Department of Transportation

Missouri's Planning Framework for Transportation Decision-Making

Practitioner's Guide

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Introduction

Missouri is facing many transportation challenges. There are significantly more transportation needs identified in the state's Long-Range Transportation Plan than there are funds to address them. Missouri must weigh the need for a balanced and efficient transportation network against many other competing societal needs. Transportation is key to the nation's economic well-being and global competitiveness. The Missouri Department of Transportation (MoDOT) and its transportation partners realize effective planning and decision-making are vital when choosing priorities for transportation investments.

The Missouri Highways and Transportation Commission's (MHTC's) January 2003 adoption of a more objective method for distributing transportation funds set in motion the development of a plan for making better investment decisions. The previous funding-distribution policy evolved over a period of years and was often changed in response to short-term decisions. The funding-distribution method targets resources to take care of Missouri's $60+ billion transportation network. As MoDOT staff worked with planning partners to develop the funding-distribution method, concerns regarding local involvement, predictability, consistency and accountability in decision-making surfaced.

What is the Planning Framework?

Missouri needed a new, more transparent planning process reflecting a shared transportation vision to identify the state's highest-priority transportation needs. A vision describes how the transportation system should look in the future. ***MoDOT set out to develop a process in which local officials and the general public could understand how decisions are made, could participate in the process and could influence the decisions.***

The MHTC directed MoDOT staff to address the concerns mentioned above by developing a planning framework that –

- defines each step of the planning and decision-making process and how they fit together,
- defines the role of local officials and the public in each step of the planning and decision-making process, and
- includes processes for prioritizing needs and projects to insure a degree of statewide consistency while allowing regional flexibility.

This document explains MoDOT's planning framework for guiding future planning and decision-making. The planning framework provides the means for a more objective approach to transportation decision-making and is based on MoDOT's public participation philosophy.

The Missouri Department of Transportation
will work side-by-side with local officials
to make transportation decisions.
Missourians will have opportunities
to influence decisions before they are made.

However, these decisions are complex and are based on values and environmental factors that change frequently. The planning framework relies on the right people being involved in making decisions and adjusts to these changing factors. It recognizes that planning is as much art as science, or in other words, that both objective and subjective criteria are part of transportation planning decisions.

MoDOT will work closely with and be responsive to local officials and other planning partners as it fulfills its constitutional responsibility of building and maintaining the state transportation system. The planning framework's primary goal is to identify opportunities for local officials' and the public's involvement at all stages of the planning process. This will optimize local official and public influence in decision-making.

The planning framework will allow MoDOT to accomplish the following.

1. **Increase the influence and involvement of local communities in decision-making**
   Local communities are in a unique position to evaluate and prioritize needs and projects and to ensure state investments are linked with other local and private investments. The following is an excerpt from a proposal for funding allocation by a work group of the Missouri Association of Councils of Governments (April 4, 2002)

   > "if local communities have a greater voice in determining that their highest priority needs are being addressed in the most cost-effective manner, there is apt to be somewhat less tension in the exact geographical distribution of funds. A decision-making partnership between state and local leaders is critical to making good choices with limited resources."

   The framework requires extensive involvement of regional planning partners at each step of the planning and decision-making process. Local official involvement will take place before decisions are made – in a collaborative process – rather than seeking input after decisions are made.

2. **Increase predictability in the planning and decision-making process**
   While MoDOT has sought input from stakeholders when developing plans and project proposals, their involvement is inconsistent across MoDOT's district borders. The planning framework establishes a clear and consistent process outlining how and when planning and programming decisions are made and when local officials and the public can most effectively influence these decisions.

   The framework establishes a process outlining how and when transportation investment decisions are made and when Missourians can most effectively influence these decisions.

3. **Promote accountability and flexibility in the planning and decision-making process**
   The planning and decision-making process ensures commitments are kept. It includes a tool that provides data to support transportation decisions, while allowing flexibility to address regional concerns.

MoDOT is accountable to Missourians for making the best use of their transportation dollars. Transportation decisions are made using data about the transportation system and input from those affected. The framework details whom to involve and what outcomes are expected; however, it also includes flexibility for local areas to determine how these activities should be done. The framework also includes a system of checks and balance to make certain the process is working.

4. **Ensure the integrity of Missouri's transportation system**
   The planning framework allows MoDOT and other regional and local transportation agencies to make sure limited transportation dollars are spent in the best possible way, and meet strategic transportation goals.

MoDOT's public participation philosophy is the foundation for transportation decision-making regardless of mode. However, the prioritization processes have been developed to primarily address roadway and bridge funding categories as set forth in MoDOT's funding-distribution method. They do not address projects from all modes of transportation; however, there is regional flexibility to consider multimodal projects. Funds designated for other modes in Missouri are distributed according to processes defined for those modes or are appropriated for specific projects.

Missouri's state road fund can only be used for roadways and bridges. Missouri has not traditionally allowed federal highway trust funds to be used for other modes. MoDOT recognizes that if dedicated funding is secured for multimodal projects in the future or if existing funds are allowed to be flexed for multimodal projects, the processes in the framework will need to be updated. In the interim, if a region places a high priority on a multimodal solution, MoDOT will work with planning partners to find the best way to fund it.

The Role of MoDOT's Planning Partners and Missouri's Citizens in the Planning and Decision-Making Process

Missouri's citizens use transportation daily to carry out necessary business and for recreational and entertainment purposes. They have first-hand knowledge of the character and functionality of the transportation system that is helpful in planning and decision-making.

Through public involvement, Missourians have a say in how transportation dollars are spent. There are many ways Missourians can get involved. The most common is the public meeting. MoDOT holds public meetings throughout the planning and project development processes. These meetings are held in communities around the state specifically to gather input from the general public. MoDOT employees attend to explain what's going on, answer questions and seek comments. Another example is an advisory team. MoDOT sometimes establishes citizens' groups that help guide a project's development.

MoDOT's improved planning process offers other ways for Missourians to have a say. MoDOT will work closely with local officials to meet community needs. Citizens have access locally to planning organizations, city and county officials and elected officials. By working with local

officials or by participating in public meetings, citizens have a say in MoDOT's planning process.

The general public is involved in two ways.

- By electing their local officials who represent them on regional planning commissions' (RPC) and metropolitan planning organizations' (MPO) boards of directors
- By direct contact with MoDOT, MPOs, RPCs or local officials

Local officials' involvement is MoDOT's primary focus of the improved planning processes. These officials, who are elected by the general public, join together regionally to form boards of directors of Missouri's MPOs and RPCs. MPOs represent urbanized areas and are responsible for transportation planning within their areas. RPCs represent multi-county rural regions and are charged with coordinating functions of local governments, including transportation planning. Missourians depend on MoDOT and their local officials to work together to make the best use of limited transportation funds. Local officials have a unique understanding of the needs and desires of their communities at a grassroots level.

MPOs and RPCs have a distinct role in the planning and decision-making process. The role varies depending on the type and size of the agency. MoDOT's link to local officials is the boards of directors of Missouri's MPOs and RPCs, who are MoDOT's planning partners. The framework ensures appropriate participation and states that MoDOT will assist to strengthen local official representation if needed. For transportation planning purposes, there are two types of regional planning agencies.

1. **Metropolitan Planning Organizations' (MPO)** role in the transportation planning process is defined in federal law. MPOs are responsible for many planning activities within their regions, including long-range transportation planning, comprehensive planning and transportation programming. In MPO areas, transportation decisions affecting the state road system are made cooperatively between the state department of transportation and the MPO. There are two different classifications of MPOs.
   a. <u>MPOs with a population between 50,000 and 200,000</u>
      In Missouri, these are in Columbia, Jefferson City, Joplin and St. Joseph
   b. <u>MPOs with a population greater than 200,000</u>
      These are classified as Transportation Management Areas (TMAs). In Missouri, TMAs are the Kansas City, St. Louis and Springfield regions. All MPOs, under federal law, have authority for transportation planning and programming. TMAs, however, are larger in size and are accorded a greater influence over project selection. TMAs in Missouri have transportation funds allocated directly for their use through MoDOT district offices. This affords them greater flexibility in project prioritization and selection.

2. **Regional Planning Commissions (RPCs)** are multi-county areas charged with coordinating functions of local governments including transportation planning, comprehensive and strategic planning, economic development assistance and emergency planning. RPCs are a vehicle through which cities and counties in Missouri's rural areas come together to work on common transportation issues. State

statutes govern the formation and function of RPCs, whose boards of directors are comprised of local officials or their designees. These officials determine policy and make decisions for the organization. Each RPC also has a Transportation Advisory Committee (TAC), whose membership is appointed by the board of directors. TACs provide a link to the local officials and representation of citizens in the rural parts of Missouri. MoDOT coordinates with RPCs to determine regional priorities for transportation. There are 19 RPCs representing all 114 counties in Missouri.

A map of Missouri's MPOs and RPCs can be found in Appendix 1.

Transportation decisions will be made in collaboration with planning partners using MoDOT's public participation philosophy.

Developing materials or making decisions and then seeking comments by planning partners is not acceptable. When the term "work with" is used throughout this document, this philosophy must be used. Districts will develop memorandums of understanding (MOUs) with MPOs and RPCs detailing how all parties will work together in each step of the planning process. Further discussion of these MOUs can be found in the Implementation Plan section.

Each step in the planning and decision-making process includes opportunities for public involvement. All MoDOT districts statewide will follow the same decision-making timetable for developing the construction program and are committed to involving the public in this process.

What the Law Says

Following are summaries of federal and state laws regarding local official involvement.

Non-Metropolitan Areas – Federal Laws
(Title 23 CFR, Part 450.208 and 450.212(i))

For areas outside of MPO boundaries (rural areas), transportation planning must follow a process that includes consultation with local officials who have jurisdiction over transportation. Consultation means one party confers with another identified party and, prior to taking action, considers that party's views. Recent updates include more specific language stating, "The state's non-metropolitan local official consultation process must be separate and discreet from the state's public involvement process."

MoDOT will be revisiting this process within two years of process implementation and at least once every five years after that. MoDOT will have a review and comment period, of at least 60 days, about the planning process following each review. This complies with federal requirements for rural local officials' consultation.

Metropolitan Planning Organizations – Federal Laws
(Title 23 CFR Part 450.310)

For MPOs, a memo of understanding with the state is required, agreeing to and indicating a willingness to support a cooperative transportation planning process. The state and the MPO

must work together to develop the unified planning work program, transportation plan and the transportation improvement program (TIP). When developing the transportation plan and the TIP, the state and the MPO are required to coordinate their activities with other transportation providers in the MPO boundary. Examples include regional airports, transit service providers, maritime port operators and rail freight operators. The MPO board is required to approve its transportation plan, and both the board and the state's governor are required to approve the TIP.

Regional Planning Commissions (Non-Metropolitan Areas) – State Laws
(RsMo 251.320)

State statutes establish rules for RPCs. The rules must be in accordance with resolutions approved by the local governments' governing bodies, representing at least half the region's population.

The RPC is authorized to adopt a comprehensive plan for the region's development. The comprehensive plan outlines recommendations for all types of development and may include existing infrastructure and future transportation plans. The comprehensive plan's purpose is to guide the region's development in accordance with existing and future needs. At this time, not all RPCs develop comprehensive plans.

MoDOT Goes Beyond the Law to Make Better Decisions

Using the improved planning process MoDOT will exceed federal and state legal requirements for involving local officials and the public in the planning and decision-making process. MoDOT will establish a partnership with the local officials around the state using MPOs and RPCs as the conduit when appropriate. In urban areas, these collaborative relationships are already established, and MoDOT will seek to strengthen them. In many rural areas, these collaborative relationships already exist and are growing stronger. Where partnerships do not exist, MoDOT will work with local officials to establish them.

Quality Assurance/Quality Control Process

The Quality Assurance/Quality Control process ensures MoDOT and its planning partners fulfill their roles in the planning process. In general, MoDOT's Transportation Planning office performs quality assurance and MoDOT districts perform quality control. RPCs and MPOs will review a report compiled by Transportation Planning summarizing planning activities statewide.

Transportation Planning staff will meet with districts annually to review each process. During the planning framework implementation, Transportation Planning will meet with districts more frequently to make sure there is correct and timely implementation. District staff will be responsible for using the improved planning process components, and Transportation Planning will be responsible for the planning process oversight.

The intent of the QA/QC process is to ensure adherence to the planning framework without lengthening the planning timeline. Many of the requirements are currently being administered through work with MPOs and RPCs. MoDOT districts are the lead contacts for local officials,

and MoDOT Transportation Planning staff at General Headquarters will continue to support district planning activities and guarantee statewide consistency.

Following are goals of the Quality Assurance/Quality Control Plan.

- Ensure communication between all planning partners and MoDOT
- Ensure consistency in planning activities both on a regional and statewide basis
- Ensure planning partners' understanding of the decision-making process
- Ensure involvement of planning partners in decision-making process
- Ensure programming decisions are documented
- Ensure ongoing flexibility in the planning and decision-making process

MoDOT staff will document planning activities that demonstrate the appropriate involvement of planning partners. This documentation may include, but is not limited to, the following.

