COMMONWEALTH of VIRGINIA
Commonwealth Transportation Board

Aubrey L. Layne, Jr.
Chairman

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

Agenda item # 1

RESOLUTION
OF THE
COMMONWEALTH TRANSPORTATION BOARD

June 14, 2016

MOTION

Made By: Mr. Connors, Seconded By: Mr. Brown
Action: Motion Carried, Unanimously

Title: Approval of State of Good Repair Prioritization Process Methodology and FY 2017 State of Good Repair Percentage Fund Distribution

WHEREAS, § 33.2-369 of the *Code of Virginia* prescribes that the Commonwealth Transportation Board (the Board) shall use funds allocated in § 33.2-358 and § 58.1-1741 for state of good repair purposes for reconstruction and replacement of structurally deficient state and locally-owned bridges and reconstruction and rehabilitation of deteriorated pavement on the Interstate System and primary state highway system including municipality-maintained primary extensions; and

WHEREAS, § 33.2-369 (B) also requires that the state of good repair funds be allocated by the Board to projects in all nine construction districts based on a priority ranking system that takes into consideration (i) the number, condition, and costs of structurally deficient bridges and (ii) the mileage, condition, and costs to replace deteriorated pavements; and

WHEREAS, Enactment Clause 2 of Chapter 684 of the 2015 Virginia Acts of Assembly requires the Board to develop the priority ranking system pursuant to § 33.2-369 of the *Code* by July 1, 2016; and

WHEREAS, VDOT has developed a proposed priority ranking system methodology for structurally deficient bridges and deteriorated pavements that meets the requirements expressed in § 33.2-369 (B) which was presented to the Board on April 19, 2016

and is set out in Attachment A (proposed State of Good Repair Prioritization Process Methodology); and

WHEREAS, The State of Good Repair Prioritization Process Methodology takes into consideration those factors mandated by § 33.2-369 (B) of the *Code* for purposes of identifying the state of good repair needs and prioritizes those needs in order for the Board to allocate the state of good repair funds to projects to address those identified needs; and

WHEREAS, VDOT has further developed State of Good Repair preliminary district allocation percentages as set out in Attachment B (FY 2017 State of Good Repair Percentage Fund Distribution Chart) for use for the FY 2017 State of Good Repair allocations; and

WHEREAS, VDOT recommends that the Board approve the State of Good Repair Prioritization Process Methodology set out in Attachment A for purposes of identifying the state of good repair needs and prioritizing those needs in order for the Board to allocate the state of good repair funds to projects; and

WHEREAS, VDOT recommends that the Board approve the FY 2017 State of Good Repair Percentage Fund Distribution set out in Attachment B for the State of Good Repair Program in FY 2017.

NOW, THEREFORE, BE IT RESOLVED, by the Commonwealth Transportation Board, that the proposed State of Good Repair Prioritization Process Methodology contained in Attachment A is hereby approved and adopted for purposes of identifying the state of good repair needs and prioritizing those needs in order for the Board to allocate the state of good repair funds to projects.

BE IT FURTHER RESOLVED, by the Commonwealth Transportation Board, that the FY 2017 State of Good Repair Percentage Fund Distribution provided in Attachment B are approved for the purpose of providing FY 2017 State of Good Repair Program allocations.

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ATTACHMENT A

The Commonwealth Transportation Board

State of Good Repair Prioritization
Process Methodology
For The
CTB Allocation of Funds and Project Selection

JUNE 2016

Purpose

This document describes a process and methodology which is designed to fulfill Commonwealth Transportation Board's statutory obligation to develop a "priority ranking system" for the allocation of state of good repair funds. The Commonwealth Transportation Board's approval of the methodology, by July 1, 2016, will meet the requirements of the second enactment clause of HB 1887, Chapter 684 of the 2015 Acts of Assembly.

