



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

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CLAY BRIGHT
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June 29, 2020

Ms. Pamela M. Kordenbrock
Tennessee Division Administrator
Federal Highway Administration
404 BNA Drive
Building 200, Suite 508
Nashville, TN 37217

**Re: Submission of 2020 Transportation Asset Management Plan (TAMP)
Consistency Determination**

Dear Ms. Kordenbrock:

In accordance with 23 CFR Part 515.13 (b) (2), the Tennessee Department of Transportation (TDOT) is pleased to present the enclosed submittal of our Transportation Asset Management Plan (TAMP) Consistency Determination for fiscal year 2020. As stipulated in 23 CFR Part 515.11(c), TDOT has produced a State-approved asset management plan which describes our processes for developing a risk-based asset management plan, including the policies, procedures, documentation, and implementation approach that satisfy the requirements of this part and received certification of that plan from FHWA. The attached consistency determination report outlines how TDOT has fully implemented the approved asset management plan in accordance with the requirements in 23 U.S.C.119 during the 12-month period preceding the June 30, 2020 deadline to submit to FHWA.

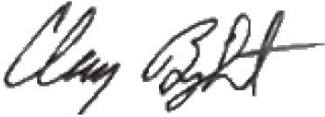
TDOT recently expressed a concern regarding the 12-month period preceding the June 30 deadline for submittal of the consistency determination. 23 CFR Part 515.13(b)(2)(i) states that "FHWA considers the best evidence of plan implementation to be that, for the 12 months preceding the consistency determination, the State DOT funding allocations are reasonably consistent with the investment strategies in the State DOT's asset management plan." This would require TDOT to produce documentation for investment obligations which have not yet taken place.

As a result of our expressed concerns, we were instructed to discuss the issue with our FHWA Division Office and agree upon an appropriate solution. On February 26, 2020, representatives from TDOT and FHWA's Tennessee Division agreed to shift the 12-month period preceding the consistency determination to

include investments between June 1, 2019 and May 31, 2020. This will allow TDOT sufficient time to provide the most current actual investment amounts for review in order to determine whether the asset management plan has been successfully implemented by TDOT.

If you have any questions regarding this consistency determination or the TAMP, please contact Mr. Jerry Hatcher at 615-741-2027 or by email at jerry.hatcher@tn.gov.

Sincerely,



Clay Bright
Commissioner

CB/CCH

enclosure

cc: Mr. Paul D. Degges, P.E.
Mr. Joe Galbato
Mr. Jeff Jones, P.E.
Mr. Jerry Hatcher, P.E.
Mr. Will Reid, P.E.
Mr. Chris Harris, P.E.
Mr. Preston Elliot

Ms. Lyndsay Botts
Ms. Sabrina David (FHWA)
Ms. Pamela Heimsness (FHWA)
Mr. Greg Simmons (FHWA)
Mr. Fawaz Saraf (FHWA)
Mr. Rich Casselone (FHWA)

CONSISTENCY DETERMINATION

Allotment Amounts:

June 1, 2019 – May 31, 2020

Comparing to Budgets from:

TAMP Version 2019.1.2

What is Consistency Determination?

TDOT strongly believes in operating as an open and transparent governmental body that serves the people of Tennessee in a beneficial manner to provide a safe and reliable transportation system for people, goods, and services that supports economic prosperity in Tennessee. TDOT's Mission is to provide a safe and reliable transportation system that supports economic growth and quality of life. Our Vision is a commitment to excellence in managing and improving the state's transportation system, promoting the success of our employees, and strengthening the trust of our customers. TDOT values stewardship, integrity, safety, consistency, development, innovation, collaboration, and family. This TAMP exemplifies TDOT's commitment to plan, design, build, maintain, and manage one of the best transportation systems in the nation. The consistency determination is TDOT's proof that it is managing the state's NHS pavement and bridge assets in accordance with a strategic plan to be as efficient and effective as possible with the federal and state dollars and achieve their performance goals and objectives.

What are the MAP-21 and Final Rule requirements?

