.04

Source: Miami County Transit

Public Transit Human Services Transportation

In the Dayton urbanized area, MVRPC, in cooperation with the regional transit agencies, took the lead in developing the Coordinated Public Transit Human Services Transportation Plan which was endorsed by the MVRPC Board of Directors in April 2008. In 2012, the HSTC plan was updated documenting progress of the initial findings and identifying new focus areas. Most of these findings remain true in 2016, largely due to underlying demographic trends, such as the aging of the Region's population and the related increase in people with disabilities.



The Miami Valley Regional Planning is the Designated Recipient for Section 5310 funds in Greene, Montgomery, Miami, and northern Warren Counties.

Financial forecasts for human services transportation are based on annual averages as shown in the current SFY 2016-2019 TIP and are assumed to be in 2015 dollars. Based on the annual averages, three plan periods were forecasted: 2020, 2021-2030, and 2031-2040. Funding for the periods beyond the TIP were inflated using the FY 2016, U.S. Office of Management and Budget, U.S. Budget Economic Assumptions for Consumer Price Index for FY 2019 (2.3 percent per year) to project inflation into the future. This resulted in inflation factors of 1.13, 1.26, and 1.58 for years 2020, 2025, and 2035, the mid-years of the Plan periods. The results can be seen in Table 12. As a result the scope of programs and projects will be constrained by available future revenue.

Table 12 — 2040 Forecasted Cost and Revenues for Human Services Transportation (in millions of 2015 / Year of Expenditure dollars)

	Cost/Revenues					
Program	Four Year TIP (2016-2019)	Annual Average	Short Term Plan-5 years (2016-2020)	Long Term Plan-10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
Total (2015 dollars)	3.86	0.97	4.83	9.65	9.65	24.13
Total (YOE dollars)	3.86	-	4.95	12.18	15.24	32.37

Alternative Modes and Development Choices

As the Region grows, it is essential to plan a comprehensive transportation system that serves the needs of travelers using all modes of transportation, allowing for reasonable mobility choices for all residents. The 2040 LRTP addresses future transportation needs by including programs and projects that provide alternatives to traditional forms of transportation and thereby aid in curtailing the demand for single occupancy vehicle travel, reducing congestion, harmful emissions, and the reliance on petroleum-based products. Alternative modes and development choice strategies can also spur economic development in existing communities, create strong places with a sense of community, and help preserve open space and environmentally sensitive areas.

Financial forecasts for the programs and projects described in this chapter are based on annual averages as shown in the current SFY 2016-2019 TIP and are assumed to be in 2015 dollars. Based on the annual averages three plan periods were forecasted: 2020, 2021-2030, and 2031-2040. The results can be seen in Table 13 below. As a result the scope of programs and projects will be constrained by available future revenue. It is also important to note that MVRPC does not forecast funding for the regional bikeway programs; these programs are funded as revenues become available and since the passing of the Regional Complete Streets Policy in 2011, many roadway projects now include bike and pedestrian elements.

Table 13 — 2040 Forecasted Cost and Revenues for Alternative Modes (in millions of 2015 / Year of Expenditure dollars)

	Cost/Revenues					
Program	Four Year TIP (2016-2019)	Annual Average	Short Term Plan-5 years (2016-2020)	Long Term Plan- 10 years (2021-2030)	Long Term Plan-10 years (2031-2040)	For Full 25 Year Plan
Rideshare	1.73	0.43	2.16	4.32	4.32	10.81
Vanpool Subsidy	0.56	0.14	0.70	1.40	1.40	3.50
Air Quality	1.65	0.41	2.06	4.12	4.12	10.30
Bikeway/Pedestrian	4.89	-	4.89	-		4.89
Total (2015 dollars)	8.83	-	9.81	9.84	9.84	29.50
Total (YOE dollars)	8.83	-	9.94	12.43	15.54	37.91