Statutory Background

During the 2015 Session, the Virginia General Assembly passed HB 1887, enacted as Chapter 684 of the Acts of Assembly, a comprehensive transportation funding bill. The portions of the bill that address funding for state of good repair are reprinted below.

Section 33.2-358(D) applies to funds allocated for fiscal years beginning July 1, 2020 and provides:

> after funds are set aside for administrative and general expenses and pursuant to other provisions in this title that provide for the disposition of funds prior to allocation for highway purposes, and after allocation is made pursuant to subsection B, the Board shall allocate [forty-five percent of] all remaining funds, including funds apportioned pursuant to 23 U.S.C. § 104 … to state of good repair purposes as set forth in § 33.2-369.

State of Good Repair is defined in § 33.2-369(A) as "improvement of deficient pavement conditions and improvement of structurally deficient bridges."

The General Assembly directs the Commonwealth Transportation Board to allocate state of good repair funds in accordance with the provisions of § 33.2-369. Paragraphs B and C of that section provide:

> B. The Board shall allocate these funds to projects in all nine highway construction districts for state of good repair purposes based on a priority ranking system that takes into consideration (i) the number, condition, and costs of structurally deficient bridges and (ii) the mileage, condition, and costs to replace deteriorated pavements. The Board shall ensure an equitable needs-based distribution of funding among the highway construction districts, with no district receiving more than 17.5 percent or less than 5.5 percent of the total funding allocated in any given year. The Board may, by a duly adopted resolution, waive the cap provided in this section for a fiscal year only when it determines that due to extraordinary circumstances or needs the cap inhibits the ability of the Department to address a key pavement or bridge need that has been identified.
>
> C. In any year in which the Department has not met the established targets for secondary pavements developed in accordance with § 33.2-232 and before making the allocations in subsection B, the Board may allocate up to 20 percent of these funds to all nine highway construction districts to improve the condition of secondary pavements. The Board shall ensure an equitable needs-based distribution of funds among highway construction districts based on the mileage, condition, and cost to improve secondary pavements.

Section 33.2-232 requires the Commissioner of Highways to include in the Department's deficient bridge and pavement annual report:

- Beginning with the November 2015 report through the November 2019 report, the allocations to the reconstruction and rehabilitation of functionally obsolete or structurally deficient bridges and to the reconstruction of pavements determined to have a combined condition index of less than 60, and

- beginning in 2016, a listing of prioritized pavement and bridge needs based on the priority ranking system developed by the Board pursuant to § 33.2-369 and a description of the priority ranking system, and

- beginning in 2020, the methodology used to determine allocations of construction funds for state of good repair purposes as defined in § 33.2-369 and any waiver of the cap provided for in subsection B of § 33.2-369.

The second enactment clause of HB1887 (Chapter 684, 2015 Acts of Assembly) requires the prioritization process to be approved by the Board by July 1, 2016.

Process and Methodology

Step 1 – Needs Assessment Process

Bridge Needs

1. The Commonwealth's bridges are inspected once every two years, or more frequently, depending on the bridge's condition using a national rating system.
2. The data collected from the inspection provides for an assessment of the condition of the bridge and is compiled within the bridge management system.
3. The bridge management system then determines the type of work recommended, and provides a list of needs or work to be performed.
4. The bridge needs are then separated to identify the structurally deficient bridges within the National Bridge Inventory. The bridge needs, in the National Bridge Inventory, beginning with those rated structurally deficient will be used in determining the State of Good Repair Needs.

Pavement Needs

1. The conditions of the Commonwealth's Interstate, primary and primary extension pavements are assessed annually using automated data collection technology.
2. Pavements are rated based on visible distresses, and the data is incorporated into the pavement management system.
3. The pavement condition data is analyzed within the pavement management system to assess maintenance needs using those elements of pavement distresses, traffic level, and structural condition based on asset management principles.
4. The pavement management system then provides the mileage, recommended treatment, and estimated costs to perform the necessary work on pavements, or pavement needs.