Consistency Determination requirements are identified in 23 CFR Part 515.13 (b) (2) as follows:

(b) Annual determination of consistency under 23 U.S.C. 119(e)(5). Not later than August 31, 2019, and not later than July 31 in each year thereafter, FHWA will notify the State DOT whether the State DOT has developed and implemented an asset management plan consistent with 23 U.S.C. 119. The notice will be in writing and, in the case of a negative determination, will specify the deficiencies the State DOT needs to address. In making the annual consistency determination, the FHWA will consider the most recent asset management plan submitted by the State DOT, as well as any documentation submitted by the State DOT to demonstrate implementation of the plan. The FHWA determination is only as to the consistency of the State DOT asset management plan and State DOT implementation of that plan with applicable requirements, and is not an approval or disapproval of strategies or other decisions contained in the plan. With respect to any assets the State DOT may elect to include in its plan in addition to NHS pavement and bridge assets, the FHWA consistency determination will consider only whether the State DOT has complied with § 515.9(l) with respect to such discretionary assets.

(1) Plan development. The FHWA will review the State DOT's asset management plan to ensure that it was developed with certified processes, includes the required content, and is consistent with other applicable requirements in this part.

(2) Plan implementation. The State DOT must demonstrate implementation of an asset man-

agement plan that meets the requirements of 23 U.S.C. 119 and this part. Each State DOT may determine the most suitable approach for demonstrating implementation of its asset management plan, so long as the information is current, documented, and verifiable. The submission must show the State DOT is using the investment strategies in its plan to make progress toward achievement of its targets for asset condition and performance of the NHS and to support progress toward the national goals identified in 23 U.S.C. 150(b). The State DOT must submit its implementation documentation not less than 30 days prior to the deadline for the FHWA consistency determination.

(i) FHWA considers the best evidence of plan implementation to be that, for the 12 months preceding the consistency determination, the State DOT funding allocations are reasonably consistent with the investment strategies in the State DOT's asset management plan. This demonstration takes into account the alignment between the actual and planned levels of investment for various work types (i.e., initial construction, maintenance, preservation, rehabilitation and reconstruction).

(ii) FHWA may find a State DOT has implemented its asset management plan even if the State has deviated from the investment strategies included in the asset management plan, if the State DOT shows the deviation was necessary due to extenuating circumstances beyond the State DOT's reasonable control.

What is TDOT's Process for Documenting Consistency?

TDOT will submit to FHWA a summary of how the agency's annual investment strategy of planned allocations, as documented in TDOT's Transportation Asset Management Plan Version 2019.1.2, is in alignment and reasonably consistent with actual investment amounts during the 12-month period from June 1, 2019 to May 31, 2020, as agreed to by TDOT and the FHWA Tennessee Division during the meeting on February 26, 2020. This is to allow TDOT sufficient time to extract the actual investment amounts and prepare the consistency determination report before the June 30 deadline. Should the amounts significantly deviate, TDOT will provide documentation to justify the deviation. Table D-1 below provides a comparison of the TAMP Budget amounts to the Actual Investment amounts for each of the five work types, as defined by FHWA (Maintenance, Preservation, Rehabilitation, Construction, and Reconstruction).

TDOT's budget process does not currently split out amounts for construction and reconstruction separately. Therefore, Table D-1 will show the budget amount for construction and reconstruction combined into a single value for TAMP Budget under the Reconstruction row. Project allotment amounts in TDOT's Program, Project, and Resource Management (PPRM) application have been separated into categories for New Construction and Reconstruction, so the actual investment amounts for construction and reconstruction can be properly separated and shown individually in Table D-1; however, for consistency determination, these amounts have been combined before comparing to the combined budget amount.

The PPRM application is currently undergoing system redesign, and TDOT plans to revise its budget process to provide for a separate budget amount for these two work types in future versions of the TAMP Consistency Determination. See Table 6-3 of TDOT's TAMP document for a crosswalk of the various treatments included in each of the five work types.

