EAST-WEST GATEWAY
Council of Governments
Creating Solutions Across Jurisdictional Boundaries

MEMORANDUM

TO: **Transportation Planning Committee**

FROM: **East-West Gateway Staff**

DATE: **July 27, 2017**

SUBJECT: **Wednesday, August 2, 2017 meeting**

The next meeting of the joint Illinois/Missouri Transportation Planning Committee (TPC) is scheduled for **Wednesday, August 2, 2017 at 2:00 p.m. at East-West Gateway Council of Governments offices**. (Reminder parking is available at Stadium-East Garage)

If you have any questions or concerns regarding the enclosed materials or the upcoming meeting please contact EWGCOG. The agenda for the meeting is as follows:

AGENDA

1. Call to order
2. New criteria for Surface Transportation Block Grant Program project applications (discussion item)
3. Transportation Alternatives Program – 2017 funding round project recommendations
   - Illinois projects (action item)
   - Missouri projects (action item)
4. Other Business
   - Next meeting (combined MO/IL TPC) scheduled for Wednesday September 6, 2017 at 2 PM

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To: Transportation Planning Committee

From: East-West Gateway Staff

Date: July 27, 2017

Subject: Draft Scoring Criteria for Local Program Application – Surface Transportation Block Grant Program (STP-S)

Background

The current transportation law, Fixing America's Surface Transportation (FAST) Act, continues the reforms begun by the previous law, Moving Ahead for Progress in the 21st Century (MAP-21). This includes transitioning to a performance-driven, outcome-based program, and the establishment of performance goals for Federal-aid highway programs (23 USC 150). Performance-based planning and programming ensures that resources are invested in projects that make progress toward achieving critical outcomes for the region.

As the Metropolitan Planning Organization for the St. Louis region, East-West Gateway Council of Governments (EWG) is charged with developing a performance-based long-range transportation plan, as well as a corresponding project evaluation structure for developing the Transportation Improvement Program (TIP) (23 USC 134 (j)).

Projects in the TIP must be consistent with the investment priorities (i.e., the ten guiding principles) of *Connected2045*, the long-range transportation plan for the St. Louis region, and link the priorities to the performance goals. These investment priorities guide transportation system evaluation and decision making, which includes the selection of the Surface Transportation Block Grant Program (STP-S) projects. STP-S provides flexible funding that may be used by local governments for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge project on any public road, pedestrian and bicycle infrastructure, and transit capital projects.

The policies in *Connected2045* reflect regional and national goals and guide the prioritization of federal funding for all modes of transportation, including roads, bridges, public transportation, freight, bicycle, pedestrian, and paratransit. To align with the goals of *Connected2045*, EWG is revising the project application and selection process for the STP-S program to ensure that projects of all types are considered equally for funding and are selected through a performance-driven approach.

STP-S Selection Criteria Development

In August 2016, EWG convened six focus groups consisting of representative regional experts. The focus groups were organized by project application type: road and bridge infrastructure, traffic flow, safety, active transportation, transit, and freight and economic development. Two meetings were held for each focus group to discuss criteria pertaining to the application type

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and to provide feedback to EWG. Feedback was also accepted from regional experts who were not able to attend the focus group meetings. The feedback from the focus groups was incorporated into the draft scoring criteria.

In September 2016, the draft scoring criteria were presented to the Missouri and Illinois Transportation Planning Committee (TPC) and the Bicycle and Pedestrian Advisory Committee (BPAC). The TPC and BPAC provided feedback to staff on the draft scoring criteria. The revised draft scoring criteria were presented to the TPC at their October 2016 meeting.

STP-S Test Evaluation

EWG staff administered a STP-S test evaluation of the projects submitted for funding during the FY 2018-2021 TIP cycle. This enabled staff to determine if the evaluation was working as intended. EWG revised the STP-S application to include questions pertaining to the draft scoring criteria. The STP-S application was available on December 1, 2016 and due on March 2, 2017. EWG staff evaluated the projects based on the FY 2018-2021 TIP evaluation criteria and the funding recommendations were made by the TPC in May 2017. The Missouri TPC recommended funding 45 STP-S projects, totaling $37.4 million federal. The Illinois TPC recommended funding 13 STP-S projects, totaling $5.3 million federal.

After the TPC made their STP-S project recommendations, EWG staff started the test evaluation using the draft scoring criteria. The project applications were evaluated by seven EWG staff. Each project can receive a maximum of 100 performance points and up to 10 additional points for usage and cost. Projects with a higher usage can receive up to four points and projects with a lower cost can receive up to six points.

After the test evaluation was complete, staff was able to determine what was working with the criteria and what needed to be modified. The modifications to the draft evaluation criteria follow:

- Bridge projects were not scoring as high as they should due to their importance to the transportation system.
    - Solution: The bridge criteria were separated from the road criteria. The Promote Safety metric was revised to evaluate bridge deficiencies instead of the crash rate. The Strengthen Intermodal Connections metric was revised to include posted bridge weight limits instead of the facility's location on an intermodal facility or in an industrial site area.
- Using Planning Time Index (PTI) and Travel Time Index (TTI) to score traffic flow projects were problematic since the data was not available for many projects. For projects where the data were available, staff could not get the data for the exact project limits, which skewed the PTI and TTI scores. In addition, the congestion strategies offered only an estimate of the delay reduction.
    - Solution: The metric was revised so that changes in travel conditions are evaluated. Points are assigned based on increase in speed or decrease in delay.
- Emissions reduction was not included in the traffic flow evaluation.
    - Solution: The Protect Air Quality and Environmental Assets metric was revised to include emissions reduction.
- A regional total crash rate and fatal and serious injury crash rate could not be determined, therefore, projects could not be compared to those crash rates.
    - Solution: All projects with crashes will be grouped into quartiles for both the total crash rate and the fatal and serious injury crash rate. Projects with high crash rates and high fatal and serious injury crash rates will earn more points. To earn points under the Promote Safety metric, the project must include a safety countermeasure to address the crashes.

- In the safety application, the benefit/cost was problematic. Applicants had issues measuring the lifespan and the maintenance costs for countermeasures.
    - Solution: EWG will provide clarification in the workbook and at future STP-S workshops.
- The bicycle and pedestrian metric needed to be better defined.
    - Solution: The intent is still the same, but staff developed a matrix to make it more simple and understandable.
- In the active transportation application, the Preserve and Maintain criterion was removed. It was determined that preservation of on-street bicycle facilities cannot be accomplished through the active transportation application.
    - Solution: The points were reallocated to the Support Public Transit and Support Neighborhoods criteria. The preservation of pedestrian facilities is being accounted for in the Provide More Transportation Choices criterion. A sidewalk in poor condition is considered a gap.
- Transit projects can include asset management, system upgrades, and system expansion. The metrics used to evaluate each project type vary because of the range of transit capital project types. This was making the criteria hard to follow because of the different project tracks.
    - Solution: The transit application was split into two different schemes: transit asset management & system upgrades and transit expansion. This made the criteria easier to understand and navigate.
- Transit preservation projects were not receiving points under the Preserve and Maintain criterion.
    - Solution: The Preserve and Maintain metric was revised to account for preventative maintenance and the average mileage of vehicles to be replaced.
- In the freight application, sponsors scored the maximum points if the project is located in an industrial site area and provided a connection to an intermodal facility. In addition, the metric did not address commercial vehicle improvements.
    - Solution: It was determined that the industrial site areas need to be ranked. Staff is currently developing the metrics to rank the industrial site areas into three tiers: mega, major, and intermediate. Projects will earn points if they improve freight mobility.

The draft scoring criteria values had to be adjusted to account for the noted improvements. Other minor revisions also occurred. **Attachment A** provides detail on the modifications to the draft scoring criteria. After the adjustments were made to the draft scoring criteria, the project applications were rescored.

STP-S Test Evaluation Results

In Missouri, a total of 32 projects fell within the project funding recommendation range using the draft scoring criteria, totaling $37.6 million federal. Out of the 45 STP-S projects recommended for funding through the FY 2018-2021 TIP evaluation criteria, 19 of those projects would fall within the project funding recommendation range through the draft scoring criteria. **Attachment B** provides a scatter plot showing how the projects scored under the FY 2018-2021 TIP evaluation criteria and the draft scoring criteria. A green triangle represents a project that was not recommended under the FY 2018-2021 TIP evaluation criteria, but would fall within the project funding recommendation range under the draft scoring criteria. A red triangle represents a project that was recommended under the FY 2018-2021 TIP evaluation criteria, but would not fall within the project funding recommendation range under the draft scoring criteria.

In Illinois, a total of 11 projects fell within the project funding recommendation range using the draft scoring criteria, totaling $5.3 million federal. Out of the 13 STP-S projects recommended for funding through the FY 2018-2021 TIP evaluation criteria, seven of those projects would fall within the project funding recommendation range through the draft scoring criteria. **Attachment C** provides a scatter plot

showing how the projects scored under the FY 2018-2021 TIP evaluation criteria and the draft scoring criteria. A green triangle represents a project that was not recommended under the FY 2018-2021 TIP evaluation criteria, but would fall within the project funding recommendation range under the draft scoring criteria. A red triangle represents a project that was recommended under the FY 2018-2021 TIP evaluation criteria, but would not fall within the project funding recommendation range under the draft scoring criteria.

