

SECTION 8 - FINANCIAL FORECASTS AND FISCAL PLAN

TABLE OF CONTENTS

Financial Forecast Analysis Page 8-1
Extreme Weather/Climate Change Vulnerability Page 8-8
Fiscally Constrained List of Transportation Projects..... Page 8-8

LIST OF TABLES

Table 1: BHJ LRTP 25-YR IMP Funding Forecast..... Page 8-3
Table 2: BHJ LRTP 25-YR IMP Funding Forecast with Federal/State Funding Splits..... Page 8-4
Table 3: Ohio Fund Estimates 2016-2040 Funding Level Projections 2016-2040 Page 8-6
Table 4: ODOT Funding Level Projections with BHJ Sub-Allocation (\$1,000)..... Page 8-7

SECTION 8 - FINANCIAL FORECASTS AND FISCAL PLAN

The financial analysis for estimating resources for implementation and construction of transportation projects involves both estimating project costs and developing reasonable forecasts of federal, state, and local resources. Typically, there are funding shortfalls between available financial resources and anticipated projects demands for preservation and expansion of a region's transportation network. In many circumstances, a project's proposed scope must be limited to the amount of financial resources available, or revenue sources expanded to fit the project needs. Financial planning including creative financial strategies to move the project forward through the program development process is as important as engineering and constructing a project. The financial plan will serve as a tool to estimate the region's project demand in terms of dollars and to identify the fiscal resources needed to carry out the project demand.

Major elements discussed in the analysis will be:

- A forecast of federal, state, and local transportation funds expected to be available for project demand considered over the lifetime (FY 2016 through 2040) of the LRTP in nominal dollars that reflect aggregate cost ranges/cost bands (FY 2016-2019; 2020-2030; and 2031-2040) that reasonably supports projected project costs as well as system maintenance and preservation based on "year of expenditure dollars";
- An estimate of project demand based on the preservation and of the existing transportation system and the construction of capacity and safety improvement projects;
- A comparison of funding level estimates versus funding needs;
- A listing of transportation projects and strategies divided into three program stages (FY 2016 through 2019; FY 2020 through 2030; and FY 2031 through 2040) that Project Sponsors (State and Local) could be reasonably fund over the lifetime of the LRTP based on projected transportation revenues.

FINANCIAL FORECAST ANALYSIS

Estimated Financial Projections by Revenue Source

Through a variety of sources, West Virginia and Ohio transportation departments each provided BJJ with reasonable financial forecasts by year of expenditures for highway improvements. The financial forecasts do not include expenditures or obligations for transit projects.

West Virginia Revenue Analysis

West Virginia DOT provided Long Range Revenue Estimates for Use in MPO Long Range Transportation Plans via a letter dated February 2016. On page 2 of their *“Long Range Revenue Estimates for use in MPO Long Range Transportation Plans – March 2015”* document, WVDOH outlines the method used for developing the long-range revenue estimates as follows:

“METHOD:

In order to update the MPO long-range revenue estimates, BHI MPO in consultation with West Virginia DOT took the following steps:

- 1. Determine if any modifications to the existing method are necessary and if so, implement the necessary changes.*
- 2. Obtain indexed cost data to estimate long-term inflation rates and for converting financial information from nominal values to constant 2014-dollar values.*
- 3. Gather historical statewide revenue and expenditure data for Fiscal years 2002 through 2014.*
- 4. Gather project program data for Calendar Years 2002 through 2014 on a statewide basis for all phases and types of work, as well as for select construction codes (1, 2, 3, 4, 5, 30, 33, and 66) on a statewide and individual MPO basis.*
- 5. Gather bridge project data programmed under construction codes 31 and 32 during FY 2002 through 2014 and identify which projects qualify as “improvements”.*
- 6. Update the VMT, Highway Mileage, Population and Historical Funding percentages to reflect current information and calculate new percentile averages for each MPO and the non-MPO regions of the State.*
- 7. Gather the most recent “official” revenue estimates for the State Road Fund.*
- 8. Calculate per year and aggregate 25-year revenue forecasts for each MPO.”*

WVDOH prepared BHI LRTP 25-Year Improvement Funding Forecasts for fiscal years 2016 through 2040. The estimates provided were statewide and factored specifically for the BHI transportation planning area in both 2016 dollars as well as nominal dollars factored to the year of expense. This plan reflects expenditures in nominal dollars factored to the year of expense as shown in Table 1.