- Information shared with partners
- Meeting minutes
- Correspondence
- District transportation improvement programs coordinated with partners
- Documentation of programming decisions
- Changes in prioritization processes
- Language demonstrating how each of the above goals are met

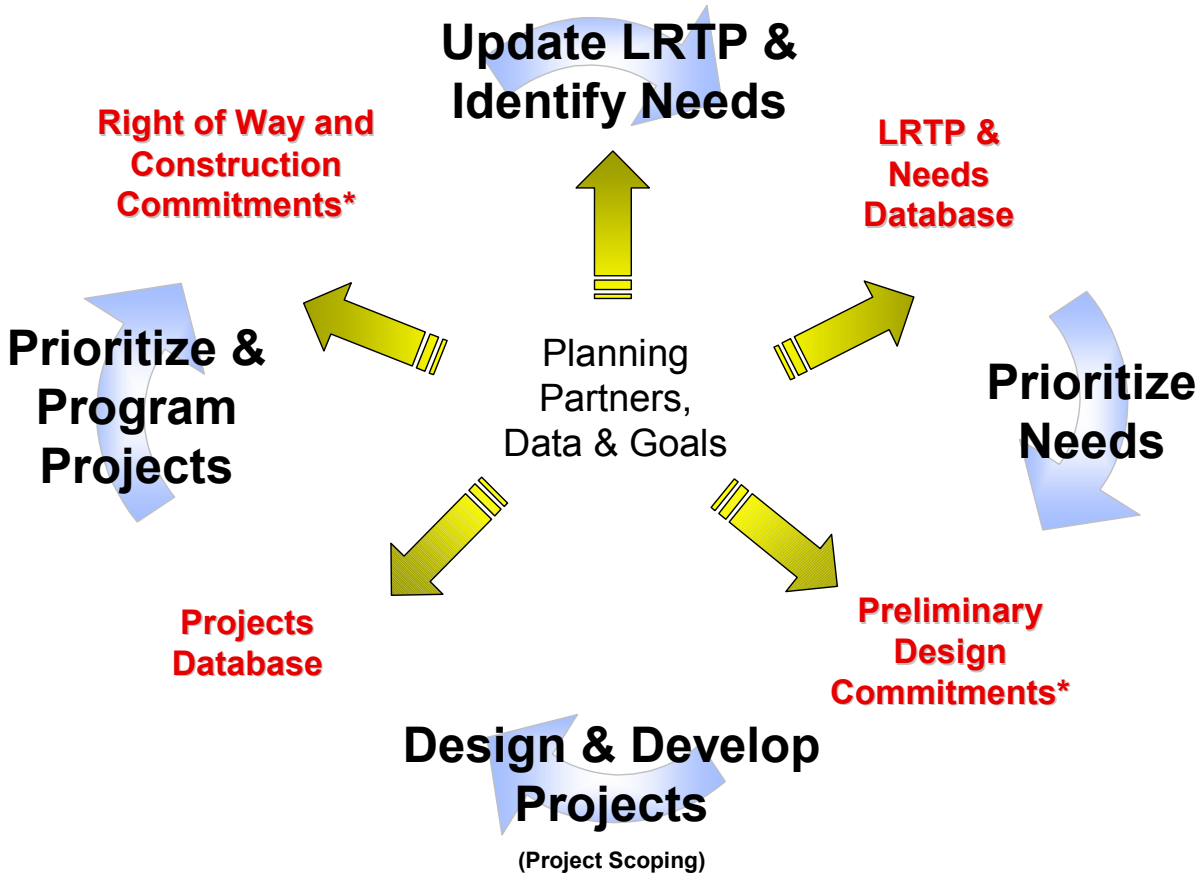
These documents will be compiled annually in planning activity reports. Transportation Planning staff reviews regional planning reports, and MoDOT district offices review statewide planning reports. MPOs and RPCs review both the statewide report and regional reports applicable to their region. The planning reports ensure the planning and decision-making process remains transparent. The review of these reports is the basis for tailoring planning-partner involvement to ensure all agencies are fulfilling their roles in the decision-making process. MoDOT will work with the planning partners to address any concerns and make certain the processes are working as intended.

The QA/QC process will be reviewed and updated annually, at first, and then in conjunction with the statewide LRTP update every three to five years.

The Planning and Decision-Making Process

The transportation planning process, shown in Figure 1, can take up to 20 years for a project to go from needs identification through project development and construction. Each step in MoDOT's planning process takes decision-makers closer to determining how to invest Missouri's limited transportation dollars. The planning process is a continuous cycle, and at any given time, there are multiple needs or projects at each step in the process. The four outer arrows represent processes that have been developed as part of the framework. The text between the arrows represents the key products of these processes. All steps require continuous participation from local officials and the public.

The planning framework defines both the technical aspect (what the planners and engineers need to do to make it happen) and the public involvement aspect (who needs to be involved – and to what degree) as decisions are made.



*** Listed in the Statewide Transportation Improvement Program (STIP)**

Figure 1 - <u>The Transportation Planning Process</u>

Long-Range Transportation Plan

Federal law requires Missouri to develop a long-range transportation plan (LRTP) to set its transportation direction and guide its decisions. The previous plan was adopted by the MHTC in October 2001. An update will be completed in early 2005.

<u>What is the LRTP and what is its purpose?</u>

The LRTP documents Missouri's transportation vision shared by citizens, local officials and stakeholders. This vision helps set transportation investment goals, which form the foundation for transportation decision-making. These goals are consistent with the seven planning factors outlined in TEA-21 (1998 – Title 23, Section 1204. Statewide Planning). The prioritization processes for both needs and projects are based on these goals.

Following are Missouri's transportation investment goals.

- Ensure **safety** and security in travel, decreasing the risk of injury or property damage on, in and around transportation facilities.
- **Take care of the existing system** of roads, bridges, public transportation, aviation, passenger rail and ports.
- **Relieve congestion** to ensure smooth flow of people and goods throughout the entire system.
- Broaden **access to opportunity** and essential services for those who cannot or choose not to drive.
- Facilitate the **efficient movement of goods** using all modes of transportation.
- Ensure Missouri's continued **economic competitiveness** by providing a safe, reliable and efficient transportation system.
- **Protect Missouri's environment** and natural resources by making investments that are not only sensitive to the environment but that also provide and encourage environmentally beneficial transportation choices.
- Enhance the **quality of Missouri's communities** through transportation.

The LRTP update will include a comprehensive inventory of system needs. It will also include a financially constrained component outlining Missouri's highest priority needs and projects. The processes in the planning framework will be used to develop the LRTP update.

How often is the LRTP updated?

MoDOT will update the LRTP every three to five years. MPOs are currently required to update their LRTPs every three years. It is anticipated that this cycle will be increased to five years in the reauthorization of federal transportation legislation. MoDOT and Missouri's MPOs may use the same cycle length for LRTP updates, but the schedules for the updates will vary.

Schedule for completion – how long does updating the LRTP take?

MoDOT allows 12 to 18 months to update the LRTP.

Fiscal-constraint requirements for the LRTP.

While MPO long-range plans are required to be fiscally constrained, state long-range plans are not. However, MoDOT will include a fiscally constrained component in the LRTP. The LRTP update will use input from the public to develop a priority list of major projects that can be funded with current revenue projections over the next 20 years. It will also define the next tier of major projects to be funded if additional transportation dollars become available.

Participation guidelines – who should be involved in updating the LRTP and to what extent?

LRTP public involvement will concentrate on developing Missouri's shared transportation vision and will use a public involvement plan that works to capture the public's opinion on transportation issues and needs. The plan will target all levels of public involvement including MPOs and RPCs, local officials, legislators, stakeholders and the general public.

The current LRTP details the physical components of the roadway system – pavements, bridges, shoulders and attributes such as striping, lighting and roadsides. Innovative measures were taken to determine what the public expects from each of those components. Standards were developed and costs were estimated for bringing the entire state system to a condition the public defined as acceptable. However, the costs for this ideal transportation system are far more than Missouri's transportation funding.

The next LRTP will explore operational aspects of the transportation system. These include how efficiently the system operates, the level of mobility and accessibility it provides, how safe it is and how well all modes are connected. Public expectations for these components will be included as well.

MoDOT will work with Missourians to shape the transportation vision for Missouri. MoDOT will use this shared vision to refine the course for transportation in the future and set goals and policies to take the system toward the vision. Public involvement for the LRTP will be focused on developing this shared vision and building informed consent among Missourians for the best way to achieve the vision. Informed consent can be reached when those who are affected –

- understand that there is a serious problem that needs to be addressed,
- agree that the agency addressing the problem is the right agency to do so,
- understand that the process used is reasonable, responsible and sensible, and
- know that the agency is listening and cares about potential negative impacts solving the problem could cause.

MoDOT will work with Missourians to determine which components are high priorities and which are not. Financially constrained system standards will be developed based on what the public feels should be the focus of existing transportation funding.

MPO LRTPs include policy development, fiscally constrained needs identification, public involvement and conformity with air quality regulations. The content of these MPO plans is similar to the statewide plan. MPO plans include broad public outreach and require approval of the MPO board of directors, which is comprised of the region's local officials. In general, items in MPO and state LRTPs are consistent. Resources will be allocated only to the needs and projects agreed upon by both the MPO and the state.

MoDOT will work with RPCs to develop regional transportation plans (RTP) that include long-term goals, needs identification and public outreach. These plans require approval of the RPC board of directors, comprised of local officials, but they do not require the same level of analysis as MPO LRTPs. RTPs will be considered in the development of the state LRTP.

Who facilitates the LRTP update?

MoDOT's Transportation Planning office is responsible for developing the LRTP.

Needs Identification

What is needs identification, and what is its purpose?
There are varied transportation problems, often called needs, on Missouri's transportation system. Identifying Missouri's transportation needs is a continuous process and crucial for successful planning. Needs are identified from a variety of sources. Although it is not feasible to address all needs, MoDOT has an obligation to consider all identified needs. Consideration of a need is not a commitment to construct a project.

There are two levels of needs identification.

1. **Regional** – MoDOT districts work with planning partners to identify regional transportation needs. For example, MoDOT's Transportation Management Systems data are updated regularly with pavement and bridge condition data that identifies rehabilitation and reconstruction needs; MoDOT area engineers, working with local officials, identify bridge and roadway needs; MoDOT customer service centers track calls regarding specific problems, such as maintenance or safety needs; or citizens approach their legislators with concerns about a stretch of roadway where there has been multiple fatalities. Specific methods and timeframes are discussed in the implementation section.

2. **Statewide** – MoDOT conducts a formal needs identification process when updating the statewide LRTP. MPOs identify needs as they develop their long-range transportation plans. Likewise, RPCs identify needs for their region. MPO and RPC needs of statewide significance are included in Missouri's LRTP.

Two types of needs
In the planning framework, needs are categorized in two ways:

- **physical system condition needs** and
- **functional needs**.

Physical system condition needs relate to the condition of pavements and bridges. Examples include rough cracking pavement or potholes on a roadway surface. Effective management of physical system condition needs includes preventive maintenance treatments designed to keep the system in good condition.

Functional needs relate to operational aspects of the transportation system. Examples include high-congestion or high-accident locations, intersections that do not accommodate truck movements or mobility needs connecting people to jobs and services.

MoDOT uses a needs' database to track Missouri's transportation needs.

How often is needs identification updated?
Regional needs are continuously updated at the district level. Statewide needs are documented in MoDOT's LRTP.

Schedule for completion – how long does needs identification take?
There is no time constraint for regional needs identification. However, only identified needs will be prioritized each year for preliminary engineering in the Statewide Transportation Improvement Program (STIP). The statewide needs documentation is completed within the 12- to 18-month timeframe of the LRTP development.

Fiscal-constraint requirements for needs identification.
Needs identification is not financially constrained. The intent is to develop a list of all possible needs for evaluation.

Participation guidelines – who should be involved in needs identification and to what extent?
Public involvement for statewide needs identification is addressed in the LRTP's public involvement plan, and districts will work with the MPOs and RPCs to identify regional needs.

MPOs develop regional long-range transportation plans, which include needs identification. RPCs generally use their TACs to conduct needs identification for their regions. RPCs provide input on the needs in the rural regions of the state that MoDOT can use as statewide needs are developed. MoDOT will be working with RPCs to develop regional transportation plans that include a needs identification component.

Every transportation need identified in MPO LRTPs and RPC RTPs will be included in MoDOT's identification of regional and statewide transportation needs.

Who facilitates needs identification?
MoDOT employees, in cooperation with planning partners, facilitate needs identification. On an informal basis, MoDOT's district staffs such as district engineers, area engineers, project managers or district planning staffs learn of new needs or receive input regarding other needs through numerous discussions they have with the public. Districts also work with MPOs and RPCs to identify needs. MoDOT's Transportation Planning Office at General Headquarters when updating the LRTP facilitates statewide needs identification through a more formal process.

QA/QC for needs identification
Each MoDOT district will be responsible for compiling elements of the needs identification. This includes both functional and physical system condition needs. Programming packets will be given to district staff to share with MoDOT planning partners at the beginning of each programming cycle. This packet contains bridge, pavement and traffic data. The districts will use this data, along with other information in their regions, to work with the planning partners to identify needs.

The following data, summarizing districts' needs, will be available. .

1. Origin of need, i.e. MoDOT, elected official, MPO, RPC, concerned citizen
2. Location of need, i.e. Route 19 and letter Route Z intersection
3. Perceived need, i.e. public entity, individual perceives the solution to be a new intersection, new bridge, signalization

MoDOT's needs database is currently under development. This database will house identified needs for the entire state and will be shared with MoDOT's planning partners. When needs have been identified, districts will begin needs prioritization.

Needs Prioritization

After identifying needs, they are prioritized to ensure MoDOT works to solve the most important transportation problems first. All identified needs will be prioritized using the processes discussed below.

What is needs prioritization and what is its purpose?

Needs prioritization is based on Missouri's transportation investment goals. MoDOT districts will work with planning partners annually to prioritize regional needs. Statewide needs will be prioritized when MoDOT's LRTP is updated. Both regional and statewide needs will be prioritized using the processes established in the framework, which are primarily based on data.

Needs prioritization overview

The two types of needs, physical system condition needs and functional needs, will be prioritized using separate processes. Figures illustrating these processes can be found in Appendix 3. Data from Transportation Management Systems will be used to complete the objective factors included in these processes. For additional subjective factors, input will be sought from the RPCs and MPOs.

MoDOT will work with RPCs and MPOs to do the following.

1. **Determine the weights for each transportation investment goal**
   The weights for all transportation investment goals must total 100 percent. General guidance is given for each goal's range of weighting; however, there is some flexibility for districts and local officials to determine appropriate weights for their regions. There may be instances where certain goals receive a zero weighting.

2. **Determine the appropriate factors and their point values under each transportation investment goal**
   For each weighted transportation investment goal, the allowable points must total 100. There are recommended factors for each goal and a maximum point value for each factor. Additional factors may be added under "District Factors/Flexible Points" for district flexibility.

   If districts choose not to use any additional factors, they can allocate the "District Factors/Flexible Points" to the factors already listed. A more detailed explanation of each factor can be found in Appendix 5. Each district must submit its finalized process to MoDOT's Transportation Planning through the Quality Assurance/Quality Control process for review.

3. **Districts provide scores for the objective factors based on data -- (note: A computer program will be available to help automate this process.)**

4. **Districts will work with planning partners to determine ratings for subjective factors**

5. **After rating all prioritization factors for a particular need, a total score is calculated as follows --**
    - Multiply each investment goal score by its weight to determine the weighted score for each investment goal.
    - Add the scores for all applicable investment goals to determine the overall need score.

6. **The final step is to place needs in priority categories -- the method used for this step will be established by the MOU**
    - **High** – Resources are focused on addressing these needs first. They are selected first for programming preliminary engineering.
    - **Medium** – These needs may be addressed as additional resources become available.
    - **Low** – No work is in progress to address these needs at this time.

The high-priority needs list is fiscally constrained to about 10 years of funding and is not a commitment to design or construct projects. Each time needs are prioritized existing needs will be re-evaluated. Some high-priority needs may never be designed or constructed due to prohibitive costs, changing priorities or other reasons. Needs from the high-priority list will be selected for project scoping.

In future years, each district will be responsible for reviewing steps 1 and 2 with local officials and making revisions as needed. Documentation of these changes and those involved must be provided to Transportation Planning under the Quality Assurance/Quality Control Process, outlined in the implementation plan.

Physical system condition needs

Physical system condition needs relate to the condition of pavements and bridges. Examples include rough cracking pavement or potholes on a roadway surface. Effective management of physical system condition needs includes preventive maintenance treatments designed to keep the system in good condition. The physical system condition needs prioritization process found in Appendix 3 will be used to prioritize physical system condition needs statewide (in the LRTP update) and at the regional level. It applies to all areas of Missouri including TMAs.

