



STIP
Federal Fiscal Years 2009 - 2014

Statewide Transportation Improvement Program

Joe Manchin III
GOVERNOR

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VII. IMPROVEMENT PROGRAM DEVELOPMENT

GENERAL:

In order to develop a program of improvements that satisfies the goals and objectives of WVDOH, various technical studies may be conducted to determine the highway-related needs of a facility or area and to estimate the costs associated with addressing those needs. For example, studies are frequently conducted within the State's metropolitan areas to determine the transportation needs and estimated costs to address them. Data from these studies are used by metropolitan planning organizations for both long-range planning purposes and scheduling projects in the near future. Historically, the Program Planning and Administration Division has been responsible for conducting studies of this nature on a Statewide level and providing this information to senior management for consideration during the program allocation process.

Like Congress, WVDOH has developed a menu of improvement programs to address specific problems or concerns. When all of these initiatives are combined, they constitute WVDOH's Total Highway Program. Since federal legislation funds specific programs and mandates how and where those funds can be utilized, WVDOH's various highway programs somewhat mimic those of the federal government. WVDOH funds thirteen major umbrella improvement programs, which are divided between federal-aid (FA)-eligible projects and non-federal-aid (NF)-eligible projects, from the State Road Fund:

- FA Interstate Improvement;
- FA Interstate Renovation;
- FA ADHS Expansion and Improvement;
- FA ADHS Renovation;
- FA 3R (Resurfacing and Slides);
- FA Other Bridge;
- FA Other;
- NF Improvement;
- NF Contract Paving;
- NF Bridge (Category 6);
- NF Other Bridge;
- NF Renovation; and
- NF Miscellaneous

Examination of the above programs indicates they are a blend of facility-specific and activity Specific initiatives. The diversity of the programs indicates that in order for WVDOH to meet its statutory obligations within the confines of federal and State funding limitations, it must pursue a balanced program of improvements. Rather than just utilizing the larger NF programs identified above, the WVDOH has developed a



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number of sub-allocation programs to ensure that some specific types of needs are addressed. A brief description of some of those sub-programs is as follows:

A13-xxx (Resurfacing): This is an allocation for the resurfacing of asphalt and surface treated roadways. Funds are allocated twice during the fiscal year for the implementation of a spring and summer paving program. A percentage of the total funding available for this sub-program is distributed to each District based on the ratio of District paved highway miles to the statewide total amount of paved miles. Each District is responsible for establishing their project priorities.

B10-099 (Renovation-Variou): The B10 allocation is established to renovate and maintain existing roadway facilities. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Commissioner of Highways based on input from various organizations within the WVDOH.

B11-xxx (Renovation-Guardrail): This is an allocation for the replacement of damaged or inadequate guardrail. Funds are allocated twice during the fiscal year for the implementation of a spring and summer program. Each District receives an equal share of the total sub-program funding available. Each District is responsible for establishing their project priorities.

B12-xxx (Renovation-Structures Less Than 20’): The B12 allocation is established to conduct bridge repair work that is not considered rehabilitation or routine maintenance on structures less than 20 feet in length (i.e. do not meet the federal definition of a bridge). Funding for this subprogram is divided equally among the ten districts. Each District is responsible for establishing their project priorities.

B13-090 (Renovation-Parks & Forests): This allocation is for the repair of State Park & Forest routes maintained by the WVDOH. Funds are allocated on a yearly basis for projects of this nature. The West Virginia Division of Natural Resources is responsible for establishing the project priorities, while the District in which the project is located is responsible for its development.

B30-xxx (Renovation–Slides by State Forces): This allocation is established to provide funding for slide repairs on a district-wide basis. Unlike most other allocations, funding for this category is limited to work that is only conducted by Agency employees. Each District receives an equal share of the total sub-program funding available. Each District is responsible for establishing their project priorities.

B31-xxx (Renovation-Slides by Contract): This allocation is established to provide funding for slide repairs on a district-wide basis. Unlike most other allocations, funding for this category is limited to work that is only conducted using contractors.



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Each District receives an equal share of the total sub-program funding available. Each District is responsible for establishing their project priorities.