The main finding from the test evaluation indicated that the project cost had less influence on the final ranking. Under the FY 2018-2021 TIP evaluation criteria, the final project score is determined by points scored in the priority areas, usage, roadway functional classification, and the useful life of the proposed facility. The project cost (federal cost in Missouri and total construction cost in Illinois) is divided by the project points to determine the cost-effectiveness score. Projects with a higher cost-effectiveness were recommended for funding. Projects that had a very low cost tended to have a higher cost-effectiveness, even if they did not gain a lot of points in the priority areas. In addition, the reconstruction of short road segments tended to have a higher cost-effectiveness as it had a high useful life and low cost due to the short length. On the contrary, projects that gained a lot of points in the priority areas due to incorporation of multimodal project elements or safety improvements tended to have a lower cost-effectiveness and may not have been recommended since the cost was likely to be higher. Under the draft scoring criteria, the cost points are added to the performance points. Therefore, the project cost was not as much of a deterrent to the overall score.

Other findings from the test evaluation indicated:

- On average, projects that scored the highest performance points had a higher cost. Similarly, high scoring projects tended to have a higher usage.
- In general, projects that scored maximum points or close to maximum points in its primary purpose scored well. Projects that scored high in its primary purpose and addressed more criteria scored even better.
- The usage and cost points did not have a great impact on the overall project score.
- Preservation projects are still the prevalent project type to receive a funding recommendation. Preservation projects that do not score high in its primary purpose are still competitive if they were multimodal and includes safety improvements.
- Structurally deficient bridges with low ratings scored very well in the evaluation.
- Safety projects that include safety countermeasures scored high in the primary purpose and were very competitive with preservation projects.
- Bicycle and pedestrian projects that are more regional in nature fare better. This includes larger-scale projects and bicycle and pedestrian projects that connect to the regional network (i.e., the River Ring). Although we did not receive larger-scale bicycle or pedestrian projects during this TIP cycle, staff evaluated three projects from previous TIP cycles. One of the test projects filled in a major gap in the bicycle network and another project provided multi-modal access to a regional destination. It was determined that these projects would receive high scores and would be competitive as an active transportation project type.
- EWG did not receive freight or economic development project type applications. Staff administered a separate test evaluation on two road projects with freight characteristics using the draft freight scoring criteria. One of the test projects addressed multiple criteria. The project received a high score and would be competitive as a freight project type.
- Staff administered a separate test evaluation on seven CMAQ applications using the updated draft traffic flow criteria. This allowed staff to determine if the updated traffic flow scoring criteria were appropriate. CMAQ projects were used in the test evaluation because data were available to estimate increases in average speed for road segments or reduction in delay for intersections. Data

were also available to determine the reduction in emissions. Staff determined that the modifications to the traffic flow scoring criteria were appropriate.

Overall, the test evaluation was essential for determining the effectiveness of the draft scoring criteria and enabled EWG to further refine the draft scoring criteria to make it consistent with the goals of *Connected2045*. A copy of the updated STP-S draft scoring criteria is included in **Attachment D** for review.

Next Steps

An update on the STP-S project evaluation process will be presented to the Executive Advisory Committee and Board of Directors in August 2017 as a discussion item. EWG will convene the Missouri and Illinois Transportation Planning Committee on September 6, 2017 to approve the draft scoring criteria. The draft scoring criteria will be submitted to the Board of Directors at its September 27, 2017 meeting for final approval.

Attachment A

The following items were modified from the draft STP-S scoring criteria that were identified in 2016:

Road

- Preserve and Maintain the Existing System – 2 points added. Pavement Management Plan section eliminated (5 points) and points consolidated with road condition (55 to 60 points for road condition). Range of PASER scores modified. 2 points added for project located on National Highway System route. **Section is 62 points total.**
- Support Public Transportation – No change in points. Section modified so that projects located along transit route receive 3 points and projects that intersect transit receive 1 point instead of 2 points. Projects that make physical improvements to transit system receive 2 points. If project is not on transit route, sidewalk connections to transit stops receive 1 point. **Section is 5 points total.**
- Support Neighborhoods and Communities – No change in points. Section revised to include points for East-West Gateway defined environmental justice areas. The East-West Gateway definition of environmental justice includes areas with a high concentration of: zero-car households, seniors, and persons with a disability. **Section is 4 points total.**
- Provide More Transportation Choices – No change in points. Section revised so that improvements on pedestrian and bicycle facilities are both evaluated (4 points each) for improvement type. Also 2 points were added for traffic calming and design improvements and intersection treatments. **Section is 10 points total.**
- Promote Safety – No change in points. Section is revised so that points are assigned based on quartiles of crash rates of all projects submitted during a given STP-S application round instead of a set crash rate. Points are assigned based on total crash rate and fatal/serious injury crash rate. **Section is 8 points total.**
- Support a Diverse Economy with a Reliable System – 1 point subtracted. Section is revised to include maintenance and operations strategies (ITS, traffic operational improvements, etc.) instead of ITS components only. **Section is 1 point total.**
- Support Quality Job Development – No change in points. No change in evaluation. **Section is 4 points total.**
- Strengthen Intermodal Connections – No change in points. This section was modified so that 3 points are assigned if project is in key industrial site area, connects to primary highway freight system, or connects to major intermodal freight facility. 2 points are assigned if the test above is met and if project provides countermeasure to improve freight movement. **Section is 5 points total.**
- Protect Air Quality and Environmental Assets – 1 point subtracted. No change in evaluation. **Section is 1 point total.**

Bridge

- Preserve and Maintain the Existing System – 2 points added for projects located on National Highway System route. **Section is 62 points total.**
- Support Public Transportation – 3 points subtracted for improvements to transit system. Section revised so that projects that projects located on transit route receive 2 points and zero points for projects that intersect transit. **Section is 2 points total.**

- Support Neighborhoods and Communities – No change in points. Section revised to include points for East-West Gateway defined environmental justice areas. The East-West Gateway definition of environmental justice includes areas with a high concentration of: zero-car households, seniors, and persons with a disability. **Section is 4 points total.**
- Provide More Transportation Choices – No change in points. Section revised so that improvements on pedestrian and bicycle facilities are each evaluated (5 points each) for improvement type. **Section is 10 points total.**
- Promote Safety – 5 points added. Section revised so that bridge deficiencies are evaluated instead of crashes. Points are assigned if bridge is structurally deficient and/or functionally obsolete. **Section is 13 points total.**
- Support a Diverse Economy with a Reliable System – 2 points subtracted and section eliminated. Bridges typically have short project limits. ITS components would not have a large impact on facility. **Section is zero points.**
- Support Quality Job Development – No change in points. No change in evaluation. **Section is 4 points total.**
- Strengthen Intermodal Connections – No change in points. Section revised so that bridge weight limits are evaluated instead of project location with relationship to industrial site area. Points are assigned depending on weight restriction on bridge. **Section is 5 points total.**
- Protect Air Quality and Environmental Assets – 2 points deleted and section eliminated. Bridges typically have short project limits. Green infrastructure improvements would not have large impact. **Section is zero points**

Traffic Flow

- Preserve and Maintain the Existing System – No change in points. Range of PASER scores modified. Change in section was to make upgrades to ITS worth 5 points. **Section is 5 points total.**
- Support Public Transportation – No change in points. Section modified so that projects located along transit route receive 3 points and projects that intersect transit receive 1 point instead of 2 points. Projects that make physical improvements to transit system receive 2 points. If project is not on transit route, sidewalk connections to transit stops receive 1 point. **Section is 5 points total.**
- Support Neighborhoods & Communities – 1 point subtracted. Section revised to include points for East-West Gateway defined environmental justice areas. The East-West Gateway definition of environmental justice includes areas with a high concentration of: zero-car households, seniors, and persons with a disability. **Section is 4 points total.**
- Foster a Vibrant Downtown & Central Core – 4 points subtracted. No change in evaluation. **Section is 1 point.**
- Provide More Transportation Choices – 1 point added. Section revised so that improvements on pedestrian and bicycle facilities are each evaluated (2 points each) for improvement type. Also added is 2 points for traffic calming and design improvements and intersection treatments. **Section is 6 points total.**
- Promote Safety – No change in points. Section is revised so that points are assigned based on quartiles of crash rates of all projects submitted during a given STP-S application round instead of a set crash rate. Points are assigned based on total crash rate and fatal/serious injury crash rate. If no crashes along project limits, there is no change to the number of points (5 points). **Section is 10 points total.**

- Support a Diverse Economy with a Reliable System – No change in points. Section revised so that changes in travel conditions are evaluated including increased average speed for road segments or delay reduction for intersections. These will be used instead of PTI, TTI or V/C and strategies. Points are assigned based on increase in speed or decrease in delay. The point spread is based on natural breaks on average speed increases and delay reduction from Congestion Mitigation Air Quality Improvement projects in the draft FY 2018-2021 TIP. **Section is 50 points total.**
- Support Quality Job Development – 1 point subtracted. No change in evaluation. **Section is 4 points total.**
- Strengthen Intermodal Connections – No change in points. This section was modified so that 3 points are assigned if project is in key industrial site area, connects to primary highway freight system, or connects to major intermodal freight facility. 2 points are assigned if the test above is met and if project provides countermeasure to improve freight movement. **Section is 5 points total.**
- Protect Air Quality and Environmental Assets – 5 points added. Section revised so that emission reductions are evaluated and assigned 9 points. The 9 points is based on the average emission reductions of volatile organic compounds and oxides of nitrogen. The point spread is based on natural breaks on emission reductions from Congestion Mitigation Air Quality projects in the draft FY 2018-2021 TIP. Green infrastructure is reduced from 5 points to 1 point. **Section is 10 points total.**