Table D-1

Fiscal Year 2020 Work Type	Bridges			Pavements		
	TAMP Budget (\$M)	Actual Investment (\$M)		TAMP Budget (\$M)	Actual Investment (\$M)	
		NHS	Non-NHS		NHS	Non-NHS
Preservation	5.0	7.5	0.0	224.6 ⁽¹⁾	132.9	74.3
Rehabilitation	40.5	31.9 ⁽³⁾	14.4 ⁽³⁾	7.3 ⁽¹⁾	44.5 ⁽²⁾	5.8 ⁽²⁾
Reconstruction	67.7 ⁽⁴⁾	19.3 ⁽⁴⁾	20.6 ⁽⁴⁾	947.7	406.3 ^(4,7)	39.7 ^(4,7)
Construction		0.0 ⁽⁴⁾	-1.1 ^(4,5)	587.1 ^(4,6)	13.7 ⁽⁴⁾	53.5 ⁽⁴⁾
Maintenance	5.0	2.8 ⁽⁸⁾		26.8	27.1 ⁽⁸⁾	
Total	118.2	95.3		845.8	797.9	
Does the Actual Investment amount significantly deviate from the TAMP Investment amount?				Yes		
<p>If yes, provide documentation below on why the deviation(s) were necessary due to extenuating circumstances beyond TDOT's reasonable control.</p> <p>Documentation: TDOT has historically adopted a "pay-as-you-go" and "fix-it-first" strategy for annual transportation budgeting. Additionally, TDOT has taken an aggressive approach when it comes to promoting the preservation for pavement and bridge assets before they deteriorate to the point where they must be reconstructed. As a result of this strategy, TDOT has been ranked nationally as one of the best transportation infrastructure networks in the country and currently carries zero debt service for transportation.</p> <p>Although TDOT's approach to managing its two most valuable assets has been successful to date, the approach that has been used to program budgets and to track project obligations is not consistent with the reporting requirements that have been established in 23 CFR Part 515.13(b)(2). While TDOT does execute projects which directly correlate to the five work types listed in the table above, the budgets that we establish each year have not been programmed into these specific work types and the actual investment amounts have not been tracked in that manner.</p> <p>Additionally, TDOT's PPRM system does not have the capability to easily identify specific amounts which have been budgeted or expended on the National Highway System. Therefore, attempting to provide meaningful TAMP Investment and Actual Investment amounts broken down into these categories was painstakingly difficult, and the amounts shown above are our best estimate as to how we have executed projects within each work type.</p> <p>The amounts shown for Maintenance, Preservation, and Rehabilitation were the easiest to determine. Our Pavement Office and Structures Division program managers typically have these amounts readily available and were primarily responsible for producing the investment amounts and budgets for those work types.</p> <p>Deviation Notations and Corrections:</p> <p>⁽¹⁾ During execution of the review for consistency in 2020, it was discovered that TDOT had unintentionally switched the budget amounts for Pavement Preservation and Pavement Rehabilitation in the 2019 TAMP. During a June 24, 2020 meeting with FHWA TN Division representatives (Pamela Heimsness, Greg</p>						

Simmons, Fawaz Saraf, and Rich Casselone), it was agreed that this would not be a significant change requiring a resubmittal of the TAMP for recertification, and that TDOT should simply note this error in the 2020 Consistency Determination. TDOT will correct this error in the next TAMP document submittal.