5. The deteriorated pavement needs will be used in determining the State of Good Repair Needs.

Step 2 – State of Good Repair Needs and Funding Distribution Methodology

1. The State of Good Repair Needs are the total cost of the structurally deficient bridge needs on the National Bridge Inventory, and the total cost of deteriorated pavement needs on Interstate and primary highways, including municipally-maintained primary extensions.
2. The State of Good Repair Needs are compiled to determine the recommended State of Good Repair Funding Distribution allocated to each construction district.
    a. As provided for in the Code of Virginia (§ 33.2-369) each construction district receives no less than 5.5% and no more than 17.5% in a given year.
    b. Individual district percentages are determined by dividing district needs by the statewide needs.
    c. If any district's needs are less than 5.5% then the amount provided to other districts is reduced on a pro-rata basis to ensure such district receives 5.5% of available funding.
    d. Then if any district's needs percentage would require more than 17.5% of the funding, the district's percentage of funding will be reduced to 17.5% and the delta between the district's need percentage and 17.5% would be distributed to the remaining districts based on their needs percentage.
3. The State of Good Repair Needs are used to break down the percentage at the construction district level into four separate funding distributions – VDOT Bridge, Locality-owned Bridges, VDOT Pavement, and Municipally-maintained Primary Extensions (Pavement).
    a. Attachment B to the resolution shows the percentage fund distribution used for distributing the FY 2017 and FY 2018 State of Good Repair funds. VDOT will update the percentage fund distribution in FY 2019 based on the needs assessment shown in the FY 2018 Annual Report.

Step 3 – Priority Ranking System Methodology

The priority ranking system required by § 33.2-369 will have two components – one for bridges eligible for State of Good Repair funding and one for pavements eligible for State of Good Repair funding.

Bridges

1. The priorityranking system will examine all bridges in the Commonwealth eligible for State of Good Repair funding and rank the bridges in priority order based on the following criteria and weighting:
    a. Condition - General– measures overall condition of the bridge using detailed condition data compiled from the safety inspection report. Weighting - 25%.
    b. Cost-Effectiveness – based on the ratio of actual project cost to the cost for full replacement. Weighting - 20%.
    c. Number and Cost - Highway Traffic Impacts – based on traffic volume, truck traffic, detour, route and proximity to critical facilities. Weighting -

30%.

d. Condition - Design Redundancy and Safety – fracture-critical, fatigue prone details and scour and seismic vulnerability. Weighting - 15%.
e. Condition - Structure Capacity – takes in consideration whether the bridge will be posted or has issues with clearances. Weighting - 10%.

2. A priority list of bridges for repairs will be developed for each district based on the priority ranking system.
3. For VDOT bridges, the prioritized list will be sent to each district for review. Each district shall use the prioritized bridge repair list to create recommended projects, except when the District Engineer/Administrator provides a written justification for an exception and such justification is approved by the Chief Engineer.
4. For Locality-owned bridges, the priority list of bridges for repair will be provided to the District Engineer/District Administrator and localities in each construction district along with any recommended repairs and the cost of those repairs.
    a. Each locality with a prioritized bridge on the list that does not concur with the VDOT recommended repairs and costs shall provide a summary of their proposal for repair of those bridges in a format specified by VDOT.
    b. Localities shall use the prioritized list of bridges for repair to create recommended projects, except (1) when a locality does not want to pursue corrective action to a priority bridge recommended for funding, the locality will need to provide a written justification and the next locality-owned bridge within the construction district on the priority list will be recommended to receive the State of Good Repair funding, or (2) when a locality wishes to rehabilitate or replace the bridge and the locality agrees to fund all costs in excess of recommended funding.
5. Recommended bridge projects for State of Good Repair funding in each district shall be recommended from the district's priority list of repairs in order for allocation of funding by the Commonwealth Transportation Board for inclusion in the Six-Year Improvement Program.