Major/New Construction spending, in nominal dollars, over the next 25 years (2016 through 2040) estimated by the West Virginia DOT in the BHI Region amount to \$86,082 million. Table 2 presents the West Virginia 25-year estimates for Major/New Construction in 2016 dollars factored to nominal “year of expenditure” dollars. For Transportation Enhancement Activities, BHI set aside 10% of the 2020 to 2040 total allocation.

Since highway improvement needs exceed the funding forecast, traditional highway and bridge funding sources cannot finance major new transportation projects such as the New Ohio River

Bridge south of Wellsburg, SR2 (Commerce St) and SR27 (Washington Pk) Intersection Improvement in Wellsburg and the SR2 Relocation through New Cumberland.

Two “special” sources of funding WVDOH has pursued for some projects is the Transportation Investment Generating Economic Recovery or “TIGER Discretionary Grants” and FASTLANE Grants or credit assistance for regionally significant freight projects. WVDOH remains committed to finding innovative methods to fund transportation needs in the region.

One example is WVDOH moving forward with the Wellsburg (New Ohio River) Bridge using the Public Private Partnership (P3) process. In general, this is a contractual arrangement formed between a public agency and a private sector entity that allows for greater private sector participation in the delivery and financing of transportation projects. In this case, the private sector entity will be the successful designer-constructor team submitting the best overall bid to design and construct the project. WVDOH has established a “short list” of contractors and has set a July 2016 date for the selected contractors to submit bids. The DOH hopes to begin construction in early calendar year 2017.

Table 1
BHJ LRTP 25-YR IMPROVEMENT FUNDING FORECAST (IN NOMINAL DOLLARS)
VALUES AS OF 2/25/15 AND PRESENTED IN THOUSANDS

FY	TOTAL STATE REVENUE	NON IMPROVEMENT EXPENDITURES	STATEWIDE IMPROVEMENT FUNDS	ELIMINATED IMPROVEMENT FUNDS	ELIMINATED EARMARKED FUNDS	STATEWIDE IMPROVEMENT FUNDS FOR MPO LRTP'S	BHJ LRTP IMPROVEMENT FUNDING @ (2.07%)
2016	\$1,168,154	\$551,605	\$616,549	\$505,570	\$0	\$110,979	\$2,299
2017	\$1,180,680	\$575,736	\$604,944	\$496,054	\$0	\$108,890	\$2,256
2018	\$1,158,844	\$600,923	\$557,921	\$457,496	\$0	\$100,426	\$2,081
2019	\$1,179,844	\$627,211	\$552,833	\$453,159	\$0	\$99,474	\$2,061
2020	\$1,179,844	\$654,650	\$525,194	\$430,659	\$0	\$94,535	\$1,958
2021	\$1,336,548	\$683,289	\$653,259	\$535,672	\$0	\$117,587	\$2,436
2022	\$1,395,018	\$713,180	\$681,837	\$559,107	\$0	\$122,731	\$2,543
2023	\$1,456,045	\$744,380	\$711,665	\$583,566	\$0	\$128,100	\$2,654
2024	\$1,519,743	\$776,944	\$742,799	\$609,095	\$0	\$133,704	\$2,770
2025	\$1,586,227	\$810,933	\$775,294	\$635,741	\$0	\$139,553	\$2,891
2026	\$1,655,620	\$846,409	\$809,211	\$663,553	\$0	\$145,658	\$3,018
2027	\$1,728,048	\$883,437	\$844,611	\$692,581	\$0	\$152,030	\$3,150
2028	\$1,803,645	\$922,084	\$881,560	\$722,879	\$0	\$158,681	\$3,287
2029	\$1,882,549	\$962,423	\$920,126	\$754,503	\$0	\$165,623	\$3,431
2030	\$1,964,904	\$1,004,526	\$960,378	\$787,510	\$0	\$172,868	\$3,581
2031	\$2,050,863	\$1,048,471	\$1,002,392	\$821,961	\$0	\$180,431	\$3,738
2032	\$2,140,582	\$1,094,338	\$1,046,244	\$857,920	\$0	\$188,324	\$3,902
2033	\$2,234,226	\$1,142,212	\$1,092,014	\$895,451	\$0	\$196,562	\$4,072
2034	\$2,331,966	\$1,192,180	\$1,139,786	\$934,624	\$0	\$205,161	\$4,250
2035	\$2,433,982	\$1,244,335	\$1,189,648	\$975,511	\$0	\$214,137	\$4,436
2036	\$2,540,462	\$1,298,770	\$1,241,691	\$1,018,187	\$0	\$223,504	\$4,630
2037	\$2,651,599	\$1,355,588	\$1,296,012	\$1,062,729	\$0	\$233,282	\$4,833
2038	\$2,767,598	\$1,414,890	\$1,352,708	\$1,109,221	\$0	\$243,487	\$5,044
2039	\$2,888,672	\$1,476,787	\$1,411,885	\$1,157,746	\$0	\$254,139	\$5,265
2040	\$3,015,043	\$1,541,392	\$1,473,651	\$1,208,393	\$0	\$265,257	\$5,495
25-YR TOTALS	\$47,250,705	\$24,166,693	\$23,084,011	\$18,928,889	\$0	\$4,155,122	\$86,082

