

## **TRANSPORTATION ASSET MANAGEMENT POLICY**

### **POLICY STATEMENT:**

Recognizing the immense need for preserving transportation investments, The Northeast Ohio Areawide Coordinating Agency (NOACA) has established a transportation asset management program to ensure the transportation network is maintained efficiently and effectively with allocated resources to allow future generations the ability to travel safely and reliably. This policy establishes the link between the agency's strategic objectives with its investment decisions.

### **AUTHORITY:**

Ohio Revised Code, Sections § 307, 5501.03(d)  
23 U.S.C. 101(a)(2), MAP-21 § 1103

### **PURPOSE:**

The purpose of this policy is to adopt Transportation Asset Management as the official, institutional approach in managing infrastructure assets and making capital investment decisions at the Northeast Ohio Areawide Coordinating Agency.

### **BACKGROUND:**

NOACA faces challenges that are common to many other local governments and transportation agencies: aging infrastructure, rising costs, and stable or declining funding. NOACA is also challenged to do more with less, and resources often fall short of the need to maintain a state of good repair across many transportation assets. The region's transportation needs are served by a number of assets, including several interstate highways, a major airport, passenger and freight rail, ports, transit, and bikeways. This transportation system includes 3,069 bridges along 8,494 total lane-miles of federal-aid eligible roadways.

### **POLICY:**

NOACA's vision is to **STRENGTHEN** regional cohesion, **PRESERVE** existing infrastructure, and **BUILD** a sustainable multi-modal transportation system to **SUPPORT** economic development and **ENHANCE** quality of life in Northeast Ohio. In furtherance of the vision of NOACA, five goals guide the agency. This policy supports goal two; preserve existing infrastructure.

The transportation asset management policy applies to transportation infrastructure in the five counties of the NOACA region initially focusing on pavement and bridges, but extending to all transportation infrastructure on a step by step basis. Although this policy is targeting infrastructure condition, NOACA will pursue an approach that reflects a "complete streets" concept to ensure that all projects identified will balance the needs of all users including motorists, pedestrians, bicyclists, transit vehicles, emergency vehicles, freight carriers and horse drawn vehicles to provide a safe and accessible, well connected transportation network.

Transportation asset management focuses on strategic maintenance, rehabilitation and replacement of assets rather than a worst first strategy. Key strategic transportation asset management documents form the overall approach to asset management:

Transportation Asset Management Plan – Uses an integrated approach geared towards effectively managing existing and new infrastructure to maximize benefits, reduce risk and provide safe and reliable levels of service to the region. The Plan contains asset inventories and existing conditions; goals, objectives and measures; performance measures and targets; performance gaps; lifecycle management; risk management; financial summary; investment

strategies; and process enhancements. The plan was developed using a ten year horizon, but should be updated every two years.

Pavement Management Software - The software is an advanced analytical tool that enables better decision making and maximizes the budget while achieving the highest possible return on investment. The tool will be used to focus on reducing the substantial backlog of deficient pavements while at the same time utilizing a multi-year prioritization approach containing a mix of fixes for pavements in various condition stages, so an acceptable balance of pavement condition for the region is maintained. The system generates scenarios based on utilization of different prioritization criteria over a defined (short, medium or long) planning horizon. The inputs the tool utilizes for scenario analyses are:

NLFID	Surface Type	Area	Bike Lane Status	Work History
Street Name	Number of Lanes	Jurisdiction	Bike Lanes	Pavement Treatment Types
Route	PCR	County	Transit	Cost Estimates
Distance From	PCR Year	Municipality	Curb Condition	
Distance To	AADT	Pavement Type	IRI Avg Control	
Length	Count Year	Func Class	IRI Left Avg	
Width	Speed Limit	Divided	IRI Right Avg	

The pavement treatments types being utilized are:

2.0 in. HOT Mix Mill & Overlay
Joint Repair
Full Depth Reclamation
Preventive Maintenance Minor
Preventive Maintenance Major
Minor Rehab without Repairs (AC)
Minor Rehab with Repairs (AC)
Functional CPR (Minor Concrete Repair)
Structural CPR (Rehab with more repair work)
Major Rehab/Reconstruction

Bridge Management Software - The National Bridge Investment Analysis System (NBIAS) Incorporates economic forecasting analysis tools to project the multiyear funding needs required to meet user-selected performance metrics over the length of a user-specified performance period. The NBIAS combines statistical models with engineering judgment and calculates a trade-off structure showing the effect of hypothetical funding levels on each of more than 200

performance measures utilizing an adaptation of an incremental benefit-cost model with a graphical output showing the trade-off between funding and performance.

**INFRASTRUCTURE TARGETS:**

Establishment of infrastructure condition targets is challenging for any agency and budget implications and sustainability must be balanced with the expectations of decision makers and constituents. NOACA seeks to establish condition target values that will help the agency coordinate among member communities to attain the best network conditions region-wide and support continued improvement over time. The following performance measures and targets have been established to measure how effectively NOACA is achieving the goals and objectives of the Regional Strategic Plan.