Safety

- Preserve and Maintain the Existing System – No change in points. Range of PASER scores modified. Change in section was to make upgrades to safety components/hardware and ITS worth 5 points. **Section is 5 points total.**
- Support Public Transportation – No change in points. Section modified so that projects located along transit route receive 3 points and projects that intersect transit receive 1 point instead of 2 points. Projects that make physical improvements to transit system receive 2 points. If project is not on transit route, sidewalk connections to transit stops receive 1 point. **Section is 5 points total.**
- Support Neighborhoods and Communities – No change in points. Section revised to include points for East-West Gateway defined environmental justice areas. The East-West Gateway definition of environmental justice includes areas with a high concentration of: zero-car households, seniors, and persons with a disability. **Section is 5 points total.**
- Provide More Transportation Choices – No change in points. Section revised so that improvements on pedestrian and bicycle facilities are each evaluated (4 points each) for improvement type. Also added is 2 points for traffic calming and design improvements and intersection treatments. **Section is 10 points total.**
- Promote Safety – No change in points. Section is revised so that points are assigned based on quartiles of crash rates of all projects submitted during a given STP-S application round instead of a set crash rate. Points are assigned based on quartile of total crash rate and fatal/serious injury crash rate. Range for benefit/cost modified. Track two eliminated. Projects with no crashes will still get 40 points under benefit/cost if countermeasures from strategic safety plan is included. **Section is 70 points total.**
- Strengthen Intermodal Connections – No change in points. This section was modified so that 3 points are assigned if project is in key industrial site area, connects to primary highway freight

system, or connects to major intermodal freight facility. 2 points are assigned if the test above is met and if project provides countermeasure to improve freight movement. **Section is 5 points total.**

Active Transportation

- Preserve and Maintain the Existing System – 5 points subtracted and section eliminated. Points for preservation captured in Provide More Transportation Choices section. **Section is zero points.**
- Support Public Transportation – 3 points added. Section remains mostly the same with the addition of points for new or upgraded sidewalk connections to transit. **Section is 8 points total.**
- Support Neighborhoods and Communities – 2 points added. Section revised to include points for East-West Gateway defined environmental justice areas. The East-West Gateway definition of environmental justice includes areas with a high concentration of: zero-car households, seniors, and persons with a disability. Access to schools points increased by 2 points. **Section is 17 points total.**
- Foster a Vibrant Downtown & Central Core – No change in points. No change in evaluation. **Section is 10 points total.**
- Provide More Transportation Choices – No change in points. Section expands on facility improvement types and includes PSR threshold from former Preserve and Maintain section. **Section is 27 points total.**
- Promote Safety – No change in points. Section revised so that types of improvements on pedestrian and bicycle facilities are each evaluated (average of 24 points) for improvement type. Also added is 9 points for traffic calming and design improvements and intersection treatments. **Section is 35 points total.**
- Protect Air Quality and Environmental Assets – No change in points. No change in evaluation. **Section is 3 point total.**

Transit Asset Management and System Upgrades

- Preserve and Maintain the Existing System – 45 points added. New section added to document that maintaining and upgrading transit assets are preservation in nature. Points gained for average vehicle mileage. These were originally part of Support Public Transportation criteria. **Section is 45 points total.**
- Support Public Transportation – 30 points subtracted. Section revised to move points for vehicle preservation to Preserve and Maintain. **Section is 20 points total.**
- Support Neighborhoods and Communities – 7 points subtracted. Section revised to eliminate points for access to schools and community resources. Also includes zero-car households, seniors, and persons of disabilities with EJ population **Section is 8 points total.**
- Foster a Vibrant Downtown & Central Core – 3 points added. New section added to document how transit projects improve access to the central core. **Section is 3 points total.**
- Provide More Transportation Choices – 6 points subtracted. Section revised to move seniors and persons of disabilities to Support Neighborhoods and Communities. Points are only assigned for projects that include multimodal elements or equipment. **Section is 4 points total.**
- Promote Safety – No change in points. Section broadened to include examples of safety measures or services on vehicles. **Section is 5 points total.**
- Support a Diverse Economy with a Reliable System – No change in points. Change in section to allow points for operation/service enhancing technologies. **Section is 5 points total.**

- Support Quality Job Development – 5 points subtracted. Section eliminated. Transit by its nature serves jobs throughout the region. **Section is zero points.**
- Protect Air Quality and Environmental Assets – No change in points. Section revised since prior metric was too general. Section is expanded to include examples of different types of vehicles/green design. **Section is 10 points total.**

Transit Expansion

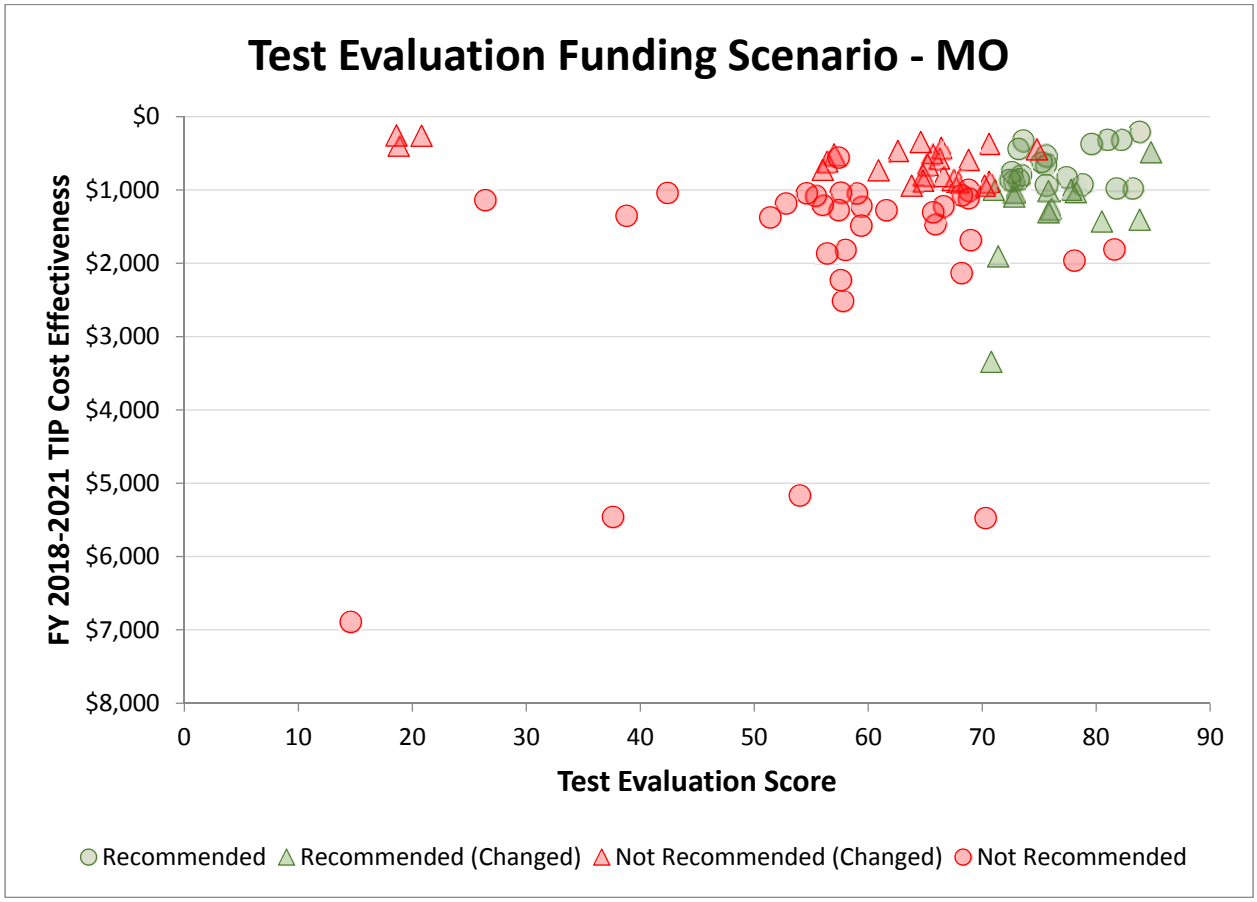
- Support Public Transportation – Points vary depending on project type:
    - **Adding Capacity -** 10 points added. No change in evaluation. Range of scores modified due to more points in section. **Section is 60 points total.**
    - **Geographic Expansion –** 15 points added. No change in evaluation. Range of scores modified due to more points in section. **Section is 65 points total.**
- Support Neighborhoods and Communities – 7 points subtracted. Section revised to eliminate points for access to schools and community resources. Also includes zero-car households, seniors, and persons of disabilities with EJ population. **Section is 8 points total.**
- Foster a Vibrant Downtown & Central Core – 3 points added. New section added to document how transit project improves access to the central core. **Section is 3 points total.**
- Provide More Transportation Choices – 6 points subtracted. Section revised to move seniors and persons of disabilities to Support Neighborhoods and Communities. Points are only assigned for projects that include multimodal elements or equipment. **Section is 4 points total.**
- Promote Safety – No change in points. Section broadened to include examples of safety measures or services on vehicles. **Section is 5 points total.**
- Support a Diverse Economy with a Reliable System – No change in points. Change in section to allow points for operation/service enhancing technologies. **Section is 5 points total.**
- Support Quality Job Development – Points vary depending on project type:
    - **Adding Capacity** – No change in points. No change in evaluation. **Section is 5 points total.**
    - **Geographic Expansion** – 5 points subtracted and section eliminated. Points moved to Support Public Transportation since job data is used to determine population/employment index. **Section is zero points.**
- Protect Air Quality and Environmental Assets – No change in points. Section revised since prior metric was too general. Section is expanded to include examples of different types of vehicles/green design. **Section is 10 points total.**