Table 2
BHJ LRTP 25-YR IMP FUNDING FORECAST
WITH FEDERAL/STATE FUNDING SPLITS
(\$1,000)

Year	Funding Estimate (WVDOH)			TA Estimate	Remaining Balance	
	Funding	80%	20%		80%	20%
2016	\$2,299	\$1,839	\$460		\$1,839	\$460
2017	\$2,256	\$1,805	\$451		\$1,805	\$451
2018	\$2,081	\$1,665	\$416		\$1,665	\$416
2019	\$2,061	\$1,649	\$412		\$1,649	\$412
2016-2019	\$8,697	\$6,958	\$1,739		\$6,958	\$1,739
2020	\$1,958	\$1,566	\$392	\$196	\$1,410	\$352
2021	\$2,436	\$1,949	\$487	\$244	\$1,754	\$438
2022	\$2,543	\$2,034	\$509	\$254	\$1,831	\$458
2023	\$2,654	\$2,123	\$531	\$265	\$1,911	\$478
2024	\$2,770	\$2,216	\$554	\$277	\$1,994	\$499
2025	\$2,891	\$2,313	\$578	\$289	\$2,082	\$520
2026	\$3,018	\$2,414	\$604	\$302	\$2,173	\$543
2027	\$3,150	\$2,520	\$630	\$315	\$2,268	\$567
2028	\$3,287	\$2,630	\$657	\$329	\$2,366	\$592
2029	\$3,431	\$2,745	\$686	\$343	\$2,470	\$618
2030	\$3,581	\$2,865	\$716	\$358	\$2,578	\$645
2020-2030	\$31,719	\$25,375	\$6,344	\$3,172	\$22,838	\$5,709
2031	\$3,738	\$2,990	\$748	\$374	\$2,691	\$673
2032	\$3,902	\$3,122	\$780	\$390	\$2,810	\$702
2033	\$4,072	\$3,258	\$814	\$407	\$2,932	\$733
2034	\$4,250	\$3,400	\$850	\$425	\$3,060	\$765
2035	\$4,436	\$3,549	\$887	\$444	\$3,194	\$798
2036	\$4,630	\$3,704	\$926	\$463	\$3,334	\$833
2037	\$4,833	\$3,866	\$967	\$483	\$3,480	\$870
2038	\$5,044	\$4,035	\$1,009	\$504	\$3,632	\$908
2039	\$5,265	\$4,212	\$1,053	\$527	\$3,790	\$948
2040	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2031-2040	\$45,665	\$36,532	\$9,133	\$4,567	\$32,878	\$8,220

Other Financial Revenue Analysis for West Virginia Projects

Ohio Revenue Analysis

The Ohio Department of Transportation, in an effort to be more involved in the MPO financial planning process, has developed a standard methodology to project funding levels for Metropolitan Long Range Transportation Plans. The Ohio DOT has developed a methodology as an approach for an MPO such as BHJ, may follow to establish Long Range revenue assumptions.