Functional needs

Functional needs are categorized as improving an operational aspect of the transportation system. The Functional Needs Prioritization Process found in Appendix 3 will be used to prioritize functional needs. It does not apply in TMA areas, where the TMA will work with the district staff to develop a regional process for prioritizing functional needs.

The needs prioritization processes should not be used as a "black box" to dictate the programming of major investment studies and engineering work. Instead, they are tools used by MoDOT's planners as they facilitate planning partners' participation to determine the highest-

priority needs. Other factors such as funding availability, staff resources and budget, and the practical potential to address the need are all part of the decision-making process for programming preliminary engineering work and planning studies.

Needs prioritization is related indirectly to the construction budget. Until the project specifics are defined, it is difficult to estimate the cost for a need's solution. However, most needs will lend themselves to a type of project that will best fit a single funding category. Therefore, it is important for the districts and their planning partners to consider the funding levels of these categories when selecting needs for further design or study.

How often is needs prioritization updated?
Statewide needs will be prioritized concurrent with MoDOT's long-range transportation plan update every three to five years.

Districts work with planning partners to prioritize needs on an annual basis. This process should be done concurrently with project prioritization and take approximately six months. Critical emerging needs identified throughout the year should be prioritized as they arise.

Schedule for completion – how long does needs prioritization take?

- Months 1-2: Review and adjust needs prioritization processes if needed
- Months 3-4: Gather data necessary for prioritization. Work with planning partners to get their input for the process.
- Months 5-6: Complete the process and review results with planning partners.

Fiscal-constraint requirements for needs prioritization.
Needs prioritization is not constrained financially, but the high-priority needs list is constrained to approximately 10 years of construction funds. This constraint is intended as a guideline and not an exact figure. Districts will need to assume a probable solution for the need and order-of-magnitude costs to apply this financial constraint. Needs selected for preliminary engineering will be taken from the high-priority needs list.

The number of needs selected for scoping is limited to an appropriate amount for district resources. Each time needs are prioritized existing needs will be re-evaluated. Some high-priority needs may never be designed or constructed due to prohibitive costs, changing priorities or other reasons.

Needs whose potential solutions are of a magnitude that cannot be funded within a five-year timeframe may not fit well into this constraint. A group called the Rural Major Projects Task Force (see Appendix 4) will program these larger-scale needs.

Participation guidelines – who should be involved in needs prioritization and to what extent?
Using the needs prioritization processes, districts work with local officials through MPOs and RPCs to determine the highest-priority needs. Some factors in the needs prioritization process are subjective in nature and require input from planning partners. Districts will work with local officials to cooperatively rate the subjective factors and discuss the objective factor scores for regional-level needs.

In the MPO areas, needs are prioritized through the MPO LRTP process. Districts and MPOs will work together to determine which needs in the region are most crucial to address. This will be done on an annual basis for programming project-scoping work and every three to five years when the regional LRTP is updated. When the prioritized needs list has been adopted by the MPO board of directors, it will be recognized by MoDOT as the region's highest-priority needs.

RPCs currently use their TACs for the conduit to work with districts to prioritize needs in rural regions. Ideally, when an RPC develops a regional transportation plan it provides an appropriate starting point for prioritizing the rural region's needs. This will be done on an annual basis for programming project-scoping work and every three to five years when the RTP is updated. After the prioritized needs list has been adopted by the RPC board of directors, it will be recognized by MoDOT as the region's highest-priority needs.

Who facilitates needs prioritization?

MoDOT's district planning staffs facilitate the regional-level needs prioritization process, in cooperation with the Transportation Planning office at MoDOT's General Headquarters. Transportation Planning facilitates the formal statewide needs prioritization process through the LRTP update.

QA/QC for needs prioritization

Districts will work with planning partners to reach informed consent concerning identified needs. Districts will also review needs prioritization processes each year and revise them, if necessary, in cooperation with local officials and planning partners. The revisions' documentation will be provided to the long-range planning coordinator in Transportation Planning as part of the QA/QC process.

Districts will work with planning partners to reach informed consent regarding needs prioritization. Each district will compile a needs list to evaluate through the appropriate needs prioritization process. When the highest needs have been prioritized, these needs will be fiscally constrained to approximately double the expected funding for a five-period. Districts should use their best judgment when estimating costs for needs. This fiscally constrained list will be eligible to move forward to the project-scoping process.

Each district will be responsible for documenting all discussions and meetings with its planning partners regarding needs prioritization. The documentation should include the prioritized needs, rankings and steps the district took to reach informed consent with its planning partners.

Design and Develop Projects (Project Scoping)

What is project scoping, and what is its purpose?

Developing a project is called project scoping. This is a process to define transportation needs and to determine the appropriate means for addressing the needs. It involves determining the root causes of the transportation problems; developing a range of possible solutions for the problems; reviewing the social, economic, energy and environmental impacts; evaluating and

choosing the best solutions; setting the projects' physical limits; accurately estimating the projects' cost; and forecasting the projects' delivery schedule. The scoping process helps determine the most complete, cost-effective solutions early in the project development process.

The purpose of project scoping is to develop the most complete, cost-effective solution(s) early in the project development process. This is foundational to avoiding major design changes, large estimate adjustments and last-minute corrections previously overlooked or unaccounted for in project development. With proper project scoping, such changes will be minimized and will have reduced impacts on the overall project. Implementation of project scoping in all projects will lead to a more balanced, consistent construction program.

How often is project scoping updated?

Scoping projects has always been done. However, the process was stretched out over the life of the project, from concept to construction, leaving opportunities for discrepancies and financial fluctuation. MoDOT made changes in the scoping process in the spring of 2003 to make certain that appropriate scoping measures were addressed early on in the project life, prior to construction work commitments in the Statewide Transportation Improvement Program (STIP). Developing a project scope is not tied to a specific programming deadline. It is dependent on the nature and complexity of the project. There is not an established schedule for updating the project-scoping process. It is an adopted MoDOT policy that can be adjusted if needed.

Schedule for completion -- how long does project scoping take?

Solutions developed in the project-scoping process can vary in terms of timeline, costs and other agency and public involvement. MoDOT field personnel may be able to address some needs in a relatively short timeframe. Other needs may require years of conceptual and environmental groundwork.

Fiscal-constraint requirements for project scoping

The project-scoping process is indirectly fiscally constrained. This is because the amount of needs selected for project scoping is based on available construction funding. Since the need's solution is not completely identified when the project-scoping process begins, there may be needed adjustments in the volume of scoping projects.

Participation guidelines – who should be involved in project scoping and to what extent?

Project scoping includes those needed to accurately define the needs and determine the appropriate solution. This may include many disciplines within MoDOT, other state and federal agencies; transportation partners such as local officials, MPOs or RPCs; and the transportation customers – the public. Some of these individuals might be asked to join the project core teams, which is the multi-discipline group that guides a project's development. The MOU for the region will include guidance for planning partner involvement during project scoping.

The public's involvement in defining the needs and determining the appropriate solutions will take several forms. The public may actually initiate the investigation of needs by contacting MoDOT or its planning partners. The public, through its local officials, has representation in the scoping process. As project-scoping teams develop public involvement plans for specific projects, the public will have further opportunity to review concepts and provide input.

Guidance for planning-partner involvement during project scoping will be developed during the framework implementation.

Who facilitates project scoping?
MoDOT's district transportation project managers generally lead the project-scoping process. There could be large-scale project-scoping work done at the statewide level led by the MoDOT headquarters' Project Development office, such as the Interstate 70 study. After receiving prioritized needs and pertinent information from planning, the project manager is responsible for the formation of the project core team, facilitating the environmental and project-scoping process and coordinating the public involvement process with the district public information and outreach manager. The project manager initiates, organizes and leads necessary team and public meetings. At the end of the project-scoping process, the project manager will provide a detailed scope and project estimate for programming a specific project in the STIP.

QA/QC for project scoping
Each district planner will be responsible for assisting the project manager in identifying the appropriate planning partners to participate in the project-scoping process. It is important to involve the appropriate people in the projects' core team. The intent is for planning partners to be represented for core team activities or be a resource to review information during the project-scoping process, depending on the project.

The project manager will be the lead for the project, and the planner will assist as needed. Planners will assist the project manager in focusing on the original need(s) being scoped. Only projects evaluated through the scoping process can be programmed. Prior construction commitments will not be re-evaluated using the project-scoping process.

Project Prioritization

What is project prioritization, and what is its purpose?
The project prioritization processes are primarily based on data and serve as a starting place for determining the best candidates for funding. Project prioritization is a tool that shows decision-makers how projects eligible for funding compare to one another. This process is not a black box that generates a ranked list of Missouri's next transportation projects. Rather, the prioritization processes are a starting place for determining the best candidates for funding. Other information must be considered before projects can be programmed. This information is discussed in the programming guidelines section.

There are separate project prioritization processes for each category in MoDOT's funding-distribution method, which is shown in Appendix 2.

A list of the project prioritization processes is below. The level at which each process is applied is noted in parentheses.

- Safety (MoDOT district)
- Taking Care of the System (MoDOT district)
- Major Projects: System Expansion (statewide)
- Regional and Emerging Needs Projects (region / MoDOT district)

- Interstates (statewide)

Each process is based on transportation investment goals from the LRTP.

Each project is prioritized using the appropriate prioritization process. This will generally correspond to the project's primary funding category. For example, a major resurfacing project on U.S. Route 63 in Boone County would be classified as a take-care-of-the-system project and would be evaluated by that district prioritization process. In contrast, a four-laning project on U.S. Route 71 in McDonald County would be a major-system-expansion project and would be evaluated by the statewide prioritization process.

Project prioritization overview

Every fully scoped project will be prioritized. For each project prioritization process applied at the district level, district planners will work with the appropriate RPCs and MPOs to do the following.

1. **Determine the weights for each transportation investment goal**
   The weights for all transportation investment goals must total 100 percent. General guidance is given for the range of weighting for each goal; however, there is some flexibility for districts and local officials to determine appropriate weights for their regions. There may be instances where certain goals receive a zero weighting.

2. **Determine the appropriate factors and their point values under each transportation investment goal**
   For each weighted transportation investment goal, the allowable points must total 100. There are recommended factors for each goal and a maximum point value for each factor. Additional factors may be added under "District Factors/Flexible Points" for additional district flexibility. If districts choose not to use any additional factors, they can allocate the "District Factors/Flexible Points" to the factors already listed. A more detailed explanation of each factor is in Appendix 5. Each district must submit its finalized process to Transportation Planning through the Quality Assurance/Quality Control Process for review.

3. **Districts provide scores for the objective factors based on data -- (note: A computer program will be available to help automate this process.)**

4. **Districts will work with planning partners to determine appropriate ratings for subjective factors.**

5. **After rating all prioritization factors for a particular project, a total score is calculated as follows.**
   - Multiply each investment goal score by its weight to determine a weighted score for each investment goal.
   - Add the scores for all applicable investment goals to determine the overall project score.

6. **The final step is to place needs in priority categories -- the method used for this step will be established by the MOU**
    - **High** – Resources are focused on addressing these needs first. They are selected first for programming preliminary engineering and project scoping.
    - **Medium** – These needs may be addressed as additional resources become available.
    - **Low** – No work is in progress to address these needs at this time.

The high-priority project list is fiscally constrained to five years of funding and is not a construction commitment. Each time projects are prioritized, existing projects not yet programmed for construction will be re-evaluated. Some high-priority projects may never be constructed due to prohibitive costs, changing priorities or other reasons. If MoDOT and its planning partners unanimously agree that a project no longer addresses a valid need, it will be removed from the priority project list freeing resources for projects important to Missouri.

In future years, each district will be responsible for reviewing steps 1 and 2 with local officials and making revisions as needed. Documentation of these changes and those involved must be provided to Transportation Planning under the Quality Assurance/Quality Control Process, outlined in the implementation plan.

Following are discussions and graphics for the project prioritization processes.

Taking care-of-the-system (TCOS) project prioritization

The taking-care-of-the-system project prioritization process is in Appendix 3. It applies to all areas of Missouri. This process is designed to rate rehabilitation and reconstruction projects. It is not intended to rate preventive maintenance projects. Preventive maintenance treatments are critical to reaching and maintaining Missouri's goal for pavement condition. As such, districts will program appropriate preventive maintenance projects each year, and they will be given priority over other TCOS projects. Preventive maintenance projects are not required to be evaluated by the process.

It is difficult to determine specific preventive maintenance treatments beyond the first or second year of the STIP. Therefore, a portion of the out-year TCOS funds will be designated in the STIP for preventive maintenance projects. The amount designated will be based on current levels of required preventive maintenance, anticipated system changes, and district and planning partner input. This amount is not expected to be static. Specific treatments for these funds will be determined in later STIP cycles.

Safety Needs Identification & Prioritization and Project Prioritization

Safety Program

Purpose

Missouri's Highway Safety Program provides funding for projects whose primary purpose is to reduce the number or severity of crashes on existing state highways. It applies to all areas of Missouri. Relocation of existing highways, adding new through-lanes or upgrading existing

highways to a higher classification (regardless of the safety benefits) and projects aimed at reducing congestion are not included.

Projects may be at spot locations where crash history indicates a pattern correctable with an improvement such as traffic signals, wet pavement correction, transverse rumble strips or curve corrections. Projects may also be system-wide improvements involving highway elements associated with crash frequency or severity, such as median barrier, upgrading ground-mounted signs with breakaway features, gore protection, shoulder rumble strips and new or upgraded guardrail.

Projects reducing the severity of crashes result in a worthwhile safety benefit even if the number of total crashes increase.

Funding requirements
Safety projects have designated funds as detailed in the MHTC's funding-distribution method. To qualify for these funds, a project must be one of the following.

1. A safety countermeasure that produces a favorable benefit/cost (B/C) ratio -- (The B/C analysis should be in accordance with the process outlined in the latest edition of the *Manual on Identification, Analysis and Correction of High-Crash Locations.*)

2. A safety countermeasure in accordance with statewide guidelines and has been shown to have a favorable B/C ratio on a nationwide basis (see attachment A)

3. A corrective improvement to a location with fatal crash experience

4. A new signal installation that meets MUTCD Warrant 7 (an upgrade from a wood-pole span wire traffic signal to a permanent installation can be done IF significant improvements will be constructed at the intersection as a crash countermeasure)

Safety needs identification and prioritization
Evaluating TMS accident data and receiving calls or other information about a safety concern from planning partners, the general public or other sources, needs can identify safety. These needs are evaluated in the functional needs prioritization process. At a minimum, the needs identified using the following sources must be prioritized each year.

