PennDOT District 8-0 Bridge and Roadway Project Prioritization Process for 2027-2030 TIP

Bridge

The 2025-2028 TIP Bridge Project Prioritization process was conducted with an emphasis on obtaining "Lowest Lifecycle Cost" (LLC) per PennDOT's Transportation Asset Management Plan (TAMP). The District 8-0 Bridge Unit analyzed the entire state-owned bridge network within the District using PennDOT's Bridge Asset Management (BAMS) Tool (named Bridge Care) to develop a LLC program weighted according to Bridge Risk Score. The Bridge Risk Score Calculation is shown below and can best be thought of as a bridge "importance score" primarily based on the size of the bridge and the amount of traffic using it. This software, along with extensive manual review of potential candidates, was used to determine the bridge candidates to submit to the MPO's for consideration in the 2027 Transportation Improvement Program (TIP) update. After the MPO's received the candidates from District 8-0, they compared them to their scoring process to see how they ranked against their bridge priorities for programming. Due to a lack of funding due to carryover projects the number of new bridges added to the 2027 TIP were limited but all candidates were programmed onto the 2027 TYP for future consideration.

Bridge Risk Score Calculation

The risk score for each bridge is calculated using the formula below. Appendix Table J.2 defines the factors and the parameters that determine factor values.

$$\text{Bridge Risk} = \left(\sqrt{\text{Deck Area} * \text{Annual Average Daily Traffic}}\right) * F_s * F_{fc} * F_{det} * F_{aadtt} * F_{flood}$$

Appendix Table J.2: Bridge Risk Score Factors

Factor	Definition	Parameter	Factor Value
F_s	Scour Factor	Scour Rating = A	1.2
		Scour Rating ≠ A	1.0
F_{fc}	Fracture Critical Factor	Fracture Critical Rating < 5	1.4
		Fracture Critical Rating ≥ 5	1.0
F_{det}	Detour Length Factor	Detour Length > 30 miles	2.0
		Detour Length ≥ 10 miles	1.5
		Detour Length < 10 miles	1.0
F_{aadtt}	Annual Average Daily Truck Traffic Factor	Truck traffic > 20% total traffic	2.0
		Truck traffic ≥ 10% total traffic	1.5
		Truck traffic < 10% total traffic	1.0
F_{flood}	Bridge Closed for Flooding Event Factor	Bridge has been closed for flooding	3.0
		Bridge has been overtopped due to flooding	1.5
		Bridge has not been closed or overtopped due to flooding	1.0

Pavement

District 8-0 utilized data from the Roadway Management System (RMS) along with input from our County Maintenance staff to identify our TIP and A-409 pavement candidates for the 2027 TIP update. Both our District Maintenance Services Manager and District Maintenance Program Manager analyzed segments of roadway on our four business plan networks based on International Roughness Index (IRI), Overall Pavement Index (OPI), Average Daily Traffic (ADT), Average Daily Truck Traffic (ADTT) and last year of resurfacing. The County Maintenance Manager identified pavement priorities for their county and shared the list with our District Maintenance Services Manager and District Maintenance Program Manager, which were compared with the RMS and PAMS data to identify the candidates for the pavement candidate meetings.

County pavement candidate meetings were held that included the following staff: District Executive, Assistant District Executive-Design and Maintenance, District Maintenance Services Manager, District Maintenance Program Manager, District Pavement Engineer, Planning and Programming manager, Portfolio Manager, District Planning staff, County Maintenance Manager, assistant County Maintenance managers, and other county maintenance staff as needed. At these meetings the team discussed the priorities and funding availability from both maintenance and Transportation Improvement Programs (TIP). Projects deemed to be more appropriate for TIP Funding were shared with the MPO for funding consideration. A-409 considered projects were also shared with the MPO (at request) for any specific feedback.