Freight/Economic Development

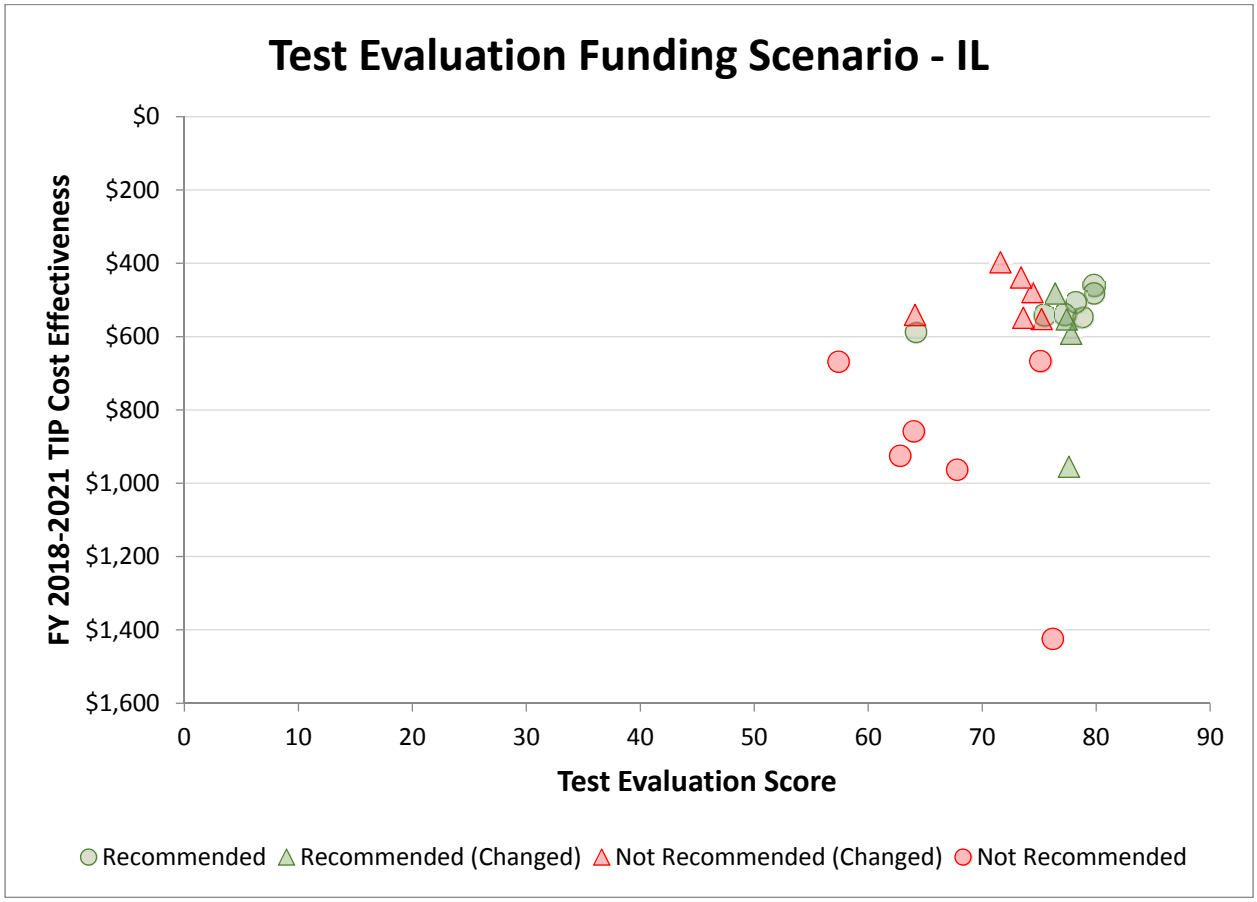
- Preserve and Maintain the Existing System – No change in points. Range of PASER scores modified. Change in section was to make upgrades to ITS worth 5 points. **Section is 5 points total.**
- Support Public Transportation – No change in points. Section modified so that projects located along transit route are 3 points and projects that intersect transit are 1 point instead of 2 points. Projects that make physical improvements to transit system are 2 points. If project is not on transit route, sidewalk connections to transit stops are 1 point. **Section is 5 points total.**
- Support Neighborhoods and Communities – 1 point subtracted. Section revised to include points for East-West Gateway defined environmental justice areas. The East-West Gateway definition of environmental justice includes areas with a high concentration of: zero-car households, seniors, and persons with a disability. **Section is 4 points total.**

- Provide More Transportation Choices – No change in points. Section revised so that improvements on pedestrian and bicycle facilities are each evaluated (2 points each) for improvement type. Also added is 1 point for traffic calming and design improvements and intersection treatments. **Section is 5 points total.**
- Promote Safety – 5 points added. Section is revised so that points are assigned based on quartiles of crash rates of all projects submitted during a given STP-S application round instead of a set crash rate. Points are assigned based on quartile of total crash rate and fatal/serious injury crash rate. **Section is 10 points total.**
- Support a Diverse Economy with a Reliable System – No change in points. No change in evaluation. **Section is 10 points total.**
- Support Quality Job Development – Points vary depending project type:
    - **Freight** – 10 points subtracted and section eliminated. Points moved to Strengthen Intermodal Connections. **Section is zero points.**
    - **Economic Development –** No change in points. No change in evaluation. **Section is 10 points total.**
- Strengthen Intermodal Connections – Points vary depending on project type:
    - **Freight** – 10 points added. Section revised so that industrial site areas are identified as: mega, major, or intermediate. The identification of site type is ongoing. Up to 30 points can be gained depending on the site area. An additional 30 points is gained if project connects to intermodal freight facility, serves major freight generator, etc. **Section is 60 points total.**
    - **Economic Development** – No change in points. Section revised to reduce points for average income of industry from 50 to 30 and to add 20 points for number of full-time jobs created. **Section is 50 points total.**
- Protect Air Quality and Environmental Assets – 4 points subtracted. No change in evaluation. **Section is 1 point total.**

Attachment B



Attachment C



Attachment D

STP-S Draft Scoring Criteria

The current transportation law, Fixing America's Surface Transportation (FAST) Act, continues the reforms initiated by the previous law, Moving Ahead for Progress in the 21st Century (MAP-21). This includes transitioning to a performance-driven, outcome-based program, and establishing performance goals for federal-aid highway programs. Performance-based planning and programming ensures that resources are invested in projects that make progress toward achieving critical outcomes for the St. Louis region.

The East-West Gateway Council of Governments (EWG) Board of Directors adopted *Connected2045*, the long-range transportation plan (LRP) for the St. Louis region, in June 2015. Projects in the Transportation Improvement Program (TIP) must be consistent with the ten guiding principles of *Connected2045*, which are described in **Table 1**. These ten principles guide transportation system evaluation and decision making, including the competitive selection of the Surface Transportation Block Grant (STP-S) program.

Table 1: *Connected2045* Ten Guiding Principles

Principle	Description
Preserve & Maintain the Existing System	Ensure the transportation system remains in a state of good repair.
Support Public Transportation	Invest in public transportation to spur economic development, protect the environment, and improve quality of life.
Support Neighborhoods & Communities	Connect communities to opportunities and resources across the region.
Foster a Vibrant Downtown & Central Core	Improve access to and mobility within the central core by all modes to increase attractiveness of St. Louis and strengthen the regional economy.
Provide More Transportation Choices	Create viable alternatives to automobile travel by providing bicycle and pedestrian facilities.
Promote Safety & Security	Provide a safe and secure transportation system for all users.
Support a Diverse Economy with a Reliable System	Reduce congestion and improve travel time reliability to support the diverse economic sectors of the region.
Support Quality Job Development	Support the growth of wealth producing jobs that allow residents to save and return money to the economy.
Strengthen Intermodal Connections	Support freight movement and connections that are critical to the efficient flow of both people and goods.
Protect Air Quality & Environmental Assets	Encourage investments that recognize the linkages between the social, economic, and natural fabric of the region.