C23-xxx (Bridge- Category 3B Minor Renovation): The Category 3B allocation is established to conduct bridge repair work that is not considered rehabilitation or routine maintenance on structures less than 100 feet in length. Funding for this sub-program is distributed once annually to each District on a percentage basis, which is equivalent to their share of the State's structures that are less than 100 feet in length. Each District is responsible for establishing their project priorities from the pool of eligible structures.

C23-061 (Bridge-category 3A-Major Renovation): The Category 3A allocation is established to conduct bridge repair work that is not considered rehabilitation or routine maintenance on structures greater than 100 feet in length. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Maintenance Division based on the condition level of all bridges meeting the length requirement that are in need of repairs.

C26-xxx (Bridge-Category 6- Replacement): The Category 6 allocation is established to conduct extensive work on bridges less than 100 feet in length. The types of work covered in this allocation includes: complete replacement, replacement of superstructure on existing substructure, major rehabilitation or extensive structural repair and deck replacements. Funding for this sub-program is distributed once annually to each District on a percentage basis, which is equivalent to their share of structures less than 100 feet in length that have been recommended for permanent improvement by bridge inspection staff.

C26-xxx (Bridge-Category 6M-Major-Replacement): The Category 6 Major allocation is established to conduct extensive work on bridges greater than 100 feet in length. The types of work covered in this allocation includes: complete replacement, replacement of superstructure on existing substructure, major rehabilitation or extensive structural repair and deck replacements. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Maintenance Division based on the condition level of all bridges meeting the length requirement that are in need of repairs.

C27-061 (Bridge- Category 7- Central Forces): The Category 7 allocation is established to cover bridge repair and renovation work that will be conducted by the Agency's Central Bridge Forces. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Maintenance Division based on the condition level of all bridges needing repairs.



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C28-xxx (Bridge-Category 8B-Clean & Paint): The Category 8B allocation is established to conduct spot painting and cleaning of all bridges regardless of length. The work is typically conducted under a statewide spot painting contract. Funding for this sub-program is distributed once annually to each District on a percentage basis. The percentage each District receives is equivalent to its share of total bridge area measured in square feet compared to the total bridge area maintained statewide. Each District is responsible for establishing their project priorities.

C28-061 (Bridge -Category 8A-Major Clean & Paint): The Category 8A allocation is established to conduct total repainting of all bridges regardless of length located on the State's Trunkline, Feeder and State Local Service Systems. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Maintenance Division based on the condition level of all bridges that are in need of repainting.

C28-090 (Bridge-Category 8C-Expressway Clean & Paint): The Category 8C allocation is established to conduct total repainting of all bridges regardless of length located on the State's Expressway System. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Commissioner of Highways based on input from the Districts.

C30-090 (Bridge-Category 10-LMC Overlays): The Category 10 allocation is established to conduct Latex Modified Concrete overlays on structures. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Commissioner of Highways based on input from the Districts.

N10-099 (Improvement-VariouS): The N10 allocation is established to construct new roadway facilities, conduct general roadway improvements or conduct studies that are prerequisite to those improvements. Funding for this sub-program is not distributed by formula and is irrespective of geographic location. Statewide priorities are established by the Commissioner of Highways based on input from various organizations within the WVDOH.

Federal requirements dictate that the STIP need only incorporate federal-aid projects. It is the intent of the WVDOH to ultimately present not only projects that are partially funded with federal funds, but also projects that are 100% State funded in the STIP document; however, the current document will only show projects proposed for federal funding. For informational purposes, the document will incorporate information about expenditures relating to NF programs as a whole, but provide no project specific details. It is anticipated that the project specific information on State funded projects will be incorporated in October 2008.



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SPECIAL INITIATIVES:

An item not identified in the individual programs above is what WVDOH frequently refers to as “special initiative” projects. These projects typically are corridor-length facilities requiring significant improvement and expansion and that have equally significant capital costs. These projects are further distinguished from other Statewide initiatives because federal-aid highway funds have been dedicated for these uses. The 14 most prominent of these initiatives are: ADHS Corridors D and H, Coalfields Expressway, Gateway Connector, King Coal Highway, Merritt’s Creek Connector, Mon/Fayette Expressway, New River Parkway, Shawnee Parkway, Tolsia Highway, WV 2, WV 9, WV 10, and US 35. The total length of these facilities is 856 miles. The total estimated cost of these initiatives is \$9.3 billion, of which less than a third has been expended, leaving large sums needed to complete these projects. Fortunately, WVDOH recently completed work on one of these facilities (the Merritt’s Creek Connector) and is in the process of finishing work on another (ADHS Corridor D). Despite this fact, WVDOH cannot hope to complete all of these special initiatives within the next six years with the funds projected to be available.