Table 3 is a summary of the Jefferson County, Ohio fund estimates for years 2016 through 2040 from ODOT Office of Statewide Planning and Research. For years 2016 through 2019, these are fund estimates based on projects listed in the most recent FY 2016-2019 Transportation Improvement Program.

Established Revenue Sources

A number of federal, state, and local revenue sources make up the Ohio Revenue analysis. The first source of federal revenue considered for transportation improvement planning and construction in Jefferson County is the MPO Sub-Allocation Program. The Ohio Department of Transportation has established a Sub-Allocation Program that distributes by formula, federal transportation improvement funding to small metropolitan areas with population less than 200,000. The allocation to Jefferson County consists of three funding categories:

1. Surface Transportation Program (STP)
2. Congestion Mitigation Air Quality (CMAQ)
3. Transportation Alternatives (TA)

The next list of revenue sources considered in this analysis report includes the following ODOT federal and state Capital Programs as found in Ellis, ODOT's project management system:

- District Preservation
- Major/New Construction,
- County Engineers Association of Ohio (CEAO) Bridge, STP Pavement, and Highway Safety Improvement (HSIP), and
- Other Federal Programs including Appalachian Program Development (APD), Safety Upgrade, and Small Municipal Bridge

Table 4 shows the estimated overall obligation authority by year and revenue source for transportation improvements in Jefferson County, Ohio. The total available (Federal and State) include all categories discussed in the previous paragraph as well as BHJ's sub-allocations.

BHJ obtained ODOT's MPO Funding Summary Report dated March 28, 2016, to estimate the annual MPO Sub-Allocations, sub-allocations for STP, CMAQ, and TA. The allocations for fiscal years 2016 through 2018 vary due to project obligations and carryover (see Table 4). However, projected allocations appear flat for 2019 through 2040 as reflected in Table 3 below.

- Surface Transportation Program (STP) - \$618,332
- Congestion Management Air Quality (CMAQ) - \$491,132
- Transportation Alternatives (TA) - \$61,833

BHJ's methodology was to subtract the MPO sub-allocations above by year, from the overall (Total Available) Federal dollars leaving the yearly "ODOT Balance" amounts for the region.

Table 3
Ohio Fund Estimates 2016-2040
Funding Level Projections 2016-2040

Year	Federal \$	Growth Factor	State \$	Growth Factor
2016	\$ 9,789,964	5.08%	\$ 3,867,885	1%
2017	\$ 9,991,637	2.06%	\$ 3,906,564	1%
2018	\$ 10,207,456	2.16%	\$ 3,906,564	0%
2019	\$ 10,437,124	2.25%	\$ 3,906,564	0%
2020	\$ 10,686,571	2.39%	\$ 3,906,564	0%
2021	\$ 10,686,571	0%	\$ 3,906,564	0%
2022	\$ 10,686,571	0%	\$ 3,906,564	0%
2023	\$ 10,686,571	0%	\$ 3,906,564	0%
2024	\$ 10,686,571	0%	\$ 3,906,564	0%
2025	\$ 10,686,571	0%	\$ 3,906,564	0%
2026	\$ 10,686,571	0%	\$ 3,906,564	0%
2027	\$ 10,686,571	0%	\$ 3,906,564	0%
2028	\$ 10,686,571	0%	\$ 3,906,564	0%
2029	\$ 10,686,571	0%	\$ 3,906,564	0%
2030	\$ 10,686,571	0%	\$ 3,906,564	0%
2031	\$ 10,686,571	0%	\$ 3,906,564	0%
2032	\$ 10,686,571	0%	\$ 3,906,564	0%
2033	\$ 10,686,571	0%	\$ 3,906,564	0%
2034	\$ 10,686,571	0%	\$ 3,906,564	0%
2035	\$ 10,686,571	0%	\$ 3,906,564	0%
2036	\$ 10,686,571	0%	\$ 3,906,564	0%
2037	\$ 10,686,571	0%	\$ 3,906,564	0%
2038	\$ 10,686,571	0%	\$ 3,906,564	0%
2039	\$ 10,686,571	0%	\$ 3,906,564	0%
2040	\$ 10,686,571	0%	\$ 3,906,564	0%