1. High-accident location list
   - Identifies locations with at least 40 accidents over a three-year period and an accident rate higher than the statewide average for similar facilities
   - Locations are separated into ½-mile segments and intersections

2. Wet/dry accident list
   - Identifies locations with at least 10 wet accidents over a three-year period, and the ratio of wet-to-dry accidents is at least 0.33
   - Locations are separated into ½-mile segments and intersections

3. Fatal or disabling injury locations

- Locations having more than one fatal and/or disabling injury crash in the last five years -- a "disabling injury," as defined by the *Missouri Uniform Accident Report Preparation Manual*, is "when observed at the scene, non-fatal injuries that prevent walking, driving, or continuing activities the person was capable of performing before the accident"

4. Safety index/rating
   - The safety index/rating for each location includes factors for total crashes, crash severity and appearance on the high-accident location and wet/dry accident list. Districts should concentrate on locations with a poor or very poor rating and will, at a minimum, prioritize all very poor locations.

Project selection and programming
Any need evaluated in the prioritization process where a potential solution qualifies for safety funds can be selected for project scoping. The needs prioritization processes should be used as tools to help determine the order needs are selected.

The number of needs selected for scoping is limited to an appropriate amount for district resources. This limit is based on the preliminary cost-estimate for the potential solution. The total cost of projects, already in the scoping process but not yet programmed, cannot be greater than 10 years of projected safety construction funds.

After safety needs have been scoped, districts must ensure the identified solution or project is eligible for safety funds. Districts will work with planning partners to prioritize and program qualifying safety projects using the safety prioritization process in Appendix 3.

Evaluation
Following project identification and corrective action, the project's effectiveness must be evaluated. Each district is responsible for tracking the effectiveness of its safety projects.

The evaluation method requires either a before/after analysis or a control group analysis. The before/after analysis compares crash experience at a particular location before and after improvement implementation. The control group analysis compares crash experience at the improved location with crash experience at similar locations not receiving improvements. Before/after analysis has been used more extensively than control group analysis because it is difficult to find similar control locations.

Regional and emerging needs project prioritization
Planning partners may work together to facilitate the regional project prioritization process with districts as participants. Districts will provide assistance and requested data. In areas where the planning partners choose not to or cannot unanimously agree to facilitate the process, the district will assume this role.

MoDOT has statewide goals for taking care of the system, so it is crucial to have a consistent statewide process for prioritizing these projects. However, since TMAs receive all of their funds directly through the district and do not compete with other areas of the state, they are not

required to follow the same process for prioritizing regional projects. For areas that do compete for the same funding – non-TMA MPOs and RPCs – consistent processes are needed.

In TMAs, the district and TMA must agree on an appropriate process for prioritizing regional projects. This process will consider the region's goals and MoDOT's transportation investment goals listed below.

- Ensure **safety** and security in travel, decreasing the risk of injury or property damage on, in and around transportation facilities.
- **Take care of the existing system** of roads, bridges, public transportation, aviation, passenger rail and ports.
- **Relieve congestion** to ensure smooth flow of people and goods throughout the entire system.
- Broaden **access to opportunity** and essential services for those who cannot or choose not to drive.
- Facilitate the **efficient movement of goods** using all modes of transportation.
- Ensure Missouri's continued **economic competitiveness** by providing a safe, reliable and efficient transportation system.
- **Protect Missouri's environment** and natural resources by making investments that are not only sensitive to the environment but that also provide and encourage environmentally beneficial transportation choices.
- Enhance the **quality of Missouri's communities** through transportation.

When the district and the TMA agree to the process, it will be documented and submitted to Transportation Planning. The Transportation Planning director must agree that the submitted process adequately considers MoDOT's transportation investment goals.

Major projects prioritization (statewide – non-TMA ONLY)

The major projects prioritization process applies to the non-TMA areas of the state and is only for rural major projects. Rural major projects funds are intended for system-expansion projects including new major roadways, new bridges and roadway expansion projects. The process is applied at a statewide level.

A Rural Major Projects Prioritization Task Force, consisting of district engineers, the director of project development, the director of operations and the transportation planning director, will facilitate the major projects prioritization process. District engineers and their staffs are responsible for working with the RPCs, MPOs and local officials to determine the high-priority major projects in their districts. The other members of the task force each possess knowledge of MoDOT's project development, operations and planning activities needed to make programming decisions.

In July of each year, district engineers will submit their high-priority major projects to Transportation Planning. This list must be financially constrained to no more than the program year's funding target for the rural major projects category.

The Transportation Planning office at MoDOT General Headquarters will prioritize projects using the major projects - system-expansion process. Transportation Planning will rely on districts and their planning partners to score subjective factors.

In September of each year, the task force members will meet to review the prioritization rankings and develop programming recommendations for major projects. District engineers will share the recommendation with their planning partners, gather input on it and communicate how and why each decision was made.

Each year in November, the task force will consider the planning partners' input and make a final recommendation to MoDOT's chief engineer. When the chief engineer has reviewed this recommendation, the decision will be incorporated in the draft STIP.

Statewide major bridge preservation

Missouri has approximately 200 major bridges defined as having an overall length of 1,000 feet or more. These structures are expensive to maintain and place a burden on district funding. A process for prioritizing these major bridges is being developed and will become part of the framework. It is expected to work like the interstate prioritization process discussed below.

Interstate prioritization

The interstate prioritization process uses an asset management approach. Interstate funds include construction and right of way costs along with preliminary engineering costs.

This funding is intended to rehabilitate existing interstate routes. It cannot be used for expansion work, such as the lane additions or major relocations. For example, the reconstruction of I-70 to a six-lane section would not receive this funding. Rehabilitation of the existing I-70 lanes, while awaiting a decision on the ultimate solution, is eligible for these funds. Projects that combine rehabilitation with expansion can use interstate funds for the rehabilitation portion of the project if it is a priority location.

The funds will be applied to pavement and bridges, excluding major bridges that carry the interstate system. The pavement condition goal for interstates is to have 85-90 percent in good condition according to the commission's funding-distribution method. This goal was developed assuming funding did not include the replacement of bridge structures that cross over interstate routes. These structures will be addressed, along with the routes they carry, using other funds.

Routine guardrail upgrades will be included with interstate projects; however, upgrades of attenuators and guard cable will use other funds. Shoulder treatments will be included with mainline projects where appropriate. Stand-alone shoulder rehabilitation will not be programmed from this funding category, nor will any activities on outer roadways. Similarly, raised pavement markings can be funded from this category, but only in conjunction with mainline projects.

Districts will work with planning partners to generate a list of interstate needs and submit them to Transportation Planning each year by the end of August. This list must be financially constrained to no more than the program year's funding target for the interstate category. Each need should include the following information.

- Job number
- Route
- Direction (list singly for each)
- Continuous beginning and ending log miles
- Location description
- Recommended treatment
- Cost estimate
- Is there a safety concern at the location?
- Is it a high-maintenance location?

Work is then prioritized from a statewide system perspective. The Transportation Planning office in MoDOT's General Headquarters will use data sources to develop a prioritized project list. These include district and planning partner input, field checks, Transportation Management Systems (TMS) data and output from pavement management software (dTIMS). The pavement management software is given system condition data, a set of available treatments with associated costs – including life-cycle costs – appropriate use (triggers) and system condition goals. The software cycles through possible treatment scenarios at all locations to optimize system condition relative to the pavement condition goal using the funds available. This goal is 85-90 percent of interstate pavements in good condition.

TMS tracks the International Roughness Index (IRI), which will be used to identify sections of pavement that are less than the desired condition level. However, individual distresses, distress levels and deterioration rates will be used to determine timing and treatment selection. All levels of treatment activities (rehabilitation and reconstruction, thin-lift overlays and preventive maintenance) are anticipated from this funding category, depending on the existing condition and life-cycle benefit.

If condition values in TMS differ from district observations, this discrepancy will be noted when the need is first submitted to Transportation Planning.

Treatments considered by the pavement management software are somewhat generic and require further detail to complete a project scope. A MoDOT pavement selection group will make recommendations as needed for these details such as pavement design thickness and alternative bids. These details allow district staff to generate an accurate cost estimate needed for placement on the STIP. However, these recommendations will not change the priority of a project as first determined by the pavement management software.

The Transportation Planning Office will develop a draft interstate program based on original cost estimates and other information submitted the previous month. Projects will be recommended for programming based on the following guidelines.

> **Preventive Maintenance --** Preventive maintenance treatments – especially the use of 1¾-inch thin-lift overlays – are critical to reaching and maintaining Missouri's goal for interstate condition. As such, appropriate preventive maintenance projects will be given priority over other projects. It is difficult to determine specific preventive maintenance treatments beyond the first or second year of the STIP. Therefore, a portion of the out-year interstate funds will be designated in the STIP for preventive maintenance projects.

The amount designated will be based on current levels of required preventive maintenance, anticipated system changes and district, local official and planning-partner input. Specific treatments for these funds will be determined in later STIP cycles.

Condition Gaps -- Consideration will be given to completing sections between major routes or along a nearly uniform condition corridor to provide the public a more consistent driving surface. Project limits will not end at district or county lines unless significant condition changes warrant such limits.

Safety Concerns -- Projects at locations with documented safety concerns that can be addressed through rehabilitation and reconstruction treatments will receive higher priority. For instance, a wet/dry or high-hazard accident location may warrant earlier programming.

High-Maintenance Areas -- Locations along interstates where a high frequency of lane closures is required due to maintenance operations will receive greater consideration when programming.

District Funding Participation -- Districts may choose to use regional, flexible or taking-care-of-the-system funds on interstate rehabilitation and reconstruction projects. Participating in a portion of a project's cost may allow it to be programmed sooner, especially to cover project elements not eligible for interstate funds, such as adding capacity. Participating in project costs will not raise the priority of the project – the rehabilitation portion of the project must still be a high statewide priority to be programmed.

Resource Allocation and Project Coordination -- The availability of district employees, equipment and materials may influence the selection of projects for programming. For instance, the number of priority locations in a single district might exceed the number it can manage in a given year due to limits on construction inspections, work zones or other factors. Some projects may be pushed back a year or more to accommodate these issues. Every attempt will be made to coordinate projects with other statewide and district activities such as the installation of guard cable or the upgrade of guardrail.

In September each year, the Transportation Planning Office will provide the draft interstate program to districts. The districts will make necessary estimate corrections due to recommended treatment changes. Districts will then work with planning partners to review the draft and provide input to Transportation Planning by the end of October.

The Transportation Planning Office will finalize the interstate program each year in November.

How often is project prioritization updated?

Districts will work with local officials and planning partners to review and revise the project prioritization processes each year. Districts will provide documentation of revisions and involvement of local officials to Transportation Planning through the Quality Assurance/Quality

Control process, which is discussed in the implementation plan section. Documentation should include who was involved, how they were involved and any changes made.

Schedule for completion – how long does project prioritization take?
Project prioritization is done each year leading to the STIP development, and it takes six months to complete. Project prioritization will be done concurrently with needs prioritization and in accordance with the schedule found in the programming section.

Fiscal-constraint requirements for project prioritization
The amount of projects evaluated by the project prioritization processes is not fiscally constrained. Every fully scoped project will be prioritized. When the planning framework is fully implemented, there will be a steady flow of projects ready for prioritization each year. In recent years, MoDOT and its planning partners have defined a large number of projects through planning efforts. The prioritization processes, resulting in larger-than-usual priority project lists for the first several years, will evaluate these projects.

The amount of projects in the high-priority project category is constrained to the available funding for five years. The medium category should include those projects that cannot be included in the high-priority list due to the fiscal constraints. All other projects should be placed in the low-priority category.

If MoDOT and its planning partners unanimously agree that a project no longer addresses a valid need, it will be removed from the priority projects lists. This will make planning and project development resources available for focusing on projects important to Missouri.

Participation guidelines – who should be involved in project prioritization and to what extent?
MPOs and RPCs have been instrumental in the planning framework development and the prioritization processes. They will also work with districts to tailor the processes applied at the district level to fit their regional needs. Districts will work with planning partners to review and adjust these processes on an annual basis. In addition, while many prioritization factors depend on MoDOT's Transportation Management Systems (TMS) data and other sources, other factors are subjective. Districts will depend on their planning partners to help determine the best way to rate these subjective factors.

Who facilitates project prioritization?
The districts facilitate the project prioritization processes for **taking care of the system** and **safety**.

MPOs and RPCs may work together to facilitate the **regional project prioritization** process, with districts as participants. In areas where they choose not to or cannot agree to facilitate the regional process, the district will assume this role. All parties must agree or the district will facilitate the process.

The Transportation Planning Office and the Rural Major Projects Task Force facilitate the project prioritization process for **major projects**.

The Transportation Planning office facilitates the **interstate** project prioritization process with assistance from districts.

QA/QC for project prioritization
Each district will work with its planning partners to finalize the appropriate factors and to determine the investment goal weights in the prioritization processes. Districts will review project prioritization processes each year, and revise them, if necessary, in cooperation with local officials and planning partners. Documentation of revisions will be provided to the long-range planning coordinator in Transportation Planning as part of the QA/QC process. These reviews may not be needed as frequently once the process has matured.

Annually, each district will be responsible for working with its planning partners to establish a prioritized list of projects, using the prioritization processes determined by the district and its planning partners. The project prioritization will be fiscally constrained based on each districts funding targets. Districts will submit the lists to Transportation Planning when completed and by the deadline in the STIP schedule.

Programming – Statewide Transportation Improvement Program

What is the STIP, and what is its purpose?
Projects from the high-priority list will be selected for programming in the Statewide Transportation Improvement Program (STIP). The STIP includes construction projects MoDOT will award over a five-year period including highways, bridges, transit, aviation, rail, waterways, enhancements and others. The STIP is a rolling plan, which means as one year is completed, another year is added. It is the project-specific product that shows Missourians the improvements that will be made on the transportation system.

Discussion of MoDOT's STIP is inclusive of the MPO Transportation Improvement Programs (TIP) developed under federal law by each of Missouri's seven MPOs. MoDOT's STIP includes the current MPO TIPs by reference.

How often is the STIP updated?
Federal law requires MoDOT to update the STIP every two years. In most years, MoDOT prepares a STIP, though it is not an annual requirement.

Schedule for completion – how long does STIP development take?
All of the processes discussed in previous sections lead to STIP development. The STIP is a snapshot of MoDOT's and its planning partners' priorities and commitments.

An overview of the annual STIP preparation schedule is at the end of this section in Figure 2. It shows when necessary information flows between the Transportation Planning Office in MoDOT's General Headquarters, districts and planning partners at each step in the planning and decision-making process. In August each year, Transportation Planning's Program Management staff will provide a schedule of specific dates to districts and planning partners.

Programming Guidelines

The project prioritization process will place projects into high, medium and low categories. Further consideration is needed to determine which high-priority projects to pot in the STIP for final design and construction.

The number of projects programmed within each funding category is limited by MoDOT's funding-distribution method. MoDOT General Headquarters supplies specific funding targets for each district annually. Districts and planning partners will work together using the following guidelines and other regional considerations to develop recommendations for the STIP each year.

Joint-State Obligations – Joint-state obligations, which typically include bridges and major roadways, should be a consideration while programming. Projects should be programmed to ensure Missouri meets such obligations.

