

Project Prioritization

A Metropolitan Transportation Plan identifies projects that are necessary to handle an area's projected future traffic. The projects' construction does not happen overnight; instead it is planned and executed over a number of years. It is the responsibility of the Tyler MPO to provide a timetable for constructing projects. This chapter discusses the approach the Tyler MPO used to identify and prioritize the area's roadway projects.

PROJECT SELECTION CRITERIA

The MPO Policy Committee authorized the creation of a Project Selection Criteria Sub-Committee of the Technical Advisory Committee during the MTP adoption process in 1999. This committee was comprised of TxDOT, county, city, and MPO staff. The sub-committee developed project selection criteria which would be used for each project seeking federal funding. The MPO Policy Committee approved the project selection criteria in July 1999.

The project selection criteria are:

- ❑ Existing Traffic Volume
- ❑ Existing Level-of-Service
- ❑ Future Traffic Volume
- ❑ Future Level-of-Service
- ❑ Construction Cost Estimate
- ❑ Public Benefit
- ❑ Social and Environmental Impacts

In previous versions of the MTP the above criteria were applied to potential projects through round table discussions. Members of the Technical Advisory Committee would review the measurable factors and determine where a project ranked. A benefit to this approach was committee members were familiar with the existing network and could quickly identify new projects based on the criteria. On the other hand, bias could enter into the decision if committee members were more familiar with one project or area of the MPO over another. To eliminate this risk, a method for project prioritization that used the above criteria was developed.

The project prioritization process used in this MTP Update redefined the above criteria into five broader headers. Next, each was assigned a weighted factor to better define its importance in the decision making process.

The five areas and their weighted percentage are:

- ❑ Transportation and Circulation (35%)
- ❑ Project Costs (15%)
- ❑ Public Safety (20%)

- ❑ Environmental Impacts (20%)
- ❑ Existing Infrastructure (10%)

To prioritize a project, it would receive a score (1-10) in each of the above areas. The score a project received in each area was then multiplied by its weighed factor and totaled for its final ranking. For example, if a project scored 7 out of 10 in the area of Transportation and Circulation, 3 out of 10 in terms of Project Costs, 10 out of 10 in Public Safety, 5 out of 10 in Environmental Impacts, and a 1 out of 10 in the Existing Infrastructure area, its final score would be 6six.

$$7(35\%) + 3(15\%) + 10(20\%) + 5(20\%) + 1(10\%) = 6$$

Transportation and Circulation

Transportation and Circulation measures the impact a project will have on a roadway network in terms of LOS. Level of Service is a quantitative measure of operational conditions at a location. It is directly related to a roadway's volume-to-capacity ratio and involves assigning a letter designation ranging from A to F to classify traffic flow. A classification of LOS A indicates free flow with no travel delay time, while a LOS F is a sign of congested flow. In most urban areas, a LOS D is considered the limit of acceptable operation.

In this category, potential projects' LOS for existing conditions was compared to those after the projects' construction. In both scenarios, 2035 traffic volumes were utilized in the model. The change in LOS determines the projects' score in this category. The scale is defined below.

TABLE 13-1 RANKING SCALE FOR TRANSPORTATION AND CIRCULATION

| 1 | 3 | 5 | 7 | 10 |
|------------------|-------------------------|--------------------------|--------------------------|----------------------------------|
| No Change in LOS | Improved by 1 LOS Grade | Improved by 2 LOS Grades | Improved by 3 LOS Grades | Improved by 4 or more LOS Grades |

If a roadway's LOS improves from a LOS F to LOS B, then it LOS improved by 4 LOS grades and it receives a 10 for Transportation and Circulation ranking. Similarly, if a project improves a roadway's LOS from LOS D to LOS B, its Transportation and Circulation ranking would be 5.

This category is considered an important measure and is therefore assigned the highest weighted value in the overall prioritization formula.

Project Costs

Previously the only cost evaluated was a project's construction costs. However, this is not the only cost associated with a project. Each project will also have right-of-way (ROW) and engineering (design) costs. In some cases, these costs can significantly impact when a project is constructed. If too high, the project could be postponed until additional funds are available.