Funding Level Projections 2016-2040		
Federal	State	Total
\$ 264,844,178	\$ 97,625,416	\$ 362,469,594

Source: ODOT Office of Statewide Planning & Research

Table 4
ODOT FUNDING LEVEL PROJECTIONS WITH BHJ SUB-ALLOCATION
(\$1,000)

Year	Total Available		BHJ MPO Sub- Allocation			ODOT Balance		
	Federal	State	STP	CMAQ	TA	Federal	State	Total
2016	\$9,790	\$3,868	\$1,367	\$140	\$2	\$8,281	\$3,868	\$12,149
2017	\$9,992	\$3,907	\$25	\$753	\$63	\$9,151	\$3,907	\$13,058
2018	\$10,207	\$3,907	\$410	\$674	\$62	\$9,061	\$3,907	\$12,968
2019	\$10,437	\$3,907	\$618	\$491	\$62	\$9,266	\$3,907	\$13,173
2016-2019	\$40,426	\$15,589	\$2,420	\$2,058	\$189	\$35,759	\$15,589	\$51,348
2020	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2021	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2022	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2023	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2024	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2025	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2026	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2027	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2028	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2029	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2030	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2020-2030	\$117,557	\$42,977	\$6,798	\$5,401	\$682	\$104,676	\$42,977	\$147,653
2031	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2032	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2033	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2034	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2035	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2036	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2037	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2038	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2039	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2040	\$10,687	\$3,907	\$618	\$491	\$62	\$9,516	\$3,907	\$13,423
2031-2040	\$106,870	\$39,070	\$6,180	\$4,910	\$620	\$95,160	\$39,070	\$134,230

EXTREME WEATHER/CLIMATE CHANGE VULNERABILITY

Climate change and assessing the vulnerability of the transportation network present many challenges. Transportation planners and engineers must plan, design, construct, operate, and maintain a surface transportation system according to climate variations and probable intensities of extreme weather events. The BHJ Region is very susceptible to events such as flooding, freeze thaw deterioration, and intense thunderstorms. Such events lead to road slippage, rock falls, landslides, weakened infrastructure, and power outages. These events lead to road closures and detours that affect the area's ever-fragile economy as well as sensitive ecological sites as identified in Section 4. These negative impacts cause motorist and freight delays through detours and accidents, loss of life as well as the time and resources spent by highway crews and emergency responders to mobilize, close a road, set up detours, and clean landslides.

BHJ's objective is to increase the security of the transportation system for motorized and nonmotorized users by planning and creating a highway system that permits efficient and safe deployment of emergency services during times of accident, flooding, other natural disaster, or national emergency. At all times, highway officials should strive, at a minimum, maintain two highway and one pedestrian Ohio River Bridge crossings as contingency options for National Guard, safety, security, and emergency services between Jefferson County, Ohio and Brooke and Hancock counties, West Virginia. Long-term repairs of these vulnerable areas not only stabilize the region's transportation network but also the region's fragile ecological and biological system as illustrated in Section 4.

Projects for Consideration

The Ohio and West Virginia typically used Federal Emergency Repair funds for project reconstruction due to damage from extreme weather events. The following is an illustrative listing of unfunded projects in areas vulnerable to rock falls and landslides:

- SR7 from Mingo Junction North Corp to Steubenville South Corp
- SR2 from Wellsburg to Follansbee
- SR2 from Beech Bottom to Wellsburg
- SR2 from Weirton to New Cumberland
- SR2 from Newell to Chester

FISCALLY CONSTRAINED LIST OF TRANSPORTATION PROJECTS

The following tables represent the Fiscally Constraint List of Transportation Projects Planned for Jefferson County, OH and Brooke/Hancock Counties, WV:

- Table 5 - State Fiscal Years 2020 through 2030
- Table 6 - State Fiscal Years 2031 through 2040