Funding from Other Sources -- Funding from other sources can reduce the effective cost of a project for MoDOT. This frees funds for use on other high-priority projects. It may be appropriate to fund a project sooner than anticipated when funding from other sources are available.

Timing Considerations -- Projects should be programmed allowing for adequate time to prepare the project for construction. Projects should follow guidance from project-scoping policies concerning the level of detail necessary prior to adding it to the STIP. The award year selected must consider the amount of time needed to complete design and right of way plans and any pre-requisite construction projects. Therefore, it may be necessary to delay adding a high-priority project to the STIP to make such allowances.

Corridor Completion -- Current corridor gaps in the transportation system will be eliminated. A listing of current corridor gaps is in Appendix 2 – MoDOT's funding-distribution method.

As a general MHTC policy, projects will not be programmed in phases that allow gaps to be created in the future. Projects should be programmed to complete logical segments. If a corridor segment contains projects that rate high, and a decision is made to program any of these projects, all projects within the logical segment – regardless of their priority – should automatically be committed and should be completed to make certain no gaps are left. Existing corridors should be completed to logical termini before construction can begin on new corridors.

Projects Dedicated by Federal Legislation -- Federal legislation may designate funds for certain projects. These projects must be programmed to benefit from these funds.

Fiscal-constraint requirements for the STIP

The STIP is fiscally constrained by the projected revenue over the five-year period of its life.

Participation guidelines – who should be involved in developing the STIP and to what extent?

Districts will work with MPOs and RPCs to determine which high-priority projects should be funded. Projects in MPO regions may only be programmed in the STIP if they are also in the LRTPs of the MPO. Consideration will also be given if projects are designated as high priorities in RPC's regional transportation plans.

The yearlong involvement of planning partners, other local officials and the public outlined in the framework culminates in a 60-day public comment period for the draft STIP. The document is publicized and distributed to locations where Missourians can review it and offer comments. Changes are made in response to comments before a final draft is developed.

Who facilitates the development of the STIP?

The Transportation Planning Office facilitates STIP development with the aid of districts and planning partners.

QA/QC for programming

When the districts have established project priorities, they must then choose which priorities to program. Districts should follow the programming guidelines when making these decisions. This process will include working with planning partners to develop the transportation improvement program recommendations to submit to Transportation Planning.

Figure 2 – General Planning Framework/Programming Schedule
July-June (State Fiscal Year)

	Districts	Trans Plng	Planning Partners	Others	Deadline	Task
Needs ID	✓	✓	✓	✓	Continuous	Needs identified by districts and planning partners[1]
Needs Prioritization	✓		✓		July	Districts work with planning partners to review needs prioritization processes and make any necessary changes
	✓	✓			August	Districts submit any changes to the needs prioritization processes to Transportation Planning (TP)
	✓	✓	✓	✓	December	Districts work with planning partners using the needs prioritization processes to evaluate selected needs against one another
Project Prioritization	✓		✓		July	Districts work with planning partners to review project prioritization processes and make any necessary changes
	✓	✓	✓	✓	July	Rural Major Projects Task Force members submit major projects to be prioritized using the major projects prioritization process. Cooperation with planning partners is required
	✓	✓			August	Districts submit any changes to the project prioritization processes to TP
		✓			August	TP uses the major projects prioritization processes to evaluate major project submittals against one another. Cooperation with districts and planning partners is required.
	✓	✓			August	Districts work with planning partners to develop a list of high-priority interstate projects and submit to TP for consideration for the Interstate Program.
	✓	✓			September	Rural Major Projects Task Force meets to review results of major projects prioritization process and develop an initial recommendation
		✓	✓	✓	October	Rural Major Projects Task Force members and their staff discuss draft major projects recommendation with planning partners and the public in their district
	✓	✓	✓	✓	December	Districts work with planning partners using the project prioritization processes to evaluate selected projects against one another
Programming	✓	✓			August	TP provides planning and programming packets to districts
	✓	✓			September	TP uses dTIMS, information supplied by districts and other data to develop a draft Interstate Program and shares this program with districts and planning partners for comment
	✓	✓			October	TP provides funding targets to districts
	✓	✓		✓	October	Statewide Transportation Planning and Programming Meeting
		✓			November	TP finalizes Interstate Program based on district and planning partner comments
	✓	✓			November	Rural Major Projects Task Force meets to discuss input on major projects recommendation and make a final recommendation to the Chief Engineer
	✓	✓	✓	✓	January	Districts select high-priority needs to move forward into project scoping. Cooperation with planning partners is required
	✓	✓	✓	✓	January	Districts select high-priority projects to be programmed. Programming guidelines should be used and cooperation with planning partners is required
	✓	✓			February	Districts submit recommendations for (needs) project scoping work to TP for inclusion in the STIP
	✓	✓			February	Districts submit recommendations for projects to TP for inclusion in the STIP
	✓	✓	✓	✓	March	TP sends district maps to districts and planning partners for review
	✓	✓	✓	✓	March	Districts complete review of district maps with planning partners and submit input to TP
	✓	✓	✓	✓	April	TP Completes draft STIP and sends to Districts for Review with Planning Partners
	✓			✓	May	Draft STIP presented to MHTC
	✓	✓	✓	✓	May-June	Public Comment period on the Draft STIP
	✓			✓	July	MHTC approves STIP

[1] The tasks described in the schedule under needs identification apply to the routine tasks that annually take place and not to the formal needs identification process that takes place with the LRTP update every three to five years

Conclusion

The framework allows MoDOT to accomplish the following outcomes.

- **Increased influence and involvement of local communities in decision-making**
  The framework requires extensive involvement of regional planning partners at each step of the planning and decision-making process.
- **Increased predictability in the planning and decision-making process**
  The framework establishes a process outlining how and when transportation investment decisions are made and when Missourians can most effectively influence these decisions.
- **Greater accountability and flexibility in the planning and decision-making process**
  MoDOT is accountable to Missourians for making the best use of their transportation dollars. Transportation decisions are made using data about the transportation system and input from those affected. The framework details whom to involve and what outcomes are expected; however, it also includes flexibility for local areas to determine how these activities should be done. The framework also includes a system of checks and balance to make certain the process is working.
- **Ensured integrity of Missouri's transportation system**
  The framework will make sure limited transportation dollars are spent in the best possible way, helping MoDOT and regional and local agencies meet strategic transportation goals.

The planning process improves the way MoDOT makes decisions about which transportation problems to address first. The prioritization processes insure consistent evaluation of similar problems around the state. For instance, repairing rough pavement in one part of the state is prioritized using the same information and methods as in another part of the state.

Local communities have more influence in this improved process because local officials now have a guaranteed seat at the decision-making table. This doesn't mean local officials will always get what they want; it means their opinions and issues will be considered. It also means they will understand the situation, and why in some cases, the answer must be "no."

MoDOT's planning process is more open than ever before. Even though the overall steps in the planning process haven't really changed, the opportunities for public involvement at the local level have grown. The improved process identifies the steps in the process where individual decisions are made and how local officials and citizens can most easily affect these decisions. Involving the right people throughout the process just makes sense and improves the results.

Implementation Plan

The implementation plan transitions MoDOT from planning activities currently taking place to the time when the planning framework will guide planning activities. This transition will require time. Many things need to take place prior to the full implementation of the framework and its processes. Some of these include the following.

Statewide Planners' and Programmers'
Meeting and Training Session – Spring 2004

Planners and programmers will receive a detailed overview of the planning framework and the processes in it. District staff will also receive training regarding the completed (statewide or not flexible) prioritization tools and provided direction on how to develop the more flexible processes, so the database tools can be fully developed. This workshop will likely require use of computers and approximately two days.

Statewide Public Information Meeting (agenda item): March 2004

An agenda item for the March 2004 Statewide Public Information Meeting will be discussion of the planning framework's public involvement philosophy and potential changes in how MoDOT does business, such as project scoping and STIP development. Approximately one hour will be needed.

District visits/training sessions: Spring/Summer 2004

Visits and training sessions will take place in each district following the Spring Statewide Planners' and Programmers' Meeting and will be a general overview of the planning framework. These events will serve as the kick-off for the districts working with their planning partners to tweak the specific prioritization processes. There will be one meeting in each district. Planning partners will be asked to attend at least one district session. The morning session, which will be the general overview portion, should include the district engineer and/or his assistant, area engineers, project managers, planning staff, public information staff and planning partners. The afternoon session is mandatory for planning staff. Districts should determine if other staff members' attendance is necessary to begin tailoring the prioritization processes. Planning partners will be invited to attend the full-day session.

Additional support will be provided from General Headquarters Transportation Planning staff as requested by districts as they modify the prioritization processes for their regions. *The district visits must be completed by June 2004. Districts must have their prioritization processes developed by July 2004, so the database tools can be developed for their use. These tools will be ready for districts' use by the end of August 2004.*

MoDOT General Headquarters' Training Sessions: Summer 2004

Internal staff should have a general knowledge of the policies and processes in the planning framework. There will be one or two half-day workshops held at General Headquarters to provide a general overview of the planning framework. These will be set up for all of MoDOT's functional and business unit leaders and their appropriate staff. *These sessions need to be completed by July 2004*.

MoDOT will not completely develop a STIP using the planning framework for five to 10 years. The Missouri Highways and Transportation Commission (MHTC) is committed to finishing projects previously promised to the public; therefore, the planning framework processes will not evaluate these projects. Because these steps must take place prior to full utilization of the prioritization processes in the framework, they will not be used in the development of the 2005-

2009 STIP, which is almost completed. However, the intent to involve local officials in its development should begin immediately.

Following MHTC endorsement of the planning framework, districts will be charged with fully implementing all aspects of the planning and decision-making processes. The framework will become a part of the long-range transportation plan.

During the 2005-2009 STIP development, districts should begin using as much of the planning framework as possible. This will be an opportunity to begin refining internal processes, so when the framework processes are fully implemented, there will be a smoother transition. Currently, most districts are already using the project-scoping process and consulting the planning partners for the districts' transportation improvement final program. When the 2006-2010 STIP cycle begins, MoDOT districts and General Headquarters will be fully utilizing all the planning framework processes.

Memorandums of Understanding

During implementation of the planning framework, each MoDOT district will develop memorandums of understanding (MOUs) with planning partners in their region. These MOUs must be completed by September 2004 and will include the following.

- Collaborative philosophy – Transportation decisions will be made in collaboration with planning partners. MoDOT will work side-by-side with planning partners to make transportation decisions. Developing materials and sending them out for review by planning partners is not acceptable.

- Schedule for all planning activities -- The following deadlines must be met in order to complete the Statewide Transportation Improvement Program each year.

    - Revise prioritization processes for needs and projects – due in July

    - Develop interstate project priorities – due in August

    - Prepare high-priority needs and project lists – due in December

    - Select projects for programming – due in February

    - Review Draft STIP – due in April

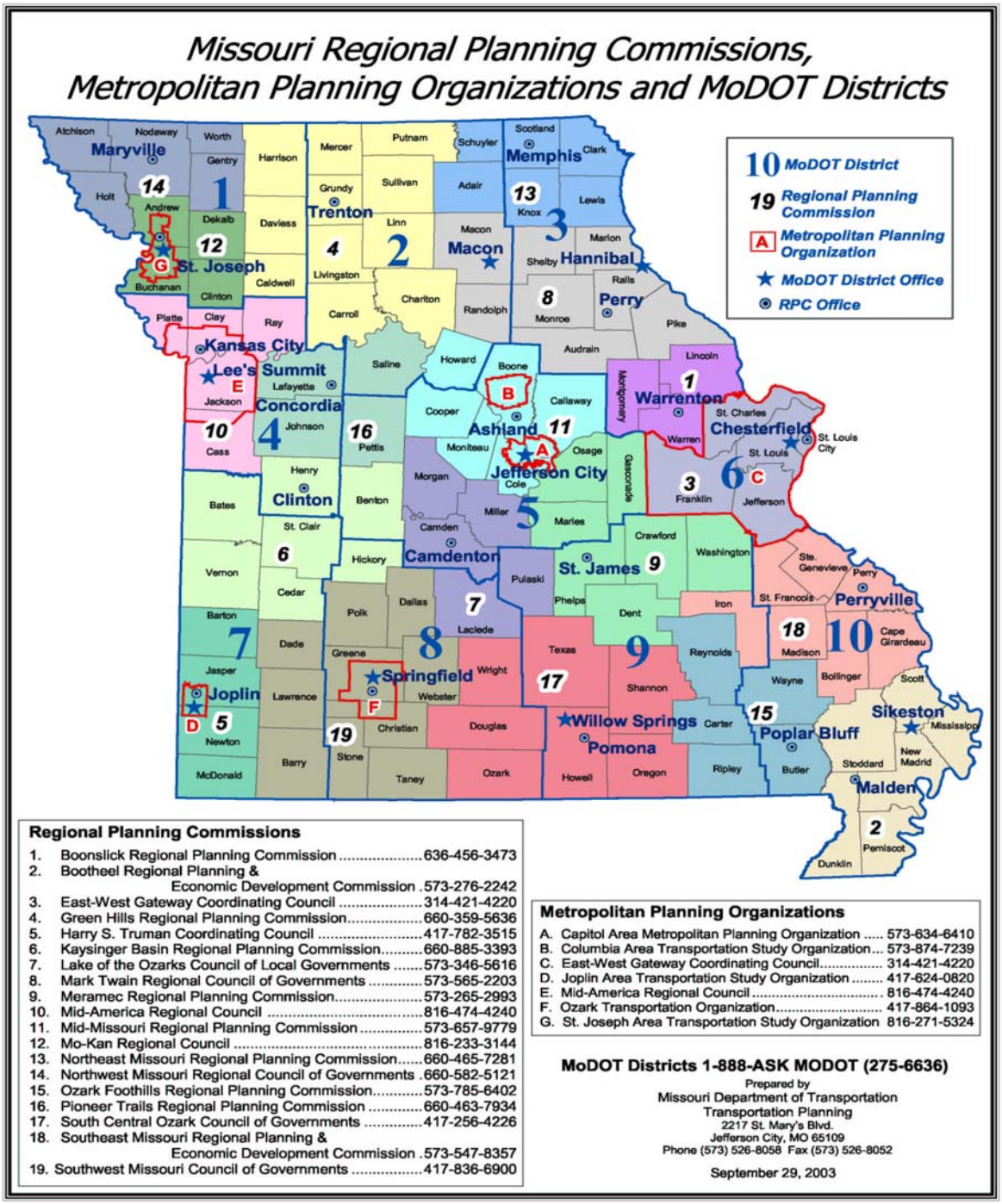
- Details of how MoDOT will work with planning partners at each step of the planning process

    - Who will facilitate each process?