EWG has identified seven project types that represent a wide variety of projects that sponsors in the St. Louis region implement. These project types are identified below, followed by example activities:

- **Road** – road resurfacing or reconstruction.
- **Bridge** – bridge rehabilitation or replacement, bridge preventative maintenance program.
- **Traffic Flow** – addition of travel lanes, two-way turn lanes, new roads, intersection improvements, Intelligent Transportation Systems (ITS) improvements, signal optimization.
- **Safety** – systemic safety improvements (i.e., guardrail or rumble strip installation), sight distance improvements, signage upgrades, intersection/crossing safety improvements.
- **Active Transportation** – shared-use paths, on-street bicycle facilities, sidewalks, bicycle and pedestrian bridges and underpasses.
- **Transit:**
    - **Transit Asset Management and System Upgrades** – revenue replacement vehicles, improvements to transit facilities, maintenance facility for revenue vehicles
    - **Expansion** – vehicle fleet expansion, geographic expansion
- **Freight/Economic Development** – road or bridge projects that improve the flow of freight or promote economic development, railway-highway grade separation, traffic signal optimization, truck parking facilities.

Each project type will be evaluated based on how it meets the priority criteria established in the region's LRP, *Connected2045*. **Table 2** details the performance criteria values for each project type.

Table 2: Project Type and Performance Criteria Values

	STP-S Project Type							
***Connected2045* Investment Priority Criteria**	**Road**	**Bridge**	**Traffic Flow**	**Safety**	**Active Transportation**	**Transit Asset Management & System Upgrades**	**Transit Expansion**	**Freight / Economic Development**
Preserve & Maintain the Existing System	62	62	5	5	-	45	0	5
Support Public Transportation	5	2	5	5	8	20	60	5
Support Neighborhoods & Communities	4	4	4	5	17	8	8	4
Foster a Vibrant Downtown & Central Core	-	-	1	-	10	3	3	-
Provide More Transportation Choices	10	10	6	10	27	4	4	5
Promote Safety	8	13	10	70	35	5	5	10
Support a Diverse Economy with a Reliable System	1	-	50	-	-	5	5	10
Support Quality Job Development	4	4	4	-	-	-	5	10
Strengthen Intermodal Connections	5	5	5	5	-	-	-	50
Protect Air Quality & Environmental Assets	1	-	10	-	3	10	10	1
Total Performance Points	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Legend: **#** *Primary Purpose*

All application submittals are expected to have one primary project type. The component of the project that is most important to the sponsor is considered the primary type. Many of the projects could fall into multiple project types. For example, if a sponsor in planning on resurfacing a road and adding a bicycle lane, the project is considered multimodal. Assuming that the roadway resurfacing is the primary activity, the project would be evaluated as a road project type and can earn points for providing more transportation choices.

All projects will be scored and ranked based on the primary project type indicated by the project sponsor. Each project type has a maximum of 10 criteria and up to 21 metrics that are used to assign performance points. Certain criteria do not apply to all project types. For example, a road project type would be assessed for nine out of the 10 criteria (17 metrics) and an active transportation project type would be assessed for six out of the 10 criteria (13 metrics). The criteria are held constant across the project types, however, the measures and metrics vary depending on the project type. In addition, criterion can contain multiple measures and metrics

Each project type can receive a maximum of 100 performance points. Each project type has a primary purpose that include the measures and metrics that are most important to the project type. For example, the measure that has the most amount of points in the road project type is the pavement condition, worth 60 points. Pavement condition is also evaluated in the traffic flow, safety, and freight/economic development project types, but is only worth 5 points. This is because the primary purpose of road type projects is to preserve the roadway. As noted before, the measures and metrics are specific to each project type. All project types compete against each other for the available STP-S funding. Funding is not set aside in silos by project type.

Project usage and cost points will be included in the final scoring of each project, which is worth an additional 10 points. Projects can receive up to four points for usage and up to six points for cost. To determine the ranges used to allocate points for usage and cost, EWG analyzed projects currently in the draft 2018-2021 TIP and arranged the values using the natural breaks classification method. Person Miles of Travel (PMT) will be calculated for each project type to determine the facility usage. Cost points for Missouri projects are based on the federal project cost total. In Illinois, it is based on the construction cost total. **Table 3** shows the usage and cost point breakdown in Missouri. **Table 4** shows the usage and cost point breakdown in Illinois.

Table 3: Usage and Cost Point Breakdown - Missouri

Usage – PMT	Usage Point Allocation		Federal Project Cost	Cost Point Allocation
10,001+	4.0		$0-$400,000	6
5,001-10,000	3.2		$400,001-$650,000	4.8
2,001-5,000	2.4		$650,001-$1,000,000	3.6
701-2,000	1.6		$1,000,001-$1,300,000	2.4
0-700	0.8		$1,300,001+	1.2

Table 4: Usage and Cost Point Breakdown - Illinois

Usage – PMT	Usage Point Allocation		Construction Cost	Cost Point Allocation
4,001+	4.0		$0-$450,000	6
2,001-4,000	3.2		$450,001-$550,000	4.8
1,101-2,000	2.4		$550,001-$650,000	3.6
501-1,100	1.6		$650,001-$750,000	2.4
0-500	0.8		$750,001+	1.2

Road Project Type

Table 5 outlines the scheme for evaluating road projects. Road projects are assessed for nine out of the 10 criteria and include 17 metrics. No measures were identified for the criteria related to Foster a Vibrant Downtown & Central Core. Further information on the metrics used to evaluate road projects follows.

Table 5: Road Project Type Evaluation Scheme

***Connected2045* Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	Road condition	PASER rating
	Significance	Principal arterial
Support Public Transportation	Improved transit connections	1. Transit proximity 2. Physical improvements to transit
Support Neighborhoods & Communities	Environmental Justice	Project falls in or partially located in area with a high concentration of: a. low-income persons or minority populations b. zero-vehicle households c. seniors or persons with disabilities
Foster a Vibrant Downtown & Central Core	n/a	n/a
Provide More Transportation Choices	Bicycle & pedestrian level of stress/comfort	1. Pedestrian facility type 2. Bicycle facility type 3. Traffic calming and design improvements 4. Intersection treatments
Promote Safety	Improved safety	1. Total crash rate 2. Fatal & serious injury crash rate 3. Safety countermeasure proposed
Support a Diverse Economy with a Reliable System	Improved facility efficiency	Management and operations elements
Support Quality Job Development	Access to jobs	Job density
Strengthen Intermodal Connections	Regional freight significance	1. Freight proximity 2. Commercial vehicle countermeasures
Protect Air Quality & Environmental Assets	Impact to the environment	Environmental infrastructure elements

Preserve & Maintain the Existing System (62 total points)

Projects will be assessed in terms of how they contribute to the preservation of existing infrastructure assets. The first metric evaluates the condition of the pavement. The second metric evaluates the project's significance to the National Highway System.

Road Condition (60 points)

Pavement condition will be assessed using the Pavement Surface Evaluation and Rating (PASER) Guide, which is a visual rating system. PASER ratings range from 1-10, with 1 being '*very poor*' condition and 10 being '*excellent*' condition. Facilities with a PASER rating of 1.5 or less are assigned a lower priority to encourage preventative maintenance prior to this level of deterioration. Examples of the types of improvements typically used on roadways with different pavement ratings, as well as their associated scores, are listed below. This is meant to be illustrative, and not an exhaustive list of improvements eligible for funding.

60 points PASER 1.6-4.5 – Includes improvements such as mill and overlay, extensive slab replacement, joint rehabilitation, or full-depth pavement repairs.

55 points PASER 4.6-5.5 – Includes project elements that are primarily focused on preservative treatments and non-structural surface repairs.

45 points PASER 5.6-7.5 – Includes project elements that are primarily focused on preservative treatments, non-structural surface repairs, routine sealing, and minor patching of pavement to prevent further deterioration.

35 points	PASER 1.5 or less – Includes full reconstruction of the facility, regardless of pavement condition. Reconstruction may be due to deterioration or deficient design.
25 points	PASER 7.6-8.5 – Includes standard roadway maintenance.
Zero points	PASER 8.6-10 – Includes pavement in new or like-new condition with no maintenance required.

Non-Interstate National Highway System Route (2 points)
MAP-21 expanded the National Highway System (NHS) to include all principal arterials. This measure evaluates the project's strategic significance.

2 points	Project is on a principal arterial.
Zero points	Project is not on a principal arterial.

Support Public Transportation (5 total points)
Road projects can provide multiple benefits to public transit, including better mobility for transit vehicles and better access for users of all ages and abilities.

Transit Proximity (3 points)
Poor pavement conditions can increase the cost of operating public transportation (i.e., accelerated vehicle depreciation, additional repair costs, increased fuel consumption, and tire wear). Therefore, road projects located on a transit route will earn points under this metric. EWG staff will use Bi-State Development, Madison County Transit, St. Clair County Transit, and St. Charles Area Transit route data and GIS analysis to determine if the project is located on or intersects a transit route.

3 points	Project located on a transit route.
1 point	Project intersects a transit route.
Zero points	Project is not on a transit route.

Physical Improvements to Transit (2 points)
A walking or bicycling trip can be longer if it involves transit. In addition, improvements to transit infrastructure can encourage seniors or persons with a disability to utilize public transportation. Physical improvements to a bus stop include: sidewalks to transit facilities, removing obstructions blocking access to transit facilities, landing pads, appropriate street crossings near transit facilities, lighting, bus shelters, benches, etc.

