**COMMITTEE ACTION NEEDED**

**DATE:** April 17, 2018

**TO:** TAC and Policy Committee

**PREPARED BY:** Kim Gallagher and Brandon Kovnat

**SUBJECT:** 2018-2021 TIP Amendment: Safety Performance Measure Language

**REQUESTED ACTION:**

Amend the 2017- 2020 Transportation Improvement Program (TIP) to incorporate safety performance measure language.

**RECOMMENDED MOTION:**

That the TAC and Policy Committees approve an amendment to the 2017-2020 Transportation Improvement Program (TIP) to incorporate safety performance measure language.

**BACKGROUND AND PURPOSE OF ACTION**: This TIP amendment is needed to add text

related to performance measures. Title 23, Section 450.326(d) of the CFR states: *The TIP shall include, to the maximum extent* *practicable, a description of the anticipated effect of the TIP toward achieving the performance* *targets identified in the metropolitan transportation plan, linking investment priorities to those* *performance targets*.

The initial incorporation of performance measures into the TIP includes performance measure

(PM) 1 – Safety with a deadline of May 27, 2018. While it is not necessarily required to

incorporate language on this performance measure into the current (2017-2020) TIP, the ability

to amend projects into or within the TIP could be jeopardized if this language is not included.

**RELATIONSHIP TO REGIONAL POLICY:** Federal law requires that all transportation projects

That will be funded with federal funds must be in an approved TIP. Further, federal law requires

Performance-based planning related to for safety, pavement, bridge, reliability, freight,

Congestion Management/Air Quality (CMAQ), and transit asset and safety. The schedule for

Inclusion of these measures is staggered, with the first measure, safety, is to be incorporated

into the TIP by May 27, 2018.

**STAFF ANALYSIS:** This is a text change and does not affect any individual project in the TIP.

This change enables the TIP to be compliant with federal regulations and to remain flexible if an

amendment is needed to an individual project.

DRAFT

PERFORMANCE MEASURES AND TARGETS

*Background*

Pursuant to Title 23, Section 450.326(d) of the Code of Federal Regulations, the Metropolitan

Council is required to incorporate a performance-based planning approach when developing the

TIP. This includes an analysis of the anticipated effect the TIP may have towards achieving the

performance targets adopted for the metropolitan area. Specifically, the regulation states:

*The TIP shall include, to the maximum extent practicable, a description of the*

*anticipated effect of the TIP toward achieving the performance targets identified in*

*the metropolitan transportation plan, linking investment priorities to those*

*performance targets.*

This approach was first established in 2012 with the federal Moving Ahead for Progress in the

21st Century Act (MAP-21), which established performance-based planning and identified the

Federal performance measures for safety, pavement, bridge, reliability, freight, CMAQ, and

transit asset management and safety. The requirements continue through the federal Fixing

America’s Surface Transportation (FAST) Act, signed into law in 2015. The following are the

three broad performance measure categories and the dates by which they must be included in

the TIP:

* Safety Performance Measure (PM1): May 27, 2018
* Pavement and Bridge Performance Measure (PM2): May 20, 2019
* System Performance Measures and CMAQ (PM3): May 20, 2019

*NATS Activities and Progress*

NATS officially adopted the State of Michigan Safety Performance measures and targets on January 23, 2018, and submitted them to Michigan Department of Transportation. The following 2018 safety targets were adopted for the NATS area:

* Number of traffic fatalities: 1003.2
* Fatality rate (fatal crashes per 100 million vehicle miles travelled): 1.02 per 100M VM
* Serious injury crashes: 5,136.4
* Serious injury rate (number of serious injury crashes per 100 million vehicle miles
* travelled): 5.23 per 100 million VMT
* Non-motorized fatalities and serious injuries: 743.6

The staff at SWMPC and NATS continues to work closely with MDOT to develop state targets for the PM2, PM3, and CMAQ measures, and will adopt the targets prior to the May 20, 2019 deadline. In the future, TIPs will include adopted regional targets for all three of the performance measure categories.