Rather than splitting its limited resources among all of these initiatives and achieving only a moderate amount of progress, the Administration believes that the citizens of West Virginia will be served best by targeting its resources on a limited number of special initiatives that will have immediate economic impacts for the State. In addition to the funds available for ADHS Corridors D and H, which can be used only for those facilities, WVDOH intends to concentrate on three other special initiatives: the Mon/Fayette Expressway, WV 9, and US 35, allowing significant strides toward the completion of these projects to be made. Placing emphasis on these facilities does not indicate that WVDOH will not work on other special initiatives during the six-year period. WVDOH is committed to matching all federal aid that is dedicated to any initiative. WVDOH is simply stressing the fact that, in the absence of any dedicated funding, it will work on the projects identified.

The need to limit the number of Special Initiatives the State works on at a given time has been necessitated in part by recent financial planning requirements contained in SAFETEA-LU. As part of those requirements, the State must provide initial financial plans and annual updates that outline how useable sections of its large highway projects costing in excess of \$100 million will be fully funded over time. The impetus of these financial requirements was to prevent states from embarking on roadway initiatives that could not realistically be completed with the funding at their disposal. As a result of those federal requirements, unless the State can demonstrate how it will fund an entire useable section, the use of federal funding will not be approved. Even if the State receives a Congressional earmark that will pay for a portion of a useable section that falls into this category, the earmark could not be utilized unless the State can demonstrate it can fund the entire useable section in a timely manner. Since the State’s highway financial resources are limited, only a handful of large highway



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initiatives can be advanced at one time. These financial constraints have forced departments of transportation (DOT's) across the country to prioritize the work they intend to do. This has placed many DOTs in the unenviable position of not being able to use some Congressional earmarks in a timely fashion.

NEEDS ASSESSMENT:

When highway needs are evaluated, it becomes evident that most are open-ended; an infinite number of needs could be identified depending on what selection criteria are applied. For example, a majority of the miles of State-maintained highways in West Virginia were constructed decades ago. Since that time, traffic volumes have increased, and design criteria and performance measures have become more advanced. As a result, many of these highways are in need of improvement; however, the costs associated with improving them to meet modern design criteria would be many billions of dollars. Since the amount of funds necessary to accomplish such tasks is not available, it is reasonable to develop several programs that address various highway needs within the context of any federal or State limitations. The result is that limited funds are allocated in such a way as to create a balanced program of improvements. Funds are allocated with the knowledge that some programs will have their needs satisfied more than others will. If detailed needs studies have been completed, one of the results of the allocation process is that the amount of needs in each program category that will be met by the proposed investment is determined. It is at this point that one of the most strategic investment policy decisions is made, since deciding on an investment amount for a program category is tantamount to deciding upon the percent of needs that will be met over the six-year period. If the rate of needs satisfaction does not seem acceptable, an attempt should be made to alter the allocation to achieve the desired results. Of course, since the total funds available are far below total needs, all rates of need satisfaction may appear intolerably low. At best, it is hoped that the relative rate of program funding is in line with WVDOH's priorities and investment strategies. Unfortunately, since the chasm that exists between available funds and identified needs has been and continues to be so great, little emphasis has recently been placed on conducting needs studies or monitoring performance with regard to needs satisfaction (e.g., WVDOH has been funding slide repairs for years; is the number of slides increasing or decreasing?) to determine if adjustments in allocations are warranted. In the absence of detailed needs studies, agency management relies on a combination of personal experience, engineering judgment, and historical expenditures in developing program allocations.

PROGRAM ALLOCATIONS:

Based on the revenue and expenditure forecasts, the total improvement program that WVDOH can support during the six-year period is roughly \$3.8 billion (\$2.2 billion in federal and \$1.6 billion in State funds). Of the \$1.6 billion in State funds expended for improvements, \$472 million will be needed to match federal aid and the remaining



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\$1,113 million will be available for non-federal-aid projects. Based on the above information, when State matching funds are taken into account, federal-aid improvements would equal \$2.7 billion and non-federal-aid improvements would equal \$1.1 billion. The primary drivers of the six-year STIP are WVDOH's commitments to:

1. Match all available federal aid;
2. Maintain a balanced program of improvements on all State highways whether or not they are eligible for federal aid; and,
3. Operate a fiscally responsible highway program by maintaining a fund equity balance of approximately \$80 to \$100 million.