Pavements

1. The pavement condition data is analyzed through the pavement management system to estimate pavement needs. The pavement management system takes the pavement condition data into account and runs an optimization process. The optimization process applies the principles of asset management and considers factors such as available funds, performance targets, benefit cost ratio of treatments and prepares a section by section priority list. The pavement condition data for all Interstate and primary pavement sections including municipally-maintained primary extensions is run through a set a decision trees to select appropriate maintenance treatment by taking into account:

a. Pavement distresses
b. Structural and subgrade strength
c. Traffic volume
d. Maintenance history

2. The output of the process is the number of lane miles of work needed in different pavement categories and estimated costs to accomplish the repairs measured in lane miles to meet the pavement performance targets.
3. For VDOT maintained pavements, the pavement management system will establish the number of lane miles for each construction district that are recommended for State of Good Repair funds. Each construction district will compile pavement projects based on the number of lane miles of deficient pavement that qualify for State of Good Repair funding and prioritize them for recommended funding using the following criteria:
    a. Road System– explains the roadway system (i.e., Interstate or primary), Interstate systems having the higher priority over Primary systems.
    b. Use or traffic count– the amount of traffic the lane miles carry also considering the number of heavy trucks and buses.
    c. Condition– The severity of distress of the pavement using the standard pavement rating system.
    d. Potential for immediate or near term further degradation – the impact caused if the lanes miles are not repaired or treated immediately.
4. The construction district shall follow the priority determined above except for instances when the District Engineer/District Administrator provides a written justification and such justification is approved by the Chief Engineer when practicality, conflicting construction, or coordinating with other highway work necessitates deviating from the established prioritization.
    a. Traffic Counts
    b. Condition
    c. Potential future degradation
5. For the municipally-maintained primary extensions, VDOT will provide the pavement condition ratings to each construction district and the localities within the district following the same rating protocols as VDOT maintained roads. The localities will then follow the same application process for the primary extensions as adopted by the Board on June 18, 2014 (link), as amended from time to time.
6. Recommended pavement projects for State of Good Repair funding on VDOT pavements and municipally-maintained primary extensions in each district shall be submitted for approval and allocation of funding by the Commonwealth Transportation for inclusion in the Six-Year Improvement Program.

Publication of Bridge and Pavement Prioritized Lists

This State of Good Repair Policy and Guidelines Prioritization Process Methodology For The Distribution CTB Allocation of Funds and Project Selection; and the results of the CTB allocation of funding for projects shall be published in the Commissioner's Annual Report as required by § 33.2-232 of the Code of Virginia.

Attachment B
FY 2017 State of Good Repair Percentage Fund Distribution Chart

District	FY 2017 (Based on previously proposed distribution)	VDOT			Localities		
		Pavement	Bridge	Total	Pavement	Bridge	Total
Bristol	**11.7%**	21%	64%	**85%**	2%	13%	**15%**
Culpeper	**6.0%**	25%	45%	**70%**	3%	27%	**30%**
Fredericksburg	**12.1%**	18%	77%	**95%**	2%	3%	**5%**
Hampton Roads	**14.8%**	7%	38%	**45%**	25%	30%	**55%**
Lynchburg	**7.6%**	29%	63%	**92%**	5%	3%	**8%**
Northern Virginia	**10.6%**	27%	61%	**88%**	11%	1%	**12%**
Richmond	**17.4%**	25%	65%	**90%**	4%	6%	**10%**
Salem	**12.1%**	21%	67%	**88%**	3%	9%	**12%**
Staunton	**7.9%**	13%	76%	**89%**	4%	7%	**11%**

NOTE: The FY 2017 State of Good Repair Percentage Fund Distribution Chart will be used for allocating the State of Good Repair funds in FY 2017 and FY 2018. The percentages will be updated in FY 2019 based on the needs assessment shown in the FY 2018 Annual Report.