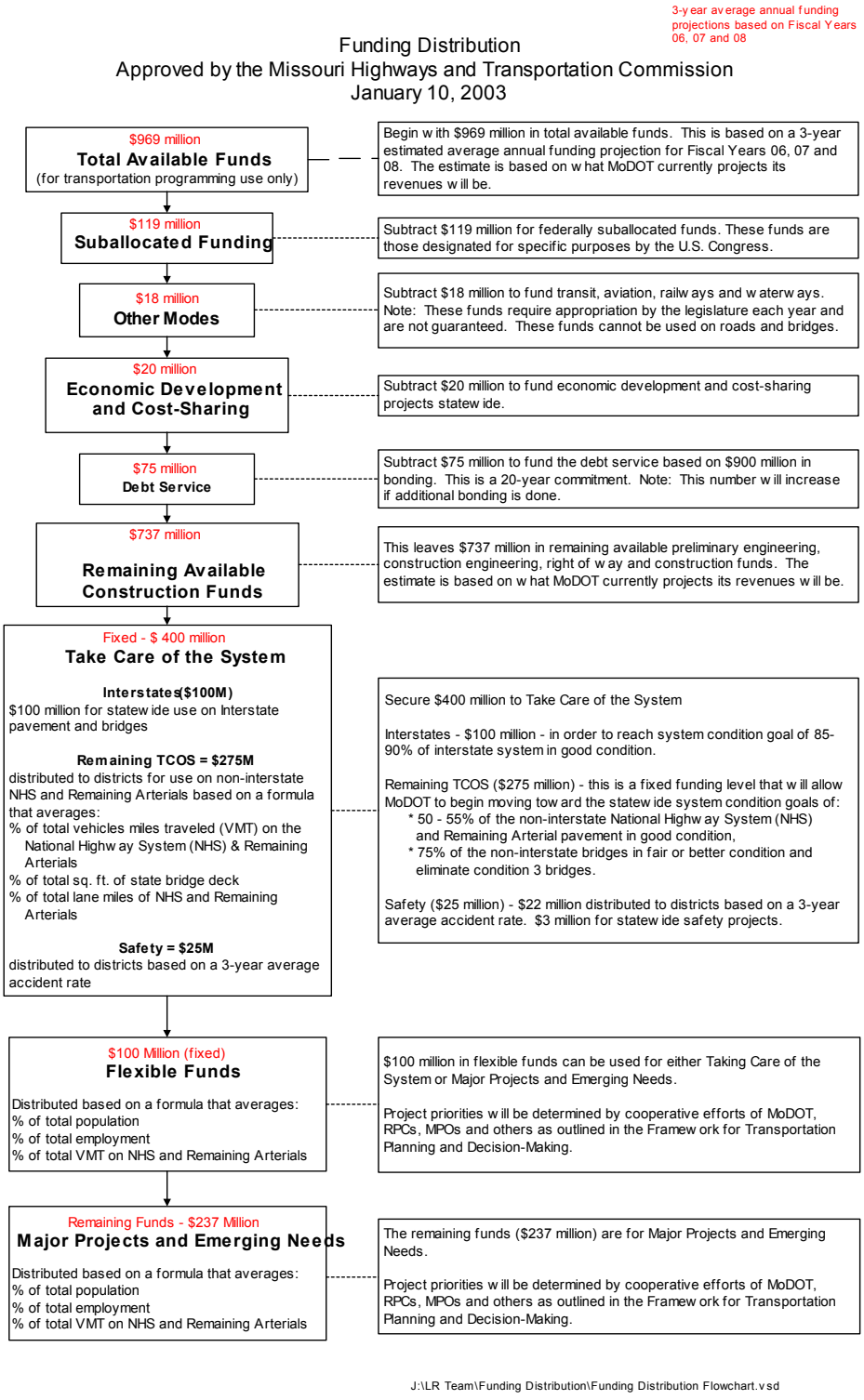
    - What methods will be used?

    - When will activities take place?

Appendix 1 – Map of Missouri's MPOs and RPCs



Appendix 2 – MoDOT's Funding-Distribution Method



Funding Distribution - By District

Total TCOS* = $400 million; Flexible funds = $100 million; Major Projects = remaining funds (estimated at $237 million)

Approved by the Missouri Highways and Transportation Commission - January 10, 2003

*Total TCOS = $400 million = TCOS funds ($275 million) + Interstate funds ($100 million) + Safety funds ($25 million)

Dist.	Take Care of the System (TCOS)(1)	Debt Service (2)	Sub-allocated Funds (3)	Other Modes(4)	Economic Development & Cost-Sharing	Interstates (5)	Flexible Funds(6)	Major Projects and Emerging Needs(7)	Safety(8)	Total Funds
1	$18.84	$3.0	$6.2	$0.32			$3.67	$4.35	$0.75	$37.13
2	$14.35	$6.0	$5.9	$1.28			$2.93	$3.48	$0.66	$34.59
3	$16.72	$4.5	$4.8	$1.40			$3.52	$4.18	$0.81	$35.94
4-Urban	$36.39	$10.5	$25.5	$3.45			$17.08	$40.48	$3.81	$137.22
4-Rural	$12.37	$3.8	$1.1	$0.48			$3.30	$3.91	$0.84	$25.79
5	$25.84	$6.0	$4.4	$2.67			$8.22	$9.74	$2.04	$58.91
6	$62.33	$21.8	$51.9	$4.34			$35.30	$83.66	$6.57	$265.85
7	$20.65	$3.0	$4.3	$1.43			$5.64	$6.69	$1.36	$43.07
8-Urban	$7.83	$0.8	$4.1	$0.29			$4.51	$10.70	$1.23	$29.46
8-Rural	$14.86	$5.3	$2.8	$0.27			$4.48	$5.31	$1.24	$34.17
9	$17.98	$3.8	$3.0	$1.07			$4.42	$5.24	$1.06	$36.51
10	$24.83	$6.8	$5.1	$0.80			$6.91	$8.19	$1.63	$54.21
SW*	$2.00			$0.29	$20	$100			$3	$125.29
Rural SW Major Projects								$51.08		$51.08
	$275	$75	$119	$18	$20	$100	$100	$237	$25	$969.24

Notes and Assumptions:

* SW = Statewide

(1) Take Care of the System funds are distributed based on a formula that averages the following:
- % of total VMT on NHS & Remaining Arterials
- % of square feet of state bridge deck on total state system
- % of total lane miles of NHS and Remaining Arterials

(2) Debt Service is distributed based on the percentage of total bonding funds programmed in each district.

(3) These funds are those designated for specific purposes by the U.S. Congress. Estimates for amount of funds and distribution are based on an average of funding projections for Fiscal Years 06, 07 and 08.

(4) Other Modes funds are based on FY 2003. Funds available as appropriated annually

(5) The goal of having 85-90% of all the interstate system in good condition can be met by using the $100 million dedicated for interstate rehabilitation & reconstruction.

(6) Flexible funds can be used for either Taking Care of the System or Major Projects and Emerging Needs and is distributed based on the average of:
- % of total population
- % of total employment
- % of total VMT on the NHS and Remaining Arterials

(7) Major Project and Emerging Needs funds are distributed based on a formula that averages the following:
- % of total population
- % of total employment
- % of total VMT on the NHS and Remaining Arterials

50% of Rural Major Project and Emerging Needs Funds is distributed to districts. 50% is for statewide rural use.

The $51M dollars for statewide rural use will be used in the following manner:

1) Addressing the 2002-2006 STIP commitments
2) Finishing gaps (see list below) and other projects that are currently underway, including identified 2002 potential bonding projects not included in the final list of bonding projects

Remaining corridor gaps (alphabetical order)

Camden, Route 5 - Completing an improved highway from Niangua Arm of the Lake of the Ozarks to Laclede County line.
Camden, Miller, Route 54 – Relocating a four-lane highway from Route KK to Business 54.
Carter, Route 60 – Upgrading to a four-lane highway from east of Route 21 to Butler County line.
Clark, Lewis, Route 61 - Upgrading to a four-lane highway from south of Wayland to Canton.
Dent, Route 72 - Completing an improved two-lane highway from Route FF to Salem.
Dunklin, Pemiscot, Route 412 - Completing the four-lane highway from Kennett to Hayti.
Jasper, Route 249 – Bypassing of Range Line Road (Business Route 71) from Route 171 to Interstate 44.
Macon, Route 36 - Upgrading to a four-lane highway from the Linn County line to west of Macon.
McDonald, Route 71 - Upgrading to a four-lane highway from Pineville to Arkansas.
St. Clair, Route 13 - Upgrading to a four-lane highway at Collins.
Stone, Route 13 - Upgrading to a four-lane highway at the Route 76 south junction.
Taney, Route 65 - Upgrading to a four-lane highway from Branson to Arkansas.

3) Beginning work on the rural corridors as identified in Proposition B (priority to be determined)

(8) Safety funds are distributed based on a 3-year average accident rate. A portion of safety funds is for statewide use.

Amounts in millions of dollars and are 3-year average annual funding projections based on Fiscal Years 06, 07 and 08.

Distribution:

Rural portion	$411.4	48.75%
St. Louis	$265.9	31.50%
Kansas City	$137.2	16.26%
Springfield	$29.5	3.49%
Total Distributed	$844.0	
Not Distributed	$125.3	
Total	$969.2	

Appendix 3 – Prioritization Processes

Physical System Condition Needs

Prioritization Process

Physical System Condition Needs
11/04/2003

This process applies to all areas of the state

Taking Care of the System

Roadway	
Pavement Smoothness	30 pts
Pavement Condition	20 pts
Functional Classification	10 pts
Daily Usage (all vehicles)	10 pts
Truck Usage	10 pts
District Factors/Flexible Points	20 pts
Total	**100 pts**

- OR -

Bridge	
Bridge Condition	50 pts
Functional Classification	10 pts
Daily Usage (all vehicles)	10 pts
Truck Usage	10 pts
District Factors/Flexible Points	20 pts
Total	**100 pts**

- **The glossary explains how each factor is scored.**
- **There is no flexibility among investment goals in this prioritization process because the other goals do not have a direct effect on measuring the physical system condition needs on the transportation system.**
- **The flexibility lies in "district factors/flexible points," which can be used to capture unique items that are important to an individual region or can be allocated among existing factors.**

Functional Needs

Prioritization Process

Functional Needs
11/04/2003

This process does not apply in TMA areas

Access to Opportunity
Weight: 5% minimum - 30% maximum

Vehicle Ownership	50 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Congestion Relief
Weight: 5% minimum - 30% maximum

Level of Service	25 pts
Daily Usage	25 pts
Functional Classification	25 pts
District Factors/Flexible Points	25 pts
Total	**100 pts**

Economic Competitiveness
Weight: 5% minimum - 30% maximum

Level of Economic Distress	30 pts
Supports Regional Economic Development Plans	20 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Efficient Movement of Freight
Weight: 5% minimum - 30% maximum

Truck Volume	50 pts
Freight Bottlenecks	20 pts
Intermodal Freight Connectivity	10 pts
District Factors/Flexible Points	20 pts
Total	**100 pts**

Quality of Communities
Weight: 5% minimum - 30% maximum

Connectivity	40 pts
Complies with Regional or Local Transportation Plans	30 pts
District Factors/Flexible Points	30 pts
Total	**100 pts**

Environmental Protection
Weight: 0% minimum - 30% maximum

District Factors/Flexible Points	100 pts

Safety
Weight: 20% minimum - 50% maximum

Safety Index	85 pts
Safety Concern	5 pts
District Factors/Flexible Points	10 pts
Total	**100 pts**

Taking Care of the System
Weight: 5% minimum - 30% maximum

Substandard Roadway Features **OR** Substandard Bridge Features	75 pts
District Factors/Flexible Points	25 pts
Total	**100 pts**

- **The glossary explains how each factor is scored.**
- **MoDOT Districts will allocate 50% of the weight among investment goals.**
- **"District Factors/Flexible Points" may be used to capture unique items that are important to an individual region or can be allocated among existing factors.**
- **The weight of investment goals must meet minimum and maximum percentages noted above. The total weight of all investment goals must equal 100%.**
- **MPOs designated as Transportation Management Areas may develop their own functional needs prioritization process, subject to certification by MoDOT.**

Taking Care of the System Projects

Prioritization Process

Taking Care of the System
11/04/2003

This process applies to all areas of the state

Access to Opportunity
Weight: 0% minimum - 20% maximum

Eliminate Bike/Ped Barriers (ADA)	25 pts
Vehicle Ownership	25 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Congestion Relief
Weight: 0% minimum - 20% maximum

Level of Service	75 pts
District Factors/Flexible Points	25 pts
Total	**100 pts**

Economic Competitiveness
Weight: 0% minimum - 20% maximum

Strategic Economic Corridor	30 pts
Level of Economic Distress	20 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Efficient Movement of Freight
Weight: 0% minimum - 20% maximum

Truck Volume	90 pts
District Factors/Flexible Points	10 pts
Total	**100 pts**

Quality of Communities
Weight: 0% minimum - 20% maximum

District Factors/Flexible Points	100 pts
Total	**100 pts**

Environmental Protection
Weight: 0% minimum - 20% maximum

Environmental Index	50 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Safety
Weight: 5% minimum - 25% maximum

Safety Index	70 pts
Safety Concern	10 pts
Safety Enhancements	10 pts
District Factors/Flexible Points	10 pts
Total	**100 pts**

Taking Care of the System
Weight: 75% minimum - 95% maximum

Roadway

Pavement Smoothness	30 pts
Pavement Condition	20 pts
Functional Classification	10 pts
Daily Usage (all vehicles)	10 pts
Truck Usage	10 pts
Substandard Roadway Features	10 pts
District Factors/Flexible Points	10 pts
Total	**100 pts**

- OR -

Bridge

Bridge Cndition	40 pts
Exceptional Bridge	10 pts
Functional Classification	10 pts
Daily Usage (all vehicles)	10 pts
Truck Usage	10 pts
Substandard Bridge Features	10 pts
District Factors/Flexible Points	10 pts
Total	**100 pts**

- **The glossary explains how each factor is scored.**
- **MoDOT Districts will allocate 20% of the weight among all investment goals.**
- **"District Factors/Flexible Points" may be used to capture unique items that are important to an individual region or can be allocated among existing factors.**
- **The weight of investment goals must meet minimum and maximum percentages noted above. The total weight of all investment goals must equal 100%.**

Safety Projects

Prioritization Process

Safety Projects
11/04/2003

This process applies to all areas of the state

Access to Opportunity
Weight: 0%

Congestion Relief
Weight: 10%

Daily Usage	90 pts
District Factors/Flexible Points	10 pts
Total	**100 pts**

Economic Competitiveness
Weight: 0%

Efficient Movement of Goods
Weight: 0%

Quality of Communities
Weight: 0%

Environmental Protection
Weight: 0%

Safety
Weight: 90%

Safety Index	40 pts
Accident Severity	25 pts
Accident Rate	20 pts
Safety Concern	5 pts
Safety Enhancements	5 pts
District Factors/Flexible Points	5 pts
Total	**100 pts**

Taking Care of the System
Weight: 0%

- **The glossary explains how each factor is scored.**
- **Because this is a more data intensive process with a higher level of desired statewide consistency, the investment goals are fixed.**
- **There are "District Factors/Flexible Points" in this process to capture unique items that are important to an individual region; or these points may be allocated among existing factors.**