	Performance Measure	Target
Funds	Percentage of NOACA administered Surface Transportation Block Grant (STBG) funds dedicated towards preservation of the existing transportation system	90%
Pavements	Average network condition level for the urban and local federal aid system, including non-interstate national highway system (NHS), using an average weighted pavement condition rating (PCR) on a 0 to 100 scale	80
	Percentage of the network above average weighted PCR of 55 for the urban and local federal aid system, including non-interstate national highway system (NHS), using an average weighted pavement condition rating (PCR) on a 0 to 100	85%

Bridges	Average general appraisal for all structures over 20 feet in length on the urban and local federal aid system, including non-interstate NHS. The General Appraisal (GA) is a composite condition measurement of the major structural items of a bridge such as superstructure, piers and abutments. General Appraisal values range from 0 to 9, with 9 being like new and 0 being out of service.	6.8
	Percent of bridge deck area on structurally deficient bridges for all structures over 20 feet in length on the urban and local federal aid system, including non-interstate NHS. A bridge is considered to be structurally deficient if the deck, superstructure, substructure, or culvert is rated in "poor" condition (0 to 4 on the national bridge inventory (NBI) rating scale).	No more than 10%

NOACA will also comply with 82 FR 5886 - National Performance Management Measures; assessing pavement condition for the national highway performance program and bridge condition for the national highway performance program.

National performance measures for assessing pavement condition:

- Percentage of pavements of the Interstate System in Good condition
- Percentage of pavements of the Interstate System in Poor condition
- Percentage of pavements of the non-Interstate NHS in Good condition
- Percentage of pavements of the non-Interstate NHS in Poor condition

IRI rating shall be determined for all pavement types using the following criteria. If an IRI value of a pavement section is:

- Less than 95, the IRI rating for the pavement section is Good
- Between 95 and 170, the IRI rating for the pavement section is Fair

- Greater than 170, the IRI rating for the pavement section is Poor

Cracking condition shall be determined using the following criteria:

- For asphalt pavement sections
  - If the Cracking\_Percent value of a section is less than 5 percent, the cracking rating for the pavement section is Good
  - If the Cracking\_Percent value of a section is equal to or greater than 5 percent and less than or equal to 20 percent the cracking rating for the pavement section is Fair
  - If the Cracking\_Percent value of a section is greater than 20 percent the cracking rating for the pavement section is Poor
- For jointed concrete pavement sections
  - If the Cracking\_Percent value of a section is less than 5 percent, the cracking rating for the pavement section is Good
  - If the Cracking\_Percent value of a section is equal to or greater than 5 percent and less than or equal to 15 percent the cracking rating for the pavement section is Fair
  - If the Cracking\_Percent value of a section is greater than 15 percent the cracking rating for the pavement section is Poor
- For CRCP sections
  - If the Cracking\_Percent value of a section is less than 5 percent, the cracking rating for the pavement section is Good
  - If the Cracking\_Percent value of a section is equal to or greater than 5 percent and less than or equal to 10 percent, the cracking rating for the pavement section is Fair
  - If the Cracking\_Percent value of a section is greater than 10 percent, the cracking rating for the pavement section is Poor

Rutting or faulting rating shall be determined using the following criteria.

- For asphalt pavement
  - If the rutting value of a section is less than 0.20 inches, the rutting rating for the pavement section is Good
  - If the rutting value of a section is equal to or greater than 0.20 inches and less than or equal to 0.40 inches, the rutting rating for the pavement section is Fair
  - If the rutting value of a section is greater than 0.40 inches, the rutting rating for the pavement section is Poor

- For jointed concrete pavement
  - If the faulting value of a section is less than 0.10 inches, the faulting rating for the pavement section is Good
  - If the faulting value of a section is equal to or greater than 0.10 inches and less than or equal to 0.15 inches, the faulting rating for the pavement section is Fair
  - If the faulting value of a section is greater than 0.15 inches, the faulting rating for the pavement section is Poor

National performance measures assessing bridge condition:

- Percentage of NHS bridges classified as in Good condition
- Percentage of NHS bridges classified as in Poor condition

Good condition is defined as: When the lowest rating of the 3 NBI items for a bridge (Items 58—Deck, 59—Superstructure, 60—Substructure) is 7, 8, or 9, the bridge will be classified as Good. When the rating of NBI item for a culvert (Item 62—Culverts) is 7, 8, or 9, the culvert will be classified as Good.

Poor condition is defined as: When the lowest rating of the 3 NBI items for a bridge is 4, 3, 2, 1, or 0, the bridge will be classified as Poor. When the rating of NBI item for a culvert is 4, 3, 2, 1, or 0, the culvert will be classified as Poor.

**FUNDING:** To promote the implementation of NOACA TAMP principles on projects utilizing non-NOACA administered funds, local maintaining agencies may be eligible for Toll Credits. Project sponsors utilizing solely state or local funds to improve the pavement condition of a federal aid route may receive toll revenue credits to increase the participation share from 80% to 90% on a future NOACA funded project. The project utilizing state or local funds must be consistent with NOACA’s transportation asset management program.

The **Federal-Aid Eligible System** includes all public highways eligible for assistance under Chapter 23 U.S. Code § 101 other than highways functionally classified as a local road or rural minor collector.<sup>1</sup> According to FHWA, “The Federal-Aid Highway Program supports State highway systems by providing financial assistance for the construction, maintenance and operations of the Nation’s 3.9 million-mile highway network, including the Interstate Highway System, primary highways and secondary local roads. FHWA is charged with implementing the Federal-aid Highway Program in cooperation with the States and local government.”<sup>2</sup>

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<sup>1</sup> U.S. Code Chapter 23 § 101, <https://www.law.cornell.edu/uscode/text/23/101>.

<sup>2</sup> <https://www.fhwa.dot.gov/federal-aidessentials/federalaid.cfm>.