In this category, the projects' total costs were estimated and assigned a rank. Projects with significant total costs are considered undesirable and are assigned a low score. Projects with lower overall costs are ideal and therefore score higher. The scale is defined below.

TABLE 13-2 RANKING SCALE FOR PROJECT COSTS

| 1 | 5 | 10 |
|------------------------------------|--|-------------------------------------|
| Overall costs exceeds \$40,000,000 | Overall costs were between \$40,000,000 and \$10,000,000 | Overall cost less than \$10,000,000 |

Public Safety

One objective of the Tyler MPO is to improve safety on the existing transportation system by developing projects that reduce hazards and improve driving conditions. To capture this goal in the project selection process, the Public Safety category was defined.

In this category, potential projects' accident history from the last 36 months was calculated. Projects along segments of roads with higher accident histories are considered desirable. These projects are needed to improve public safety and therefore were assigned a higher score. Projects along segments of roadways with low accident histories are important, but are considered lower priorities in terms of public safety. These projects rank lower on the Public Safety scale. The scale is defined below.

TABLE 13-3 RANKING SCALE FOR PUBLIC SAFETY

| 1 | 3 | 5 | 7 | 10 |
|-------------------------|------------------------------|------------------------------|------------------------------|----------------------------|
| Crash Rate less than 10 | Crash Rate between 10 and 20 | Crash Rate between 20 and 40 | Crash Rate between 40 and 50 | Crash Rate greater than 50 |

Environmental Impacts

Environmental Impacts defines the effects a project will have to area wetlands, waters of the US, historical structures, and environmental justice (or social impacts). To rank projects in this category a thorough understanding of the area is required. Projects with high environmental impacts are not considered ideal. These projects might improve the performance of the area's transportation network, but the costs environmentally are high and therefore receive the category's lowest score. On the other hand, a project that improves the network's performance and little environmental impact are preferred. These projects receive the category's highest score of 10.

TABLE 13-4 RANKING SCALE FOR ENVIRONMENTAL IMPACTS

| 1 | 3 | 5 | 7 | 10 |
|----------------------------|---|-------------------------------|---|---------------------------|
| High Environmental Impacts | ↔ | Average Environmental Impacts | ↔ | Low Environmental Impacts |

For example, this MTP Update identifies a project along SH 110 (Beckham Avenue) between East Fifth Street and Golden Road. The project description calls to widen the roadway from

four to six travel lanes. Because of its high impact to neighboring businesses and homes, the project received an environmental impact score of one.

Existing Infrastructure

Another objective of the Tyler MPO is the preservation of its existing transportation system. The rehabilitation of an existing roadway can improve the transportation network without the impacts related with new corridors. Although one could argue this criterion is already accounted for in the Project Costs and Environmental Impacts Rankings, the Tyler MPO feels its importance allows for a separate category.

For this category, the projects' descriptions and limits were evaluated. New location projects, regardless of type, receive the lowest ranking of one. Projects involving the rehabilitation of a bridge receive a ranking of five. Finally, projects to widen or preserve existing roadway facilities are considered the highest priority and receive a ranking of 10. The scale is defined below.

TABLE 13-5 RANKING SCALE FOR EXISTING INFRASTRUCTURE

| 1 | 5 | 10 |
|--------------|--------------------------------|---|
| New Location | Bridge Rehabilitation Projects | Roadway Widening or Rehabilitation Projects |

PRIORITIZATION PROJECT LIST

A list of potential projects was initially developed through the public involvement process and input from the Technical Advisory Committee, TxDOT, the Tyler Area MPO, and local communities. The list was then evaluated following the prioritization method previously present in this chapter. The resulting prioritized federal/state projects are shown in Table 13-6. This ranked list along with the available funding dollars (from Chapter 12) will be combined to create the short-term, long-term, and illustrated project improvements lists in Chapter 14.