Prioritization Process

Regional and Emerging Needs Projects
11/04/2003

Regional and Emerging Needs Projects

This process does not apply in TMA areas

Access to Opportunity
Weight: 5% minimum - 30% maximum

Vehicle Ownership	25 pts
Eliminate Bike/Ped Barriers	25 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Congestion Relief
Weight: 5% minimum - 50% maximum

Level of Service	20 pts
Daily Usage	20 pts
Functional Classification	20 pts
System Efficiency (w/o Expansion)	20 pts
District Factors/Flexible Points	20 pts
Total	**100 pts**

Economic Competitiveness
Weight: 5% minimum - 30% maximum

Supports a Strategic Economic Corridor	20 pts
Level of Economic Distress	20 pts
Supports Regional Economic Development Plans	20 pts
District Factors/Flexible Points	40 pts
Total	**100 pts**

Efficient Movement of Freight
Weight: 5% minimum - 30% maximum

Truck Volume	50 pts
Freight Bottlenecks	25 pts
District Factors/Flexible Points	25 pts
Total	**100 pts**

Quality of Communities
Weight: 5% minimum - 30% maximum

Complies with Local/Regional Land-Use Plans	25 pts
Connectivity	25 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Environmental Protection
Weight: 5% minimum - 30% maximum

Environmental Index	50 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

Safety
Weight: 15% minimum - 40% maximum

Safety Index	50 pts
Safety Concern	25 pts
District Factors/Flexible Points	25 pts
Total	**100 pts**

Taking Care of the System
Weight: 5% minimum - 30% maximum

Bridge Condition (of bridge to be replaced)**OR** Pavement Condition (of lanes to be replaced)	25 pts
Substandard Roadway **OR** Substandard Bridge Features	25 pts
District Factors/Flexible Points	50 pts
Total	**100 pts**

- **The glossary explains how each factor is scored.**
- **MoDOT Districts will allocate 50% of the weight among all investment goals. In addition, "District Factors/Flexible Points," maybe used to capture unique items that are important to an individual region or they may be allocated among existing factors.**
- **The weight of investment goals must meet minimum and maximum percentages noted above. The point values listed with each factor are recommendations and may be changed at the district's discretion.**
- **The total weight of all investment goals must equal 100%.**
- **MPOs designated as Transportation Management Areas may develop their own regional and emerging needs prioritization process, subject to certification by MoDOT.**

Major Projects: System Expansion

New major roadway, new bridge and roadway expansion projects

Prioritization Process

Major Projects: System Expansion
11/04/2003

This process does not apply in TMA areas

Access to Opportunity
Weight: 5%

Vehicle Ownership	75 pts
Eliminate Bike/Ped Barriers	25 pts
Total	**100 pts**

Congestion Relief
Weight: 30%

Level of Service	40 pts
Daily Usage	30 pts
Functional Classification	30 pts
Total	**100 pts**

Economic Competitiveness
Weight: 15%

Strategic Economic Corridor	40 pts
Level of Economic Distress	30 pts
Supports Regional Economic Development Plans	30 pts
Total	**100 pts**

Efficient Movement of Freight
Weight: 5%

Truck Volume	60 pts
Freight Bottlenecks	20 pts
Intermodal Freight Connectivity	20 pts
Total	**100 pts**

Quality of Communities
Weight: 5%

Complies with Local/Regional Land-Use Plans	50 pts
Connectivity Between Cities/Regions	50 pts
Total	**100 pts**

Environmental Protection
Weight: 5%

Environmental Impact	100 pts
Total	**100 pts**

Safety
Weight: 30%

Safety Index	80 pts
Safety Concern	20 pts
Total	**100 pts**

Taking Care of the System
Weight: 5%

Bridge Condition (of bridge(s) to be replaced/rehabbed)	40 pts
Pavement Condition (of lanes to be replaced/rehabbed)	40 pts
Substandard Roadway Features	20 pts
Total	**100 pts**

- **The glossary explains how each factor is scored.**
- **Because this is a statewide process, there is no flexibilty in investment goal weight.**

Appendix 4 – Glossary of Acronyms and Terms

Aviation Investment and Reform Act for the 21st Century (AIR-21) - The Aviation Investment and Reform Act for the 21st Century (AIR 21) is a comprehensive reauthorization of the Federal Aviation Administration and the Airport Improvement Program. It seeks to address many of the problems plaguing the aviation system, by making airports and skies safer, by injecting competition into the airline industry and by ensuring the investment taxpayers have made in the Aviation Trust Fund is returned in the form of affordable, safe air travel.

CEDS – Comprehensive Economic Development Strategy. The CEDS analyzes local conditions, identifies problems and opportunities, defines the vision and goals of the community, designs strategies to accomplish these goals, coordinates activities to implement these strategies and evaluates and updates the process. A successful CEDS process should lead to the formulation and implementation of a program that creates jobs, fosters effective transportation systems, raises income levels, diversifies the economy and improves the quality of life, while protecting the environment

Consultation – (As defined by 23CFR part 450.104) One party confers with another identified party in accordance with an established process, and prior to taking action(s), considers that party's views and periodically informs that party about action(s) taken.

Cooperation – (As defined by 23CFR part 450.104) The parties involved in carrying out the planning, programming and management systems processes work together to achieve a common goal or objective.

Coordination – (As defined by 23CFR part 450.104) The comparison of the transportation plans, programs and schedules of one agency with related plans, programs and schedules of other agencies or entities with legal standing, and adjustment of plans, programs and schedules to achieve general consistency.

Corridor Gaps – These are portions of a roadway or corridor of a lower standard or operational function than adjacent sections of the roadway. These gaps mark abrupt changes in the characteristics of the corridor and do not occur at logical termini, such as interchanges or other significant traffic sources.

dTIMS – Deighton Total Infrastructure Management System. This pavement management software will be used in prioritizing the interstate projects. dTIMS uses MoDOT's road condition data and budget projections to conduct a benefit-cost analysis and determine which road improvements provide the best use of transportation dollars.

Federal Transit Act (also known as the Urban Mass Transportation Act) – First established in 1964, this legislation provided matching funds to cities and states for large-scale urban transportation projects.

Functional Needs – These are needs categorized as operational aspects of the transportation system. Examples of a functional need are a route that has been identified to have a congestion problem or an intersection that is not large enough, making it difficult for trucks to make turns.

IRI – International Roughness Index. The index measures pavement roughness in terms of the number of inches per mile that a laser, mounted in a specialized van, jumps as it is driven across the interstate and expressway system. The lower the IRI number, the smoother the ride.

Local Officials – Individuals elected by the citizens of Missouri. Local officials may designate appointees to represent them in the transportation planning and decision-making process.

LRTD – Long-Range Transportation Direction -- this is the title of MoDOT's first long-range transportation plan. The Missouri Highways and Transportation Commission adopted it in October 2001.

LRTP – According to the federal register (23 CFR 450.206), MoDOT is required to work with local metropolitan planning organizations and those areas not represented by an MPO to develop a comprehensive long-range transportation plan.

Major Bridge – Any structure with an overall length of 1,000 feet from abutment to abutment.

MHTC – Missouri Highways and Transportation Commission

MoDOT – Missouri Department of Transportation

MPO – Metropolitan Planning Organization. Defined as a region that has an urbanized area with a population over 50,000 people. Missouri has three large MPOs – St. Louis, Kansas City and Springfield – and four small MPOs -- Joplin, St. Joseph, Columbia and Jefferson City.

Needs Database – This is under development to track Missouri's transportation needs in a coordinated effort. The database's goal is to provide a mechanism through which MoDOT can track needs in a useful format as they are identified. .

Physical System Needs – These needs concern the physical condition of an element of the transportation system. Examples are a pavement condition of "very poor" or a bridge element rating of a "3."

Planning Partner – This is used throughout the planning framework document and refers to Missouri's MPOs, RPCs, TMAs and local officials that comprise their boards of directors.

RPC – Regional Planning Commission. A central planning agency representing multi-county rural regions that coordinates local governments on a regional scale in efforts that include transportation planning. There are 19 RPCs representing 114 counties in Missouri.

RTP – Regional Transportation Plan. To gather input from the regional planning commissions, MoDOT is requiring all RPCs to develop a regional transportation plan. These plans will be developed by the RPC and sent to MoDOT district staff and General Headquarters for approval.

Rural Major Projects Task Force – This group consists of the district engineers from all districts, the director of project development, the director of operations and the transportation planning director. The purpose of this task force is to facilitate the major project prioritization process for those areas that are not represented by a TMA and to program corridor studies of statewide significance.

STIP – Statewide Transportation Improvement Plan. The STIP, prepared annually, sets forth the specific construction projects MoDOT will undertake in the next five years. As one year is completed, a new year is added. It covers highways and bridges, transit, aviation, rail, waterways, enhancements and other projects. It is the project-specific product that tells Missourians what improvements to expect on their transportation system.

TAC – Transportation Advisory Committee. This is part of the RPC whose membership is appointed by the board of directors. TACs provide a link to the local officials and represent citizens in the rural parts of Missouri.

TCOS – Taking care of the system

TEA 21 – Transportation Equity Act for the 21st Century. TEA-21 authorizes the federal surface transportation programs for highways, highway safety and transit for the six-year period 1998-2003.

TMA – Transportation Management Area. These are large metropolitan planning organizations with an urbanized population of over 200,000 people. Missouri has three TMAs -- St. Louis, Kansas City and Springfield.

TMS – Transportation Management Systems is a transportation database application tied together by a common location referencing system. It is a compilation of crash data, roadway features, traffic volumes, pavement characteristics and many transportation related inventories. The TMS application is available to all MoDOT employees.

TP – MoDOT's Transportation Planning office in General Headquarters at Jefferson City

Appendix 5 – Glossary of Prioritization Factors

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NOTE: Total Point Value (TPV) represents the maximum point value for a given factor. The Total Points awarded for the factor cannot be negative and cannot be more than the TPV. These limits are implied in the formulas that follow even if not expressly written.

Accident Rate

The Accident Rate (AR) can either be segment based (rate per Hundred Million Vehicle Miles) or intersection based (rate per Million Entering Vehicles). The Statewide Accident Rate (SWAR) is the average accident rate for similar routes/intersections throughout the state. The score for the accident rate is based on the ratio of the project segment's Accident Rate (AR) over the Statewide Accident Rate (SWAR). Both AR and SWAR are measured for the same three-year period.

Data:
AR = Accident Rate of roadway segment or intersection
SWAR = Statewide Accident Rate of similar segments or intersections

Formula:
Total Points = TPV × (AR / SWAR – 1)

Accident Severity

Accident Severity is based upon the number and severity of crashes and expressed through the Severity Ratio. The Equivalent Property Damage Only (EPDO) number shall be calculated based upon the following factors:

Data:
EPDO = Equivalent Property Damage Only Crashes
TNC = Total Number of Crashes
SR = Severity Ratio

Formula:
EPDO = 9 × Fatal Crashes + 3.5 × Injury Crashes + 1.0 × Property Damage Only Crashes
SR = EPDO / TNC

Total Points = TPV × (SR – 1)

Annual Average Daily Traffic (AADT)

See: **Daily Usage**

Bridge Condition

Every bridge has three condition ratings: one for the bridge deck, one for the substructure, and one for the superstructure. The deck bridge condition rates the overall condition of the bridge deck on a scale of "1" through "9", with "1" being the worst condition and "9" being the best condition. The substructure bridge condition rates the physical condition of piers, abutments, piles, fenders, footings and other components using the same scale. The superstructure bridge condition rates the condition of structural members, also using the same "1" through "9" scale.

Bridge Condition is scored using a composite of the worst bridge condition rating of the three types (deck, substructure or superstructure) and an average of the remaining two bridge condition ratings.

Data:
BC_D = Deck Condition Rating
BC_{SUB} = Substructure Condition Rating
BC_{SUPER} = Superstructure Condition Rating

Formula:
BC_{LOW} = Minimum (BC_D, BC_{SUB}, BC_{SUPER}) { *Worst condition rating* }
BC_{AVG} = ($BC_D + BC_{SUB} + BC_{SUPER} - BC_{LOW}$) ÷ 2 { *Average of the two BEST ratings* }

1st Points = $0 \leq (6 - BC_{LOW}) \div 3 \times ½ \times TPV \leq ½ \times TPV$
2nd Points = $0 \leq (6 - BC_{AVG}) \div 3 \times ½ \times TPV \leq ½ \times TPV$

Total Points = 1st Points + 2nd Points

Examples:
Bridge 1: Regional and Emerging Needs Project
Deck Condition = 3, Superstructure Condition = 4, Substructure Condition = 5

$BC_{LOW} = BC_D = 3$
$BC_{AVG} = ½ \times (BC_{SUB} + BC_{SUPER}) = [(5+4)/2] = 4.5$

1st Points = $(6 - 3) / 3 \times ½ \times TPV = ½ \times TPV$
2nd Points = $(6 - 4.5) / 3 \times ½ \times TPV = ¼ \times TPV$

TPV = 40 (for example)
Total Points = $½ \times 40 + ¼ \times 40 =$ **30**

<u>Bridge Width</u>
See **Substandard Bridge Features.**

<u>Compliance with Regional or Local Land Use Plan</u>
Regional Planning Commissions (RPCs) and Metropolitan Planning Organizations (MPOs) will be responsible for identifying relevant land use plans (comprehensive or master plans) for a project area, and will also be responsible for determining whether or not the project complies with the plan(s). Projects in areas that do not have an adopted land use plan do not score points for this factor.

In the event that multiple land use plans are applicable to a project, the project must be in compliance with the plan(s) that cover the majority of the project area.

Scoring:
Does the project comply with regional or local land use plans? If "yes," then award TPV. If "no," then award zero points.

Compliance with Regional or Local Transportation Plans

Regional Planning Commissions (RPCs) and Metropolitan Planning Organizations (MPOs) will be responsible for determining whether or not a functional transportation need is identified in their long-range transportation plan and whether addressing that need is in compliance with the plan.

In Metropolitan Planning Organization areas, no project utilizing Federal funds may be programmed unless the project complies with the MPO long-range transportation plan. This requirement is mandated by Federal law and applies to all types of projects. It is also assumed that, in general, MoDOT will not be programming projects that are not in compliance with the RPC long-range transportation plans.

Cities and counties also address transportation in their own comprehensive plans. In addition, all jurisdictions may compose a plan for a specific corridor.

Scoring (as a percentage of TPV):

Select ONE of the following plans which identifies the need:	
MPO Long-range Transportation Plan	100%
RPC Long-range Transportation Plan	80%
City or County Comprehensive Plan	60%
Corridor Plan	60%

Connectivity

Connectivity between activity centers is important on the local and regional scale. Activity centers are sub-regional or sub-community districts that generate a concentration of trips such as schools and colleges, shopping centers, government complexes, apartment complexes, and hospitals. The scale of activity centers is dependent on the size of the community. Activity centers relevant to a project or need should be identified in a collaborative process involving Regional Planning Commission or Metropolitan Planning Organization and local officials. Connectivity between activity centers for statewide needs may be defined as connectivity between cities and regions.