The upcoming NATS 2045 Long Range Transportation Plan (LRP) includes an overarching goal related to safety—the Guiding Principle of Safety, as well as strategies (actions) NATS will employ to ensure that the desired safety outcomes are met. In addition, the five federally required safety performance measures and targets are included in the 2045 LRP along with the existing conditions and performance trends for all of the performance measures.

In addition to the LRP, there are several studies that have been completed that directly address safety issues a propose strategies to improve safety within the region. These studies include the Michigan Strategic Highway Safety Plan and the Southwest Region Local Safety Plan.

Anticipated Effect of the Safety Performance Measures

The 2017-2020 TIP is anticipated to have a positive effect towards meeting NATS established safety performance targets. The TIP reflects $74,746 in FHWA Safety funds. These projects address both existing high-incident locations (reactive projects) and proactive projects that pre-emptively address safety. projects utilizing Surface Transportation Funding (STP) also address safety.

The member communities that make up NATS are committed to further improving transportation safety. This is reflected in the importance of safety-related scoring criteria included in the NATS solicitation of projects and in the projects that are ultimately programed into the TIP.

*“A CRF should be regarded as a generic estimate of the effectiveness of a countermeasure. The estimate is a useful guide, but it remains necessary to apply engineering judgment and to consider site-specific environmental, traffic volume, traffic mix, geometric, and operational conditions, which will affect the safety impact of a countermeasure.”*

FHWA CFR Desktop Reference Guide

Each project that is programed into the TIP is reviewed to quantify their effects on safety. (See Table on following page) The SWMPC staff analyzes each of the projects utilizing FHWA’s Crash Reduction Factor Desktop Reference Guide to estimate the effectiveness of each project. Crash Reduction Factors (CRF), are estimates of how a certain safety countermeasures will reduce crashes. Below is a summary of the safety countermeasures included in the NATS 2017-2020 projects.

**NATS 2017-2020 Local Projects**

|  |  |
| --- | --- |
| **Countermeasure** | **CRF** |
| Crosswalks | 25.0% |
| Bike lanes | 36.0% |
| Resurface | 33.0% |
| Shoulder | 20.0% |
| Sidewalk | 70.0% |
| Guard Rails | 30% |
| Tree Removal | 38% |
| Signal | 20% |
| Left turn lane | 74% |

The tables on the following pages provide details for each local project within the 2017-2020 TIP. Each project in the TIP was given a value based on the number of crashes that are estimated be reduced based on all of countermeasures applied. This analysis uses a multiplier effect for projects that include multiple countermeasures. What this means is that if the CRF for resurface is a 33% reduction and the CRF for a 5 ft. paved shoulder is a 20% reduction, the project was estimated to reduce crashes by 46%.