2 points	Project includes physical improvements to transit system.
1 point	New or upgraded sidewalk connections to transit.
Zero points	Project does not include physical improvements to transit system.

Support Neighborhoods & Communities (4 total points)
This measure is included to account for projects that are located in Environmental Justice (EJ) areas. The purpose of EJ is to focus federal attention on the environmental and human health effects of federal actions on minority or low-income populations with the goal of achieving environmental protection for all communities. EWG further expands on EJ to include areas with a high concentration of one or more of: zero-vehicle households, elderly, and persons with a disability. The EJ policy ensures that populations that have traditionally been underserved have safe access to community resources and meaningful choices in transportation. Census data and GIS analysis is used to determine if the project is located in an EJ area. A map of the EJ areas is provided in **Appendix A**.

4 points	Project falls in, or partially in, an EJ area with high concentration of low-income persons, or minorities.
3 points	Project falls in, or partially in, an EJ area with high concentration of zero-vehicle households.
1 point	Project falls in, or partially in, an EJ area with high concentration of seniors or persons with a disability.
Zero points	Project is not located in an EJ area OR project imposes a burden on EJ area.

Projects that are located within EJ areas will not earn points if they impose a burden on the population of the area. Burdens may include disruption of community cohesion (i.e., access to schools, parks, medical facilities, and religious institutions), adverse employment effects, decline in tax base or property values, displacements, increased noise and/or emissions, diminished aesthetics, and disruption to businesses, or access to transit.

Provide More Transportation Choices (10 total points)
Per the 2010 USDOT Policy Statement *Bicycle and Pedestrian Accommodation Regulations and Recommendations*, every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. The USDOT encourages transportation agencies to go beyond the minimum requirements and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. The four metrics below will be used to evaluate the project's multimodal elements.

Pedestrian Facilities (4 points)
Pedestrian facilities with a high-level of comfort will earn points under this metric.

4 points	Project corrects existing sidewalk deficiencies (PSR 0-2 and/or width <4') OR new 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on both sides of road OR 10' shared-use path (min).
2 points	New 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on one side of road OR 8' shared-use path.
1 point	Project addresses curb ramps only.
Zero points	Project does not satisfy the above OR no pedestrian facility is proposed.

Bicycle Facilities (4 points)
Bicycle facilities with a low-level of stress will earn points under this metric.

4 points	Physically protected or buffered bicycle facility OR 10' shared-use path (min).
3 points	Conventional bike lanes on roads at 30 mph or less OR 8' shared-use path.
2 points	Conventional bike lanes on roads at 35 mph OR paved shoulders (recommended width 5'-8').
1 point	Shared-lane markings on roads at 25 mph or less OR 4' paved shoulders.
Zero points	Project does not satisfy the above OR no bicycle facility is proposed.

Traffic Calming and Design Improvements (1 point)
Traffic calming and design improvements can improve stress levels for bicyclists and comfort levels for pedestrians. Examples of traffic calming and design improvements include: bulb outs, raised crosswalks, lane diets, road diets, refuge islands, lighting, etc. Sponsors can score one point under this metric.

0.5 points	Project has traffic calming solutions to reduce modal conflicts.
0.5 points	Project includes pedestrian-scale lighting.
Zero points	Project does not satisfy the above.

Intersection Treatments (1 point)
Design for intersections should reduce conflict between pedestrian/bicyclists and vehicles by heightening the level of visibility and indicating a clear right-of-way. Examples of intersection treatments include: pedestrian signals, pedestrian flashing beacons, marked crosswalks, high visibility crosswalk markings, bicycle intersection crossing markings, median refuge islands, etc.

1 point	Crossing treatments are provided at intersections or uncontrolled locations OR no intersections in projects limits. **Note**: pedestrian and bicycle projects must have logical termini.
Zero points	No crossing treatments where warranted.

Promote Safety (8 total points)
EWG is focusing on lowering the number of fatalities and serious injuries caused by vehicle crashes. To meet this goal, all projects should strive to correct safety issues in high crash locations or use a systemic approach to address future crashes. The two metrics relate to the current conditions on the roadway by looking at the total crash rate and the fatal and serious injury crash rate. This helps prioritize projects that are in locations experiencing a current problem. The third metric addresses the stated safety problem with an appropriate safety countermeasure.

Project sponsors must use five years of crash data (2011-2015) when calculating the total crash rate and the fatal and serious injury crash rate. Sponsors should use the number of fatal and serious injury crashes and not the total number of fatalities or serious injuries. To receive points under metric one and metric two, the project must include a safety countermeasure that addresses the current safety problem.

Total Crash Rate (4 points)
EWG will group all projects that have crashes into quartiles and assign points as follows:

4 points	Top quartile
3 points	Second quartile
2 points	Third quartile
1 point	Lowest quartile

Fatal and Serious Injury Crash Rate (4 points)
EWG will group all projects that have crashes into quartiles and assign points as follows:

4 points	Top quartile
3 points	Second quartile
2 points	Third quartile
1 point	Lowest quartile

Note: If an *intersection* project is in the lowest quartile in both metric one and metric two, and the project includes a safety countermeasure that addresses the safety problem, the project can receive four total points. Also, if a project has no crashes on the project limits, but includes a preventative safety countermeasure, the project can receive four total points.

Support a Diverse Economy with a Reliable Transportation System (1 total point)
Management and operations (M&O) strategies are defined as integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system. Examples of M&O strategies include: traffic operational improvements, ITS technologies, or other integrated technology component to increase facility efficiency and reliability. This metric evaluates the integration of M&O strategies into roadway projects.

1 point	Project includes M&O strategies.
Zero points	Project does not include M&O strategies.

Support Quality Job Development (4 total points)
Access to jobs is an important function of the transportation system. The *OnTheMap* tool is derived from census data and will be used to assess where workers are employed in the region. Employment density will be used as a metric in determining how important improvements to transportation facilities are in the surrounding area.

4 points	High jobs/sq. mile
3 points	Medium-high jobs/sq. mile
2 points	Medium jobs/sq. mile
1 point	Medium-low jobs/sq. mile
Zero points	Low jobs/sq. mile

Strengthen Intermodal Connections (5 total points)
The St. Louis region is well positioned to capture some of the expected growth in nationwide freight movement for all modes, given the region's central location, rivers, low traffic congestion, and lack of tolling. Future growth will depend on coordinating public and private freight decision making and investments, ensuring reliable truck travel times, strengthening multi-modal connections to key industrial site areas, and ensuring the region's workforce can access freight employment opportunities. A map of the industrial site areas and the Primary Highway Freight System is provided in **Appendix A**.

Freight Proximity (3 points)
In 2013, EWG completed the St. Louis Regional Freight Study. The Study identified key industrial areas that influence the freight industry in the St. Louis region. Industrial site areas are centers of employment and are connected by a series of transportation networks. Projects that improve mobility to an industrial site area, connect to the Primary Highway Freight System, or connect to an intermodal facility will earn points under this metric.

3 points	The project meets one of the following criteria: • Located within one of 23 key industrial site areas. • Connects to the Primary Highway Freight System. • Connects to an intermodal freight facility, serves a major freight generator, logistic center, manufacturing and warehouse industrial land, or navigable waterway or Port District.

Commercial Vehicle Countermeasure (2 points)
To earn points under this metric, the project must score points under the first metric, freight proximity, and include a commercial vehicle countermeasure that improves freight movement. Common techniques related to commercial vehicle accommodations include improving shoulder width and pavement structure, intersection design, parking, acceleration/deceleration lanes, and truck and car separation.

2 points	The project addresses the stated freight problem with appropriate commercial vehicle countermeasures.

Protect Air Quality & Environmental Assets (1 total point)
Transportation projects should limit the impacts on the natural environment. Green infrastructure is a design approach to managing stormwater, the urban heat island effect, public health, and air quality. Sustainable stormwater management treats and slows runoff from impervious roadways, sidewalks, and building surfaces. Examples of green infrastructure include bioswales, rain gardens, pervious strips, pervious pavement, and green bulb-outs. This metric evaluates the integration of green infrastructure into roadway projects.

1 point	Project includes green infrastructure elements.
Zero points	Project does not include green infrastructure.

Bridge Project Type

Table 6 outlines the scheme for evaluating bridge projects. Bridge projects are assessed for seven out of the 10 criteria and include 10 metrics. No measures were identified for the criteria related to Foster a Vibrant Downtown & Central Core, Support a Diverse Economy with a Reliable System, and Protect Air Quality & Environmental Assets. Further information on the metrics used to evaluate bridge projects follows.

Table 6: Bridge Project Type Evaluation Scheme

Connected2045 **Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	Bridge condition	Bridge sufficiency rating
	Significance	Principal arterial
Support Public Transportation	Enhancements to the public transportation network	Transit proximity
Support Neighborhoods & Communities	Environmental Justice	Project falls in or partially located in area with a high concentration of: a. low-income persons or minority populations b. zero-vehicle households c. seniors or persons with disabilities
Foster a Vibrant Downtown & Central Core	n/a	n/a
Provide More Transportation Choices	Bicycle & pedestrian level of stress/comfort	1. Pedestrian facility type 2. Bicycle facility type
Promote Safety	Improved safety	1. Structurally deficient 2. Functionally obsolete
Support a Diverse Economy with a Reliable System	n/a	n/a
Support Quality Job Development	Access to jobs	Job density
Strengthen Intermodal Connections	Regional freight significance	Bridge weight limits
Protect Air Quality & Environmental Assets	n/a	n/a

Preserve & Maintain the Existing System (62 total points)
Projects will be assessed in terms of how they contribute to the preservation of existing infrastructure assets. The first metric evaluates the condition of the bridge. The second metric evaluates the project's significance to the National Highway System.