For this process, connectivity between cities and regions focuses on connecting urban centers throughout Missouri. The U.S. Census Bureau has defined cities as densely populated areas called *Urban Clusters* and *Urbanized Areas*. These urban areas are typically regional centers for trade, education, healthcare and government. For purposes of prioritization, connectivity will applies to improved connections between Urban Clusters (over 5,000 population) and/or Urbanized Areas (over 50,000 population).

Scoring:

For projects: Does the project improve a connection between activity centers or between cities and regions? If "yes," award the TPV. If "no," award zero points.

For needs: Does the need include a problem with sufficient connectivity between activity centers or between cities and regions? If "yes," award the TPV. If "no," award zero points.

Daily Usage (DU)
Defined as the total volume of traffic passing a point or segment of a highway for one year divided by the number of days in the year and number of through lanes. The AADT and the number of through lanes can be found in TMS in the SOS Detail Browser.

Data:
NL = Number of through (driving) lanes
AADT = Annual Average Daily Traffic
DU = Daily Usage

Formula:
DU = AADT/NL

Total Points = $(DU / 17{,}500)^2 \times TPV$

Detour Length
See **User Costs.**

District Factors/Flexible Points
MoDOT Districts, in collaboration with MoDOT's planning partners, designate additional factors to be used to evaluate each investment goal. Factors from other prioritization processes may be used as a district factor. Districts may also increase the point value of factors used in the core process. The use of points for other factors should be documented as an addendum to this glossary.

Elimination of Bike/Pedestrian Barriers
The elimination of bike and pedestrian barriers is necessary to promote an integrated walking and biking system in Missouri communities. This prioritization factor focuses on areas where there is likely to be a bike and/or pedestrian need. Items 3 and 4 should be used only when items 1 or 2 do not apply.

Scoring (as a percentage of TPV):

Scoring: The project scores consists of the sum of the points for each of the following	
1. Project improves a **bike** connection between complimentary land uses (e.g. between commercial, institutional and residential uses) or between complimentary land uses and transit stops.	40%
2. Project improves a **pedestrian** connection between complimentary land uses (e.g. between commercial, institutional and residential uses) or between complimentary land uses and transit stops.	60%
3. Project brings an *existing* pedestrian connection into compliance with the Americans with Disabilities Act (ADA).	20%
4. Project provides bike and/or pedestrian accommodations not applicable to any of the above situations.	20%
5. Project provides *no* bike or pedestrian accommodations.	0%
Maximum Possible Total Points:	**100%**

Environmental Index
As part of MoDOT's investment goal to protect the natural environment, the Federal environmental review process is used as an indicator for environmental impact.
This factor specifically favors projects where no environmental mitigation is required.

Scoring:
Does the project require environmental mitigation? If "yes," award zero points. If "no," award TPV.

Exceptional Bridge
An exceptional bridge is one that has a deck or superstructure rating of 4 or less; or a substructure rating of 5 or less **and** one of the following items: permanent shoring, requires extensive or habitual maintenance, or requires maintenance beyond the capabilities of the MoDOT district's repair crews.

Scoring:
Does the project rehabilitate or replace an exceptional bridge? If "yes," award TPV. If "no," award zero points.

Freight Bottlenecks
MoDOT districts in consultation with RPCs and MPOs identify freight bottlenecks. Examples of freight bottlenecks include load posted bridges, inadequate vertical or horizontal clearances, or gaps in the freight movement system.

Scoring:
Does this project eliminate one or more freight bottlenecks? If "yes," award TPV. If "no," award zero points.

Functional Classification
The Functional Classification (FC) system groups streets and highways according to the character of service they are intended to provide. The FC can be found in TMS in the SOS Detail Browser. For purposes of this process, the principal arterial functional classification is further divided into design types: interstates, freeways, expressways and other principal arterials.

Scoring (as a percentage of TPV):

	Functional Class	% TPV
Principal Arterials	Interstate	100%
	Freeway	100%
	Other	100%
	Expressway	100%
	Major Collector	50%
	Minor Arterial	40%
	Minor Collector	40%
	Collector	20%
	Local	20%
	Other	0%

Functional Obsolescence of Bridge
See **Substandard Bridge Features**

Intermodal Freight Connectivity
Intermodal connectivity includes improving connections between transportation modes for freight. Intermodal freight facilities are identified by MoDOT districts, RPCs and MPOs, and include water ports, airports, rail terminals and truck terminals. Emphasis should be placed on connectivity between facilities where freight changes modes.

Scoring:
Does the PROJECT improve connectivity with an intermodal freight facility OR is this a NEED to provide a better connection to an intermodal freight facility? If "yes," award TPV. If "no," award zero points.

International Roughness Index (IRI)
See Pavement Smoothness

Level of Economic Distress
The level of economic distress is measured through poverty rates and unemployment levels within the project area or corridor. The poverty rate will be compared with statewide and regional or district averages. For purposes of prioritization, an unemployment rate of 10% or more is considered high.

Scoring: The project scores consists of the sum of the points for each of the following	
The percentage of persons below the poverty level in the project area is higher than the statewide average.	30%
The percentage of persons below the poverty level in the project area is high than the RPC level.	40%
Unemployment is greater than 10%	30%
Unemployment is between 5% and 10%	15%
Unemployment is less than 5%	0%
Maximum Possible Total Points	**100%**

Level of Service
Level of Service (LOS) is current year LOS and is a measure describing operational conditions within a traffic stream. Six LOS are defined for each type of facility. Letters designate each level, from A to F, with LOS A representing best operating conditions and Level of Service F the worst. For each process, the project is assigned a number of points based on the level of service currently experienced in the corridor. The worse the level of service is, the higher the score is. The LOS can be found in TMS in the SOS Detail Browser.

Scoring (as a percentage of TPV):

LOS	Score
A	0%
B	20%
C	40%
D	60%
E	80%
F	100%

Load Rating

Load Rating should be scored based on the load capacity of the structure. If a major structure is load posted for legal loads, then it should always have the highest score. If no load posting exists, then the inventory rating can be used to come up with a score of the load capacity of the structure in relation to the current design loading. The inventory rating is a representation of the load capacity of a structure in relation to current design loads.

Scoring:

a. If bridge is posted for Legal Loads then the score = 100% TPV
b. If Bridge is not posted for Legal Loads, then determine the score as follows:

Score = [1- (inventory rating) ÷ 36] × TPV

Metropolitan (MPO) Long-range Transportation Plan

See **Compliance with Regional or Metropolitan Long-range Transportation Plan**

Pavement Condition

The Pavement Condition score includes distresses (cracking, rutting, spalling, etc.) that are present in the pavement. The range for the condition score is 0 –20 with 20 indicating pavement in perfect condition. The first table shows the pavement condition score and the classification of the pavement condition ("good", "fair", "poor", etc.) The relationship between pavement condition and the prioritization score is shown in the last column of the table.

Condition Classification	Condition Score		Score (% TPV)
	NHS	Non-NHS	
Very Good	18.9 - 20	18.9 - 20	0%
Good	17.8 - 18.8	17.7 - 18.8	25%
Fair	16.4 - 17.7	15.9 - 17.6	50%
Poor	15.3 - 16.3	14.3 - 15.8	75%
Very Poor	0 – 15.2	0 - 14.2	100%

Pavement Smoothness
Smoothness is measured by the International Roughness Index (IRI). The IRI varies from approximately "0" to "300", with "0" indicating a perfect roadway. The measurement for IRI used and how the ratings are scored in the prioritization process is shown in the table below.

Smoothness Rating	IRI	Score (% TPV)
Very Good	< 60	0%
Good	60 – 94	25%
Fair	95 – 170	50%
Mediocre	171 – 220	75%
Poor	> 220	100%

Safety Concern
MoDOT receives input from the public and officials from other government agencies that includes numerous safety concerns. Some of these concerns are backed by MoDOT's safety data, while other concerns are not supported by MoDOT's data. Both types of safety concerns have a role in this prioritization process.

Safety concerns should be identified through documented trends in MoDOT customer service reports, public input from the planning process, and input from local and regional planning partners.

Scoring:
Does the PROJECT address a documented safety concern OR is the NEED a documented safety concern? If "yes," award TPV. If "no," award zero points.

Safety Enhancements
Safety Enhancements include the need for items such as guardrail, guard-cable, clear zones, etc.

Scoring:
Does the PROJECT address a need for safety enhancements? If "yes," award TPV. If "no," award zero points.

Safety Index
The safety index is made up of the following components:

1. **Accident Index (10%)** – compares the total accident rate to the statewide rate
2. **Severity Index (60%)** - compares the rate of injury and fatal crashes to statewide rates
3. **High Accident Index (15%)** - assigns a value based on locations that show up on the annual high accident listing
4. **Wet / Dry Index (15%)** – assigns a value based on locations that show up on the annual wet/dry listing

The Safety Index (SI) can be found in TMS in the SOS Detail Browser. The values are based on Traffic Information Segments (typically major intersection to major intersection). The value of the SI will be a number between 1 and 5; with 5 being a safety rating of "Very Good" and 1 being a safety rating of "Very Poor". If the project encompasses more than one Traffic Information Segment, then the SI shall be a weighted average based on the length of each segment.

Data:
SI = Safety Index

Formula:
Total Points = (5 – SI) × ¼ × TPV

Strategic Economic Corridor

Strategic Economic Corridors are corridors that connect regional economic centers in Missouri and adjacent states. The regional economic centers selected for this process are based on information from the Missouri Department of Economic Development and the Office of Social and Economic Data Analysis at the University of Missouri. All interstates are considered strategic economic corridors. A list of regional economic centers and examples of strategic economic corridors follows:

Regional Economic Centers	
Missouri	**Out of State**
Branson	Omaha, NB
Cape Girardeau	Fayetteville, AR
Chillicothe-Brookfield	Jonesboro, AR
Columbia	Paducah, KY
Farmington	Memphis, TN
Fort Leonard Wood	Springfield, IL
Hannibal	Quincy, IL
Jefferson City	Ottumwa, IA
Joplin	Des Moines, IA
Kirksville	Pittsburg, KS
Kansas City	Wichita, KS
Lake of the Ozarks	Tulsa, OK
Poplar Bluff	
Rolla	
Sedalia	
Sikeston	
Springfield	
St. Joseph	
St. Louis (including St. Charles)	
Warrensburg-Knob Noster	
West Plains	

Example Corridors	
I-70	Topeka - Kansas City – Columbia – St. Louis
I-44	Tulsa - Joplin – Springfield – Ft. Wood – Rolla –St. Louis
I-35	Kansas City – Des Moines
I-55	St. Louis – Cape Girardeau – Sikeston – Memphis
I-29	Kansas City – St. Joseph – Omaha
U.S. 60/360	Springfield – Poplar Bluff – Sikeston – Paducah
U.S. 36	Hannibal – Chillicothe – St. Joseph
U.S. 71	Maryville – St. Joseph – Kansas City – Joplin – Fayetteville
U.S. 60/37	Springfield – Fayetteville
U.S. 54	Wichita – Lake of the Ozarks – Jefferson City
Route 5	Springfield – Lake of the Ozarks – Jefferson City
Route 13	Kansas City – Springfield
U.S. 63	Ottumwa – Kirksville - Columbia – Jefferson City – Rolla – West Plains
U.S. 65	Des Moines – Chillicothe – Sedalia – Springfield – Branson
U.S. 50	Kansas City – Warrensburg/Knob Noster – Sedalia – Jefferson City – St. Louis
U.S. 67	St. Louis – Farmington – Poplar Bluff
Route 171/U.S. 400	Joplin – Pittsburg -- Wichita
All other Interstates	Various

Scoring:
Does the project improve a strategic economic corridor? If "yes," award TPV. If "no," award zero points.

Substandard Bridge Features
Bridges that do not meet the standards of MoDOT's long-range transportation plan are considered obsolete.

Scoring:
Does the PROJECT address substandard bridge features OR are substandard bridge features part of this NEED? If "yes," award TPV. If "no," award zero points.

Substandard Roadway Features
Substandard roadway features include aspects such as the lane width or shoulder width, as defined in MoDOT's long-range transportation plan.

Scoring:
Does the PROJECT address substandard roadway features OR are substandard roadway features part of this NEED? If "yes," award TPV. If "no," award zero points.

Supports Regional Economic Development Plans
The potential to promote economic development is determined by compliance with the regional economic development plan. Some RPCs have prepared a Comprehensive Economic Development Strategy (CEDS). MPOs have an economic development component in their LRTPs. RPCs and MPOs must use these as their regional economic development plans. *Where there is no current CEDS*, the RPC or MPO is tasked with identifying the economic development plan for their area. The RPC or MPO may use regional and community economic development plans written by the local Chambers, cities and counties, or economic partnerships. RPCs and MPOs will be responsible for determining if a project is in compliance with the regional economic development plan, or if the need is identified in the regional economic development plan.

Scoring:
Does this project or need comply with a Regional Economic Development Plan? If "yes," award TPV. If "no," award zero points.

System Efficiency
System efficiency promotes improved traffic flow without adding lanes to a roadway. Some examples of system efficiency techniques are access management, intelligent transportation systems, and transportation demand management.

Scoring (as a percentage of TPV):

Project does not include system efficiency elements	**0%**
Project includes elements of both roadway expansion and system efficiency	**50%**
Project improves system efficiency without roadway expansion	**100%**

Truck Usage
Truck usage is used to indicate the impact of heavy vehicles on the state system and the movement of freight on the state system.

Data:
VTR = Estimated Volume of Trucks
NL = Number of through (driving) lanes
TU = Truck Usage

Formula:
TU = VTR/NL

Total Points = $(5 \times TU)^{1/2} \div 100 \times TPV$

Truck Volume
Truck volume is used to indicate movement of freight on the state roadway system. The estimated volume of trucks is found in TMS as TOTAL COMMERCIAL VOLUME.

Data:
TV = Total Commercial Volume

Formula:
Total Points = $(2.5 \times TU)^{1/2} \div 100 \times TPV$

User Cost Index (Detour Length)
User cost, for purposes of the prioritization process, currently only considers detour length. The detour length is weighted by the amount of traffic to give the prioritization score.

Data:
DL = Detour Length (miles)
AADT = Annual Average Daily Traffic
UCI = User Cost Index

Formula:
UCI = DL × AADT
Total Points = UCI ÷ 1,000,000 × TPV

Vehicle Ownership
The intent of this factor is to be a proxy for needs for other modes of transportation. While vehicle ownership does not always mean there is a need for other modes of transportation, a general correlation can be made. This data is based on 2000 Census data, and is scored on percentage of households **WITHOUT** a vehicle, compiled by county. The percentages ranged from 3.6 to 25.2%.

Data:
PW = Percentage of households WITHOUT a vehicle

Formula:
Total Points = (PW – 4%) ÷ 4.9% × TPV