Despite stagnant revenues, the agency has been able to develop a reasonable mix of system preservation, renovation, and improvement projects for the six-year period. After reviewing the funding limitations associated with the various federal programs and considering the needs associated with each of the various State subprograms, executive management has proposed allocations for each subprogram at the following levels:

➤ FA Interstate Improvement	\$115 million
➤ FA Interstate Renovation	\$ 212 million
➤ FA ADHS Expansion and Improvement	\$ 626 million
➤ FA ADHS Renovation	\$ 20 million
➤ FA 3R (Resurfacing and Slides)	\$ 30 million
➤ FA Other Bridge	\$ 553 million
➤ FA Other	\$ 814 million
➤ FA GARVEE	\$ 168 million
➤ FA SUBTOTAL*	<u>\$2,538 million</u>
➤ NF Improvement	\$ 75 million
➤ NF Contract Paving	\$ 619 million
➤ NF Bridge (Category 6)	\$ 152 million
➤ NF Other Bridge	\$ 51 million
➤ NF Renovation	\$ 173 million
➤ NF Miscellaneous	\$ 4 million
➤ NF SUBTOTAL**	<u>\$1,074 million</u>
PROGRAM TOTAL	<u>\$3,612 million</u>

* *Note:* The FA Program total shown reflects \$168 million for the payback of \$200 million in Special Obligation Notes for ongoing and future projects on US 35. As of August 1, 2008, only \$109 million in notes



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have been sold. It is anticipated that the remaining \$91 million will be sold by the end of FY 2009.

**** Note:** *The NF Program does not include the funding for the IAR Program projects. Those projects are considered Set-Asides, since the funds are transferred from the State Road Fund.*

As can be seen, total funds allocated for programming new projects in the STIP is lower than what WVDOH is projected to have available at the projected revenue levels (\$3.8 billion). There are several reasons for this discrepancy. First, executive staff of WVDOH has decided that the amount of improvement projects programmed should be held below expected available federal obligation levels to allow for cost increases. While WVDOH will actually utilize all available obligations in a given year (i.e., \$387 million), initial programming at lower values will provide a reserve to cover any increases in project costs. Second, the program of FA projects described above, with the exception of GARVEE and advance construction paybacks is for new starts and does not reflect expenditures needed to complete ongoing projects. Fourth, the NF program has not yet been fully developed for incorporation into the STIP document. The values provided are for informational purposes only. The final NF program will likely be higher, but it is prudent to program at lower than anticipated revenue values for similar reasons to those listed for the FA Program.

The decision by executive management at the WVDOH to hold the STIP at or below the forecasted OA levels in conjunction with converting to year of expenditure dollars has required significant adjustments to the State's FA improvement program. In order to continue with the ongoing expansion and improvement of ADHS Corridor H, US 35, WV 9, and the Mon/Fayette Expressway, reductions in other areas, such as FA 3R and FA ADHS Renovation were necessary. However, since the WVDOH cannot ignore the preservation needs associated with its primary (i.e. federal-aid eligible) facilities, the agency has significantly increased the amount of resurfacing work done with 100% State funds. The agency's commitment to maintaining its existing assets is further demonstrated by the high level of anticipated funding for the FA Interstate Renovation and FA Other Bridge Programs at \$212 and \$553 million, respectively. As State funded projects are fully incorporated into the STIP, it will be easier to examine if the program is truly balanced in nature.