Bridge Condition (60 points)
Bridge conditions will be assessed using the bridge sufficiency rating system approved by Federal Highway Administration (FHWA). Bridge sufficiency ratings range from 0-100, with 0 being '*completely deficient*' and 100 being a *'new'* bridge. The ratings are based on several factors, including: width, vertical clearance, load capacity, essentiality for public use, and structural safety.

60 points	Bridge sufficiency rating 0-39.9 (very poor)
50 points	Bridge sufficiency rating 40-49.9 (poor)
40 points	Bridge sufficiency rating 50-59.9 (fair)
30 points	Bridge sufficiency rating 60-79.9 (good)
Zero points	Bridge sufficiency rating 80-100 (excellent)

Non-Interstate National Highway System Route (2 points)
MAP-21 expanded the National Highway System (NHS) to include all principal arterials. This measure evaluates the project's strategic significance.

2 points	Project is on a principal arterial.
Zero points	Project is not on a principal arterial.

Support Public Transportation (2 total points)
Public transportation provides a variety of benefits, including accessible transportation options for all ages and abilities. This measure evaluates how significant the project's location is to the public transportation network.

Transit Proximity (2 points)
Bridge projects located on a transit route will earn points under this metric. EWG staff will use Bi-State Development, Madison County Transit, St. Clair County Transit, and St. Charles Area Transit route data and GIS analysis to determine if the project is located on a transit route.

2 points	Project located on a transit route.
Zero points	Project is not on a transit route.

Support Neighborhoods & Communities (4 total points)
This measure is included to account for projects that are located in Environmental Justice (EJ) areas. The purpose of EJ is to focus federal attention on the environmental and human health effects of federal actions on minority or low-income populations with the goal of achieving environmental protection for all communities. EWG further expands on EJ to include areas with a high concentration of one or more of: zero-vehicle households, elderly, and persons with a disability. The EJ policy ensures that populations that have traditionally been underserved have safe access to community resources and meaningful choices in transportation. Census data and GIS analysis is used to determine if the project is located in an EJ area. A map of the EJ areas is provided in **Appendix A**.

4 points	Project falls in, or partially in, an EJ area with high concentration of low-income persons, or minorities.
3 points	Project falls in, or partially in, an EJ area with high concentration of zero-vehicle households.
1 point	Project falls in, or partially in, an EJ area with high concentration of seniors or persons with a disability.
Zero points	Project is not located in an EJ area OR project imposes a burden on EJ area.

Projects that are located within EJ areas will not earn points if they impose a burden on the population of the area. Burdens may include disruption of community cohesion (i.e., access to schools, parks, medical facilities, and religious institutions), adverse employment effects, decline in tax base or property values, displacements, increased noise and/or emissions, diminished aesthetics, and disruption to businesses, or access to transit.

Provide More Transportation Choices (10 total points)
Per the 2010 USDOT Policy Statement *Bicycle and Pedestrian Accommodation Regulations and Recommendations*, every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. The USDOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate.

Bridge rehabilitation projects are opportunities to create critical connections in existing pedestrian and bicycle networks or provide safer and more comfortable facilities for nonmotorized users. The two metrics below will be used to evaluate the project's multimodal elements.

Pedestrian Facilities (5 points)
Pedestrian facilities with a high-level of comfort will earn points under this metric.

5 points	Project corrects existing sidewalk deficiencies (PSR 0-2 and/or width <4') OR new 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on both sides of bridge OR 10' shared-use path (min).
3 points	New 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on one side of bridge OR 8' shared-use path.
1 point	Project addresses curb ramps only.
Zero points	Project does not satisfy the above OR no pedestrian facility is proposed.

Bicycle Facilities (5 points)
Bicycle facilities with a low-level of stress will earn points under this metric.

5 points	Physically protected or buffered bicycle facility OR 10' shared-use path (min).
3 points	Conventional bike lanes on roads at 30 mph or less OR 8' shared-use path.
2 points	Conventional bike lanes on roads at 35 mph OR paved shoulders (recommended width 5'-8').
1 point	Shared-lane markings on roads at 25 mph or less OR 4' paved shoulders.
Zero points	Project does not satisfy the above OR no bicycle facility is proposed.

Promote Safety (13 total points)
A bridge with a deficient condition is considered a priority for replacement. Bridge deficiencies can be categorized as structurally deficient and/or functionally obsolete.

Structurally Deficient (8 points)
Structural deficiencies are characterized by deteriorated conditions of significant bridge elements. A structurally deficient designation does not imply that the bridge is unsafe, but could become so and would need to be closed without substantial improvements. Structurally deficient bridges typically require significant maintenance or repair to remain in service and would eventually require major rehabilitation or replacement to address the underlying deficiencies. To be considered structurally deficient, a bridge must meet the following:

- A condition rating of four or less for a deck, superstructure, substructure, or culvert and retaining walls.
- An appraisal rating of two or less for the structural condition or waterway adequacy.

Bridges that are structurally deficient will earn points under this metric.

8 points	The bridge is structurally deficient.
Zero points	The bridge is not structurally deficient.

Functionally Obsolete (5 points)
A bridge is considered functionally obsolete when it does not meet current design standards either because the volume of traffic exceeds the level anticipated when the bridge was constructed and/or relevant design standards have been revised. To be considered functionally obsolete, a bridge must meet the following:

- A condition rating of three or less for deck geometry, underclearances, or approach/roadway alignment.
- An appraisal rating of three or less for the structural condition or waterway adequacy.

Bridges that are functionally obsolete will earn points under this metric.

5 points	The bridge is functionally obsolete.
Zero points	The bridge is not functionally obsolete.

Support Quality Job Development (4 total points)
Access to jobs is an important function of the transportation system. The *OnTheMap* tool is derived from census data and will be used to assess where workers are employed in the region. Employment density will be used as a metric in determining how important improvements to transportation facilities are in the surrounding area.

4 points	High jobs/sq. mile
3 points	Medium-high jobs/sq. mile
2 points	Medium jobs/sq. mile
1 point	Medium-low jobs/sq. mile
Zero points	Low jobs/sq. mile

Strengthen Intermodal Connections (5 total points)
In 1975, Congress enacted the Bridge Formula to limit the weight-to-length ratio of a vehicle crossing a bridge. Posted weight limits impact the movement of freight as trucks may have to detour to avoid a weight restricted bridge. Projects that rehabilitate or replace a load-limited bridge to improve freight movement will earn points under this metric.

5 points	The bridge has a posted weight limit of at least 20 tons.
3 points	The bridge has a posted weight limit between 20.1 and 40 tons.
2 points	The bridge has a posted weight limit above 40 tons.
Zero points	The bridge does not have a posted weight limit.

Traffic Flow Project Type

Table 7 outlines the scheme for evaluating traffic flow projects. Traffic flow projects are assessed for 10 out of the 10 criteria and include 19 metrics. Further information on the metrics used to evaluate traffic flow projects follows.

Table 7: Traffic Flow Project Type Evaluation Scheme

***Connected2045* Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	Road or bridge condition	PASER rating or bridge sufficiency rating
	ITS condition	Preserving ITS components
Support Public Transportation	Improved transit connections	1. Transit proximity 2. Physical improvements to transit
Support Neighborhoods & Communities	Environmental Justice	Project falls in or partially located in area with a high concentration of: a. low-income persons or minority populations b. zero-vehicle households c. seniors or persons with disabilities
Foster a Vibrant Downtown & Central Core	Mobility within central core	Project is located in central core
Provide More Transportation Choices	Bicycle & pedestrian level of stress/comfort	1. Pedestrian facility type 2. Bicycle facility type 3. Traffic calming and design improvements 4. Intersection treatments
Promote Safety	Improved safety	1. Total crash rate 2. Fatal & serious injury crash rate 3. Safety countermeasure proposed
Support a Diverse Economy with a Reliable System	Improved mobility and congestion	Speed or delay improvements
Support Quality Job Development	Access to jobs	Job density
Strengthen Intermodal Connections	Regional freight significance	1. Freight proximity 2. Commercial vehicle countermeasures
Protect Air Quality & Environmental Assets	Impact to the environment	1. Reduction in VOC & NO_x 2. Environmental infrastructure elements

Preserve & Maintain the Existing System (5 total points)

Projects will be assessed in terms of how they contribute to the preservation of existing infrastructure assets. The first metric evaluates the condition of the pavement or bridge. Sponsors can score points under preservation if they are improving the condition of the facility. Roadways or bridges with low pavement/sufficiency ratings will receive a higher preservation score. The second metric relates to the replacement of ITS components. If the sponsor receives points in the first metric and the second metric, the scores of the two metrics will be averaged.