- (2) The deviation in actual investments for Pavement Rehabilitation is attributed to the fact that TDOT executed more interstate resurfacing jobs with BM2 this year than expected, which have been counted as rehabilitation projects. TDOT also performed approximately \$22M of Hot In-Place Recycling projects, which are 2" deep recycling, and thus would count as rehabilitation instead of preservation.
- (3) The deviation for Bridge Rehabilitation was due to additional money received from the Legislature to pay back amounts borrowed by the General Assembly in previous years. The Structures Division used these additional funds to execute rehabilitation projects on bridges which were not originally anticipated when the budget was prepared.
- (4) Determining the portion of the Reconstruction and Construction projects that contribute to pavement and bridge condition continues to be a challenge for TDOT in 2020. Many assumptions had to be made to split the investment amounts for these work types because our system does not contain enough granularity in the data to produce these splits for both budget amounts. Therefore, the Reconstruction and Construction budgets are combined in Table D-1. Actual Investment amounts are split by Reconstruction and Construction using the Project Type of Work field from PPRM for those allotments, but these values are compared back to the combined budget amount for Reconstruction and Construction for both Pavement and Bridge assets. This is the reason that the deviation between the TAMP Budget and Actual Investment amounts for Reconstruction and Construction are so large. In cases where it was unclear how to split the budget and allotment amounts for pavement and bridges, TDOT assigned the entire amount to the pavement asset.
- (5) Bridge Construction Actual Investment Amount shown is negative due to an adjusting allotment to a project which was let in 2014 but closed in 2020 with a remaining unexpended balance of \$1.1 million. All new bridge construction in 2020 was included with major grade and drain projects, which have been attributed to the pavement asset since we do not have sufficient details to break down those investments by asset.
- (6) During execution of the review for consistency in 2020, it was discovered that TDOT had included items in the 2019 TAMP document related to the budget amount for Pavement Construction and Reconstruction which should have been excluded from this budget amount. This included a duplication of the resurfacing budgets for pavement preservation and rehabilitation, a duplication of the bridge preservation and rehabilitation budget amounts, budgets for the TDOT Help Truck Operations, and budgets for the Rockfall Mitigation Program – all totaling \$318.1 million. Also, budgets for ITS Expansion projects totaling \$40.7 million should have been excluded from the Pavement Reconstruction and Construction budget. Therefore, the FY19 TAMP budget amount for Pavement Reconstruction and Construction should have been \$584.2 million ($\$943.0M - \$318.1M - \$40.7M = \$584.2M$) instead of \$943.0 million. The FY 2020 budget amount for Pavement Reconstruction and Construction would have then been increased by 0.5% for inflation, which would make the FY 2020 budget amount \$587.1 million ($\$584.2M * 1.005 = \$587.1M$) instead of \$947.7 million. This discrepancy was discussed by TDOT and FHWA's TN Division Office on June 24, 2020 and it was decided that this error should be documented in the 2020 Consistency Determination justifications. A revised version of Table 6-4 showing the corrected budget amounts for pavements is shown below for reference, and this will be incorporated into TDOT's next TAMP submittal for recertification by FHWA.
- (7) The deviation in Pavement Reconstruction/Construction was primarily due to approximately \$132M of emergency slide repairs which were necessary due to heavy rainfall in February 2019. Some of these costs may be reimbursed by FHWA through the Emergency Relief Program at a later date; however, a significant portion is expected to not be eligible for ER funds, thus requiring some construction/reconstruction projects to be delayed. Additionally, due to the COVID-19 pandemic, TDOT had to delay execution of projects because of a significant anticipated budget shortfall.

- (8) Maintenance budgets and actual investment amounts for Pavement and Bridges are pulled from TDOT's Maintenance Management System (MMS). These amounts are not separated by NHS and Non-NHS because it would have required a substantial effort to review individual transactions, which was not warranted given the relatively low budget and investment amounts for maintenance.
- (9) Per instruction from Structures Director, Ted Kniazewycz, Scour Prevention for bridges has been moved from Bridge Rehabilitation to Bridge Preservation and Scour Repairs has been added to Bridge Rehabilitation in Table 6-3: Crosswalk Between TDOT Treatment Types and FHWA Work Types

Going forward, TDOT will work to develop new strategies to generate budget amounts which target the work types listed above for pavements and bridges. Additionally, the department will strive to split those budget amounts in a way that makes it clearer as to how much will be invested on and off the National Highway System. Likewise, TDOT will work to enable our financial and asset management systems to break down the actual investment amounts in a way that makes providing this consistency determination by work type and system much simpler and more straightforward. Deviations from the budgeted TAMP investment amounts will require specific documentation to explain why they occurred; however, it will be important to recognize that project overruns and shifts in priority from year to year are inevitable.

This Consistency Determination document will be updated and posted on TDOT's website annually. It will also be referenced in the appendix of each version of TDOT's Transportation Asset Management Plan using the URL web address of the updated Consistency Determination document. Accompanying the 2020 Consistency Determination document will be a link to the spreadsheet which was used to compile the actual investment data from PPRM. Below are links to both documents on TDOT's website.