RECOMMENDED/PLANNED IMPROVEMENTS:

Once the program allocation levels are set, individual projects under each FA program are selected. The list of proposed projects by FFY and program are contained in Appendix A. Maps showing the location of the proposed projects by District and FFY are contained in Appendix B. Since the development schedules of the State's larger projects take many years to complete, a significant number of projects selected will be for completing remaining phases of work currently in the development pipeline. In addition, since much of the smaller-type work conducted by WVDOH (resurfacing,



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small bridges, etc.) cannot be predicted very far in advance, summary projects were used as placeholders for funding allocations in the STIP's latter years. Since lock funding allocations must be used in many instances in place of specific projects, the exact amount of roadway that will be resurfaced, bridges replaced or slides repaired cannot be known. What is apparent from a review of the projects identified in Appendix A is the high level of commitment made to ADHS Corridor H, WV 9, US 35, and the Mon/Fayette Expressway. WVDOH has committed approximately \$978 million for work on these four projects, of which \$168 million is for repayment of GARVEE work on US 35 and \$810 million is for initiating new work over the six-year period. Total expenditures on these four facilities represent roughly 39% of all FA improvement funds. The commitment of these funds will allow WVDOH to achieve the following:

ADHS Corridor H - WVDOH plans to commit \$626 million towards completion of the State's last remaining corridor designated by the Appalachian Regional Commission. The funding will allow construction to continue on additional portions of the multilane facility in Hardy, Grant, and Tucker Counties within the next six years. The improvements scheduled for Corridor H will be directly dependent on the final allocation formula for ADHS funding and the amount of overall federal funding made available for ADHS expansion in the next federal authorization. As stated previously, the WVDOH's program of improvements will be reworked when the exact impacts are known.

US 35 - US 35 is a heavily traveled commercial route serving as a shortcut from the Charleston area to the Dayton and Columbus, Ohio industrial centers. WVDOH plans to commit \$168 million in the form of GARVEE paybacks for the ongoing expansion of US 35 for additional work in Putnam and Mason Counties. The exact payment amounts will not be known until the final sale of Notes.

WV 9 – Over \$122 million is dedicated for the continued renovation and expansion of WV 9 in the eastern panhandle. Targeting federal-aid funds on this initiative will allow WVDOH to initiate construction on portions of the route located between Charles Town and the Virginia State line including the bridge spanning the Shenandoah River. The facility is desperately needed to address the traffic needs of the area's expanding population.

Mon/Fayette Expressway - WVDOH plans to commit nearly \$62 million to complete West Virginia's portion of the Mon/Fayette Expressway. Once completed, the facility in West Virginia will extend from I-68 at the Cheat Lake interchange to the Pennsylvania State line. Ultimately, the facility will provide access to industrial areas surrounding Pittsburgh.

The recommended projects contained in the STIP represent a good faith effort on the part of senior management within WVDOH to develop a mix of projects that can



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realistically be accomplished in the six-year period with the funding anticipated to be available. Management also realizes that the limited amount of projected State revenue in conjunction with WVDOH's commitment to match all available federal-aid will limit the amount of improvements than can be initiated on State highways that are not eligible for federal-aid. Some level of funding imbalance is quite normal and reflects the higher priority the State's FA highways have in the transportation network. WVDOH, however, has a mandate to care for all roads under its jurisdiction - not just the ones eligible for federal-aid. Under the current revenue forecast, a modest program of NF improvements can still be initiated; however, if revenue continues to trend lower, the funding levels of NF programs will need to be reassessed. As part of any reassessment, the WVDOH must seriously consider forgoing projects that are FA-eligible and diverting the necessary matching funds to NF projects.

Since highway improvement needs exceed available funds, not all deserving highway projects can be contained in the STIP. Even though WVDOH intends to pursue a robust program of improvements on FA highways, some projects must be postponed for the time being. Some projects will be added during future updates as block allocations are replaced with specific projects. As stated previously, WVDOH believes that approximately \$40 million in federal funds will be available annually for HP earmarks, but the Agency has opted to withhold the programming of specific projects until funding is obtained. This precaution will prevent WVDOH from having to drop projects from the program if sufficient funds are not forthcoming during the next highway reauthorization. In addition, the WVDOH believes that, while it is reasonable to assume that some discretionary or "special" funding may be available each year, it is better to add projects to the program as specific funding details become available, as opposed to making assumptions regarding the future funding of specific projects. To that end, as discretionary funds and specific earmarks are received by WVDOH, it remains committed to continuing work on other special initiatives such as King Coal Highway, Coalfields Expressway, WV 10, Gateway Connector, WV 2, Tolsia Highway, US 60, US 220, US 522, US 340, Martinsburg Bypass, Wellsburg Bridge, etc., but only to the extent that federal-aid funds are made available for each.