CTB Decision Brief

Approval of State of Good Repair Prioritization Process Methodology and Authorization for Commissioner of Highways to Apply the Methodology

Issue: Pursuant to § 33.2-369 of the *Code of Virginia*, the Commonwealth Transportation Board (the Board) shall use properly allocated funds for state of good repair purposes (defined as "improvement of deficient pavement conditions and improvement of structurally deficient bridges") (State of Good Repair Funds) for reconstruction and replacement of structurally deficient state and locally owned bridges and reconstruction and rehabilitation of deteriorated pavement on the Interstate System and primary state highway system including municipality-maintained primary extensions. Section 33.2-369 requires the Board to allocate the state of good repair funds to projects in all nine construction districts based on a priority ranking system that takes into consideration (i) the number, condition, and costs of structurally deficient bridges and (ii) the mileage, condition, and costs to replace deteriorated pavements.

Further, Enactment Clause 2 of Chapter 684 of the 2015 Virginia Acts of Assembly requires the Board to develop a priority ranking system required by § 33.2-369 by July 1, 2016. VDOT has developed a proposed priority ranking system methodology for structurally deficient bridges and deteriorated pavements for FY2017 (proposed State of Good Repair Prioritization Process Methodology) and seeks the Board's consideration and approval of the methodology. Further, should the Board approve the proposed State of Good Repair Prioritization Process Methodology, the Commissioner of Highways seeks authorization from the Board to apply the Methodology as required by §§ 33.2-232 and 33.2-369 and to recommend FY 2017 State of Good Repair Funds to projects meeting the state of good repair needs so identified. It is further proposed that the Commissioner will then report to the Board (i) no later than the June 2016 meeting of the Board, the state of good repair needs and recommended projects using Attachment B – FY 2017 State of Good Repair Percentage Fund Distribution Chart based on the needs reported in the FY 2015 Annual Report.

Facts: The proposed State of Good Repair Prioritization Process Methodology for the allocation of state of good repair funds for reconstruction and replacement of structurally deficient state and locally owned bridges and for the reconstruction and rehabilitation of deteriorated pavement on the Interstate System and primary state highway system including municipality-maintained primary extensions is contained in Attachment A. The State of Good Repair Prioritization Process Methodology takes into consideration those factors mandated by § 33.2-369 of the *Code*.

Section 33.2-232 of the *Code* requires the Commissioner of Highways to report, in the Annual Report due November 2016, a listing of prioritized pavement and bridge needs based on the priority ranking system developed by the Board pursuant to § 33.2-369 and a description of the priority ranking system. In order to identify the state of good repair needs required by § 33.2-232, the proposed State of Good Repair Prioritization Process Methodology, if approved, will be applied to the needs used to compile information in the FY 2015 Annual Report relating to costs associated with bringing deteriorated pavement and structurally deficient bridge assets to a state of good repair. The resulting state of good repair needs will be reported to the Board.

Recommendation: VDOT recommends the Board approve the proposed State of Good Repair Prioritization Process Methodology contained in Attachment A and authorize the Commissioner to apply the Methodology for purposes of identifying state of good repair needs required by § 33.2-232. If the State of Good Repair Prioritization Process Methodology is approved by the Board, VDOT recommends applying the percentages in Attachment B – FY 2017 State of Good Repair Percentage Fund Distribution Chart to provide the Board recommended projects for State of Good Repair funding in June 2016.

Action Required by CTB: The Board will be presented with a resolution for a formal vote.

Result, if Approved: (1) The statutory requirement that the CTB develop a state of good repair priority ranking system will be met by the July 1, 2016 deadline; (2) the Commissioner will be authorized to apply the State of Good Repair Prioritization Process Methodology and Attachment B – FY 2017 State of Good Repair Percentage Fund Distribution Chart in order to identify and recommend projects for the State Of Good Repair funding. The Board will allocate funds to recommended projects in a separate action/resolution.

Options: The Board may approve, reject or modify the recommendation.

Public Comments/Reactions: None.