TAMP Consistency Determination Document:

- <https://www.tn.gov/content/dam/tn/tdot/maintenance/asset-management-office-/tamp/2020TAMP-Consistency-Determination-2020-06-29-v.3.docx>

TAMP Consistency Determination Spreadsheet:

- <https://www.tn.gov/content/dam/tn/tdot/maintenance/asset-management-office-/tamp/TAMPData-2020-Consistency-Determination-6-23-2020.xlsx>

➤ **Table 6-3: Crosswalk Between TDOT Treatment Types and FHWA Work Types**

MAP-21 Work Types	TDOT Pavement Treatments	TDOT Bridge Treatments
Preventative Maintenance	Maintenance Activities, including: Shallow patching Skin patching Partial-depth patching Repair concrete corner breaks Concrete joint repair Other thin patching	Preventive Activities, including: <ul style="list-style-type: none"> • Filling potholes in deck • Minor Structure repair • Major structure repair • Cleaning Structure
Preservation	Preservation Activities, including: <ul style="list-style-type: none"> • Thin asphalt overlay (1.5" or less) • Microsurfacing • Chip seals • Cape seals • Crack sealing • Concrete joint sealing • Mill and fill asphalt overlays (1.5" or less) 	Preservation Activities, including: <ul style="list-style-type: none"> • Repainting structural steel • Sweeping • Deck repairs • Deck waterproofing • Deck epoxy overlay • Polymer modified concrete deck overlay • Cleaning and resealing expansion joints • Scour prevention ⁽⁹⁾
Rehabilitation	Rehabilitation Activities, including: <ul style="list-style-type: none"> • Full-depth patching • Repair/replacing concrete slabs • Hot-in-Place recycling with 1.25" overlay 	Rehabilitation Activities, including: <ul style="list-style-type: none"> • Replacement of expansion joints • Concrete spall repairs • Structural steel repairs • Scour repairs ⁽⁹⁾ • Bearing replacement
Reconstruction	Reconstruction Activities, including: <ul style="list-style-type: none"> • Rubblization and overlay of concrete pavement • Full-depth replacement of asphalt pavement 	Reconstruction Activities, including: <ul style="list-style-type: none"> • Bridge Replacement
Construction	Construction Activities, including: <ul style="list-style-type: none"> • Highway Widening • Highway Realignment • New Highway Construction 	Construction Activities, including: <ul style="list-style-type: none"> • Bridge Widening • New Bridge Construction

Table 6-4: TDOT 10-Year Estimated Budget for Pavements by Work Type (Dollars in Millions)
(Revised)

Year	Construction & Reconstruction (6)	Repair/ Rehab (1)	Preservation (1)	Maintenance	Total
2019	\$943.0 \$584.2	\$7.3	\$223.5	\$23.8	\$838.8
2020	\$947.7 \$587.1	\$7.3	\$224.6	\$26.8	\$845.8
2021	\$590.0	\$7.4	\$225.7	\$26.9	\$850.0
2022	\$593.0	\$7.4	\$226.9	\$27.1	\$854.4
2023	\$596.0	\$7.4	\$228.0	\$27.2	\$858.6
2024	\$598.9	\$7.5	\$229.1	\$27.3	\$862.8
2025	\$601.9	\$7.5	\$230.3	\$27.5	\$867.2
2026	\$604.9	\$7.6	\$231.4	\$27.8	\$871.7
2027	\$608.0	\$7.6	\$232.6	\$27.9	\$876.1
2028	\$611.0	\$7.6	\$233.8	\$28.0	\$880.4
Total	\$5,975.0	\$74.6	\$2,285.9	\$270.3	\$8,605.8

Table 6-5: TDOT 10-Year Estimated Bridge Management Budget by Work Type (Dollars in Millions)

Year	Construction & Reconstruction (6)	Repair/ Rehab	Preservation	Maintenance	Total
2019	\$67.6	\$42.3	\$9.4	\$4.5	\$123.8
2020	\$67.7	\$40.5	\$5.0	\$5.0	\$118.2
2021	\$89.7	\$37.0	\$5.0	\$5.0	\$136.7
2022	\$89.7	\$37.5	\$5.0	\$5.0	\$137.2
2023	\$89.7	\$38.0	\$5.0	\$5.0	\$137.7
2024	\$89.7	\$39.0	\$5.0	\$5.0	\$138.7
2025	\$89.7	\$40.0	\$5.5	\$5.5	\$140.7
2026	\$90.2	\$41.0	\$5.5	\$5.5	\$142.2
2027	\$90.7	\$42.0	\$5.5	\$5.5	\$143.7
2028	\$91.2	\$43.0	\$5.5	\$5.5	\$145.2
Total	\$855.9	\$400.3	\$56.4	\$51.5	\$1,364.1