The CRF is the percent reduction in crashes

expected from the countermeasure

The CRF used apply to all crash types. It was assumed that a reduction in all crashes would translate to a proportional reduction in Fatalities and Serious Injuries.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fiscal Year | MDOT Job No. | Responsible Agency | Project Name | Limits | Safety Features | CMF Total | Accidents 10 yrs | | | | K&A | Ped/Bike | | | Crash Reduction | |
| 2017 | 120683 | Berrien County Road Commission | Dayton, Orange, Third, Fulkerson and Ontario | Dayton from US 12 to State Line; Orange from Bertrand to State Line; 3rd from Bell to Fulkerson; Fulkerson from 3rd to S 11th. Ontario: Third to Cass County | Resurface Only | 0.33 | 149 | | | | 1 | 1 | | | 49 | |
| 2017 | 120684 | Berrien County Road Commission | Red Bud Trail and Niles Buchanan Road | Red Bud Trail: City of Buchanan to US 12 AND Niles Buchanan Road Niles to Buchanan | Resurface Only | 0.33 | 332 | | | | 8 | 2 | | | 110 | |
| 2017 | 130875 | Berrien County Road Commission | Upgrading Guardrails on Various Primary Roads | North Main Street: City of Buchanan to Andrews Road | Guardrail | 0.3 | 9 | | | | 0 | 0 | | | 3 | |
| 2017 | 120692 | City of Niles | Sycamore St | 13th to 17th | Crosswalks, Resurface | 0.33 | 7 | | | | 1 | 1 | | | 2 | |
| 2017 | 120691 | Cass County Road Commission | Redfield St | Brandywine Creek to Oak | Resurface Only | 0.33 | 49 | | | | 3 | 1 | | | 16 | |
| 2018 | 131063 | Berrien County Road Commission | Indiana Michigan River Valley Trail | Brandywine Creek Nature Preserve to Fort St | Non-motorized path |  |  | | | |  |  | | |  | |
| 2018 | 130766 | City of Buchanan | River Road Signal Project | at Red Bud Trail | Signal, Crosswalk, Crosswalk signals, video camera | 0.2 | 20 | | | | 0 | 0 | | | 4 | |
| 2018 | 130866 | City of Niles | 17th St | Broadway to Main | Crosswalks, Resurface | ~~0.33~~ | | | ~~43~~ | ~~0~~ | | | | ~~2~~ | | 14 |
| Fiscal Year | MDOT Job No. | Responsible Agency | Project Name | Limits | Safety Features | CMF Total | | Acidents 10 yrs | | | K&A | | Ped/Bike | | Crash Reduction | |
| 2018 | 130776 | Cass County Road Commission | Mason St | Cassopolis Road to Calvin Center Road | Resurface Only | 0.33 | | 9 | | | 1 | | 0 | | 3 | |
| 2018 | 200409 | Cass County Road Commission | Gumwood road Phase 3 | North of Indiana State line to 0.1 miles south of Redfield | Non-motorized path |  | |  | | |  | |  | |  | |
| 2018 |  | Cass County Road Commission | Yankee Street | On Yankee Street east of M 60 in Howard Township | Guardrail | 0.2 | | 44 | | | 1 | | 0 | | 9 | |
| 2019 | 130684 | Berrien County | N Main St | City limits to 400 feet South of Reed | Resurface, Guardrail | 0.464 | | 26 | | | 0 | | 0 | | 12 | |
| 2019 | 130775 | Berrien County | Bertrand Rd | Portage to Copp | Resurface Only | 0.33 | | 95 | | | 1 | | 1 | | 31 | |
| 2019 | 130772 | Cass County | Redfield St | Conrad Road to M-62 | Resurface Ony | 0.33 | | 16 | | | 0 | | 0 | | 5 | |
| 2020 | 130769 | Berrien County | 3rd St | US-12 to Fulkerson Road | Resurface Only | 0.33 | | 80 | | | 0 | | 0 | | 26 | |
| 2020 | 130763 | Cass County | Lake St | Airport Road to Huntly | Resurface Only | 0.33 | | 35 | | | 1 | | 1 | | 12 | |
| 2020 |  | Cass County Road Commission | Ontwa Township Complete Streets Phase 2 | US-12 and Claire Street | Path |  | |  | | |  | |  | |  | |

NATS Priorities

NATS is incorporating a number strategies into the 2017-2020 TIP and the 2045 Long Range Transportation Plan intended to improve transportation safety and meet the 2018 safety targets.

Specific strategies include:

* Transportation partners will incorporate safety and security considerations for all modes and users throughout the processes of planning, funding, construction, and operation.
* Transportation partners should monitor and routinely analyze safety data by mode, severity, and location to identify priorities and progress.
* Transportation partners will use best practices to provide and improve facilities for safe walking and bicycling, since pedestrians and bicyclists are the most vulnerable users of the transportation system.
* Transportation partners will support the state’s vision of moving toward zero traffic fatalities and serious injuries, which includes supporting education and enforcement programs to increase awareness of regional safety issues, shared responsibility, and safe behavior.

Conclusion

NATS supports the efforts to move towards a performance-based planning approach, and

will continue to work closely with regional, state, and federal partners to proactively establish

and monitor both the required federal and the adopted performance measures over time. Moving forward, NATS will continue to devote substantial resources to this effort and

work closely with stakeholders to assess the federal targets and the performance measures and adjust to changes in the performance of the system by shifting investment priorities.