TABLE 13-6 PRIORITIZATION FEDERAL/STATE PROJECT IMPROVMENTS

| Project Name | Construction Limits | | Prioritization Criteria | | | | Total Score | |
|------------------------|---------------------|-------------------|-------------------------------------|----------------------|----------------------|------------------------------|-------------|--------------------------------|
| | From Limits | To Limits | Transportation & Circulation 35% | Project Costs 15% | Public Safety 20% | Environmental Impacts 20% | | Existing Infrastructure 10% |
| FM 2493 | FM 2813 | FM 346 | 10 | 5 | 5 | 5 | 10 | 7.25 |
| Spur 248 | Old Omen Road | SH 64, East | 7 | 10 | 5 | 5 | 10 | 6.95 |
| FM 14 | MLK Jr, Blvd | Loop 323 East | 7 | 10 | 7 | 3 | 10 | 6.95 |
| FM 756 (Paluxy) | Jeff Davis Drive | FM 346 | 7 | 10 | 5 | 3 | 10 | 6.55 |
| SH 155, North | US 271 North | IH 20, East | 7 | 10 | 5 | 3 | 10 | 6.55 |
| SH 31, East | Loop 323, East | FM 850 | 5 | 5 | 10 | 5 | 10 | 6.50 |
| SH 110 | 5th Street | Golden Road | 5 | 10 | 10 | 1 | 10 | 6.45 |
| FM 2493 | FM 346 | FM 344 | 7 | 5 | 5 | 5 | 10 | 6.20 |
| FM 16 | US 69 | 2.4 mi E of US 69 | 7 | 10 | 5 | 1 | 10 | 6.15 |
| US 69, North | Loop 323 | IH 20, West | 1 | 5 | 10 | 10 | 10 | 6.10 |
| Loop 323 | Bellwood | SH 31 W | 5 | 10 | 10 | 1 | 5 | 5.95 |
| SH 110 (North) | FM 849 | IH 20 | 7 | 5 | 3 | 5 | 10 | 5.80 |
| SH 64, West | FM 724 | FM 2661 | 7 | 10 | 1 | 3 | 10 | 5.75 |
| Loop 323 Extension | Loop 323, Northeast | US 271 | 3 | 10 | 7 | 3 | 10 | 5.55 |
| SH 31, West | FM 206 | FM 2661 | 3 | 10 | 3 | 7 | 10 | 5.55 |
| Spur 364 | Loop 323 | SH 31, West | 5 | 5 | 5 | 5 | 10 | 5.50 |
| SH 110 (North) | Loop 323 | FM 2016 | 5 | 5 | 5 | 5 | 10 | 5.50 |
| SH 64, West | FM 2661 | County Line | 7 | 5 | 3 | 3 | 10 | 5.40 |
| FM 16 | US 69 | Loop 49 | 7 | 10 | 1 | 1 | 10 | 5.35 |
| SH 31, East | FM 850 | County Line | 7 | 1 | 3 | 5 | 10 | 5.20 |
| SH 31, West | FM 2661 | County Line | 3 | 10 | 1 | 7 | 10 | 5.15 |
| SH 64, East | CR 220, East | FM 3226 | 5 | 5 | 3 | 5 | 10 | 5.10 |
| SH 110 (North) | FM 2016 | FM 849 | 5 | 5 | 3 | 5 | 10 | 5.10 |
| SH 110 | Hagan Road | Troup City Limits | 5 | 5 | 1 | 5 | 10 | 4.70 |
| US 271 | Loop 323 | IH 20, East | 1 | 5 | 3 | 10 | 10 | 4.70 |
| IH 20 | SH 110 | US 271 | 3 | 1 | 5 | 7 | 10 | 4.60 |
| IH 20 Frontage Roads | Loop 49 | CR 431 | 7 | 10 | 1 | 1 | 1 | 4.45 |
| US 69 at FM 346 | | | 5 | 10 | 1 | 1 | 5 | 4.15 |
| FM 14 | Loop 323, North | IH 20 | 1 | 5 | 7 | 3 | 10 | 4.10 |
| SH 155, North | IH 20 East | County Line | 5 | 1 | 3 | 3 | 10 | 4.10 |
| SH 64, East | FM 3226 | County Line | 5 | 1 | 1 | 5 | 10 | 4.10 |
| Airport / Loop 49 Spur | Loop 49, West | Tyler Airport | 1 | 10 | 1 | 1 | 1 | 2.35 |