Transportation Systems Management and Operation: Traffic Infrastructure Process (TSMO – TIP)

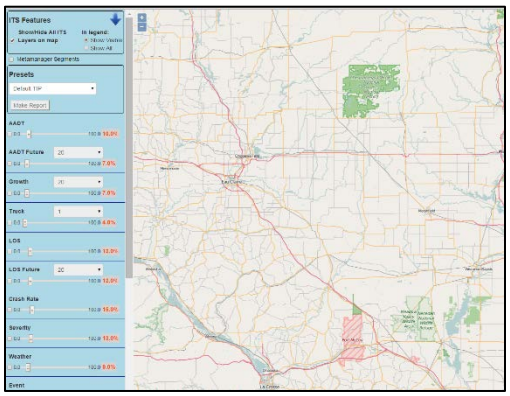
Process Development and Approach

The intelligent transportation industry is constantly changing with advancements in technology. The ability to be flexible and proactive; to take advantage of technological advancements is even more critical today with the on-set of connected vehicle and an expectation of mass amounts of readily available data. Wisconsin Department of Transportation (WisDOT) Bureau of Traffic Operations (BTO) is anticipating this rapidly changing environment by shifting program processes to address needs based on current technologies and approaches rather than completing long-term plans that may be outdated by the time of project implementation.

The Transportation Systems Management and Operations Traffic Infrastructure Process (TSMO – TIP) is being developed such that needs and solutions are considered on an annual basis; increasing the efficiency and effectiveness of funding resources. A consistent, objective methodology of identifying needs and project development will be used throughout the State. One-day workshops will be held in each of the regions to consider current needs and develop potential projects. Needs identification and project justification tools have been developed to assist with project development, and are described below. Projects will be considered annually based on the established need and estimated benefit. Those projects that are deemed justifiable will be approved to seek funding.

Needs Identification

The needs analysis tool has been developed to use current data to identify areas of concern based on various user defined criteria. Examples of criteria that are available for user consideration include: AADT, AADT Future, Growth, Truck, LOS, LOS Future, Crash Rate, Severity, Weather, Event. These criteria can be weighted by the user to focus on a specific area of concern or the user may select pre-determined presets such as: Default TIP, Safety, Mobility Present, Mobility Future, Service or Freight Performance.



The user is able to easily see the relative need based on the map color gradient which shows relative measure of need from low to high based on the segment values and user defined weighting criteria. Potential projects will be developed based on the current identified needs.

Project Justification

The project justification tool has been developed to assess and quantify potential monetary benefits per project type. The project justification tool uses readily available project specific data from the user and industry research to estimate potential project benefits. Project types include: new signal installation, signal replacement, signal rehab, signal retrofit, signal retiming, LED replacement, intersection communication, software, ITS device replacement, and ITS device deployment.

Several types of project benefits are considered for each project type: safety, mobility, productivity, and energy and environment. These estimated project benefits are then compared to the estimated total project cost. This methodology provides a clear and transparent manner in which to justify a specific project, reducing concerns of inefficient use of funding resources.

Together these tools will provide for a consistent, transparent process for allocating funding in ways that will provide the most benefit and advancement.