Road or Bridge Condition (5 points)

Pavement condition will be assessed using the Pavement Surface Evaluation and Rating (PASER) Guide, which is a visual rating system. PASER ratings range from 1-10, with 1 being '*very poor*' condition and 10 being '*excellent*' condition.

5 points	PASER 2.5 or less
4 points	PASER 2.6-3.5
3 points	PASER 3.6-5.5
2 points	PASER 6.6-7.5
1 point	PASER 7.6-8.5
Zero points	PASER 8.6-10

Bridge conditions will be assessed using the bridge sufficiency rating system approved by FHWA. Bridge sufficiency ratings range from 0-100, with 0 being *'completely deficient'* and 100 being a *'new'* bridge. State DOTs calculate the ratings based on several factors, including: width, vertical clearance, load capacity, essentiality for public use, and structural safety.

5 points	Bridge sufficiency rating 0-39.9 (very poor)
4 points	Bridge sufficiency rating 40-49.9 (poor)
3 points	Bridge sufficiency rating 50-59.9 (fair)
2 points	Bridge sufficiency rating 60-79.9 (good)
Zero points	Bridge sufficiency rating 80-100 (excellent)

ITS Components (5 points)
Project can earn points if existing ITS components will be preserved, repaired, improved, or upgraded (for example: signals, traffic sensors). To receive points, the ITS components must be within the project limits.

5 points	Existing ITS components are inoperable or require repairs, improvements, or upgrades.

Support Public Transportation (5 total points)
Public transportation provides a variety of benefits, including accessible transportation options for all ages and abilities. The first metric evaluates how significant the project's location is to the public transportation network. The second metric evaluates access improvements to bus stops and stations and enhancements to transit infrastructure.

Transit Proximity (3 points)
EWG staff will use Bi-State Development, Madison County Transit, St. Clair County Transit, and St. Charles Area Transit route data and GIS analysis to determine if the project is located on or intersects a transit route.

3 points	Project located on a transit route.
1 point	Project intersects a transit route.
Zero points	Project is not on a transit route.

Physical Improvements to Transit (2 points)
A walking or bicycling trip can be longer if it involves transit. In addition, improvements to transit infrastructure can encourage seniors or persons with a disability to utilize public transportation. Physical improvements to a bus stop include: sidewalks to transit facilities, removing obstructions blocking access to transit facilities, landing pads, appropriate street crossings near transit facilities, lighting, bus shelters, benches, etc.

2 points	Project includes physical improvements to transit system.
1 point	New or upgraded sidewalk connections to transit.
Zero points	Project does not include physical improvements to transit system.

Support Neighborhoods & Communities (4 total points)
This measure is included to account for projects that are located in Environmental Justice (EJ) areas. The purpose of EJ is to focus federal attention on the environmental and human health effects of federal actions on minority or low-income populations with the goal of achieving environmental protection for all communities. EWG further expands on EJ to include areas with a high concentration of one or more of: zero-vehicle households, elderly, and

persons with a disability. The EJ policy ensures that populations that have traditionally been underserved have safe access to community resources and meaningful choices in transportation. Census data and GIS analysis is used to determine if the project is located in an EJ area. A map of the EJ areas is provided in **Appendix A**.

4 points	Project falls in, or partially in, an EJ area with high concentration of low-income persons, or minorities.
3 points	Project falls in, or partially in, an EJ area with high concentration of zero-vehicle households.
1 point	Project falls in, or partially in, an EJ area with high concentration of seniors or persons with a disability.
Zero points	Project is not located in an EJ area OR project imposes a burden on EJ area.

Projects that are located within EJ areas will not earn points if they impose a burden on the population of the area. Burdens may include disruption of community cohesion (i.e., access to schools, parks, medical facilities, and religious institutions), adverse employment effects, decline in tax base or property values, displacements, increased noise and/or emissions, diminished aesthetics, and disruption to businesses, or access to transit.

Foster a Vibrant Downtown & Central Core (1 total point)
The central core serves as the region's primary economic engine. Improving access to and mobility within central core will strengthen the St. Louis regional economy and enhance the quality of life for residents and visitors. Traffic flow projects that are located within the central core will earn points under this metric.

1 point	Project is located within central core (per *Connected2045*).
Zero points	Project is not located in central core.

Provide More Transportation Choices (6 total points)
Per the 2010 USDOT Policy Statement *Bicycle and Pedestrian Accommodation Regulations and Recommendations*, every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. The USDOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. The four metrics below will be used to evaluate the project's multimodal elements.

Pedestrian Facilities (2 points)
Pedestrian facilities with a high-level of comfort will earn points under this metric.

2 points	Project corrects existing sidewalk deficiencies (PSR 0-2 and/or width <4') OR new 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on both sides of road OR 10' shared-use path (min).
1.5 points	New 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on one side of road OR 8' shared-use path.
1 point	Project addresses curb ramps only.
Zero points	Project does not satisfy the above OR no pedestrian facility is proposed.

Bicycle Facilities (2 points)
Bicycle facilities with a low-level of stress will earn points under this metric.

2 points	Physically protected or buffered bicycle facility OR 10' shared-use path (min).
1.5 points	Conventional bike lanes on roads at 30 mph or less OR 8' shared-use path.
1 point	Conventional bike lanes on roads at 35 mph OR paved shoulders (recommended width 5'-8').
0.5 points	Shared-lane markings on roads at 25 mph or less OR 4' paved shoulders.
Zero points	Project does not satisfy the above OR no bicycle facility is proposed.

Traffic Calming and Design Improvements (1 point)
Traffic calming and design improvements can improve stress levels for bicyclists and comfort levels for pedestrians. Examples of traffic calming and design improvements include: bulb outs, raised crosswalks, lane diets, road diets, refuge islands, lighting, etc. Sponsors can score one point under this metric.

0.5 points	Project has traffic calming solutions to reduce modal conflicts.
0.5 points	Project includes pedestrian-scale lighting.
Zero points	Project does not satisfy the above.

Intersection Treatments (1 point)
Design for intersections should reduce conflict between pedestrian/bicyclists and vehicles by heightening the level of visibility and indicating a clear right-of-way. Examples of intersection treatments include: pedestrian signals, pedestrian flashing beacons, marked crosswalks, high visibility crosswalk markings, bicycle intersection crossing markings, median refuge islands, etc.

1 point	Crossing treatments are provided at intersections or uncontrolled locations OR no intersections in projects limits. **Note**: pedestrian and bicycle projects must have logical termini.
Zero points	No crossing treatments where warranted.

Promote Safety (10 total points)
EWG is focusing on lowering the number of fatalities and serious injuries caused by vehicle crashes. To meet this goal, all projects should strive to correct safety issues in high crash locations or use a systemic approach to address future crashes. The two metrics relate to the current conditions on the roadway by looking at the total crash rate and the fatal and serious injury crash rate. This helps prioritize projects that are in locations experiencing a current problem. The third metric addresses the stated safety problem with an appropriate safety countermeasure.

Project sponsors must use five years of crash data (2011-2015) when calculating the total crash rate and the fatal and serious injury crash rate. Sponsors should use the number of fatal and serious injury crashes and not the total number of fatalities or serious injuries. To receive points under metric one and metric two, the project must include a safety countermeasure that addresses the current safety problem.

Total Crash Rate (5 points)
EWG will group all projects with crashes into quartiles and assign points as follows:

5 points	Top quartile
4 points	Second quartile

3 points	Third quartile
2 points	Lowest quartile

Fatal and Serious Injury Crash Rate (5 points)
EWG will group all projects with crashes into quartiles and assign points as follows:

5 points	Top quartile
4 points	Second quartile
3 points	Third quartile
2 point	Lowest quartile

Note: If an *intersection* project is in the lowest quartile in both metric one and metric two, and the project includes a safety countermeasure that addresses the safety problem, the project can receive points five total points. Also, if a project has no crashes on the project limits, but includes a preventative safety countermeasure, the project can receive five total points.

Support a Diverse Economy with a Reliable Transportation System (50 total points)
Improving congested roadways benefits the movement of people and goods. Projects will be evaluated based on how well they improve travel conditions along a roadway OR intersection. EWG will measure changes in congestion during peak hour through the increase of average speed along a road segment or reduction of average vehicle delay at an intersection.

Speed – Road Segment (50 points)
For road segment projects, points will be assigned based on the increase in average speed.

50 points	40%+
40 points	20-39.9%
30 points	10-19.9%
20 points	5-9.9%
Zero points	0-4.9%

Delay – Intersection (50 points)
For intersection projects, points will be assigned based on the reduction in average vehicle delay.

50 points	50%+
40 points	40-49.9%
30 points	30-39.9%
20 points	10-29.9%
Zero points	0-9.9%

Support Quality Job Development (4 total points)
Access to jobs is an important function of the transportation system. The *OnTheMap* tool is derived from census data and will be used to assess where workers are employed in the region. Employment density will be used as a metric in determining how important improvements to transportation facilities are in the surrounding area.

4 points	High jobs/sq. mile
3 points	Medium-high jobs/sq. mile
2 points	Medium jobs/sq. mile
1 point	Medium-low jobs/sq. mile
Zero points	Low jobs/sq. mile

Strengthen Intermodal Connections (5 total points)
The St. Louis region is well positioned to capture some of the expected growth in nationwide freight movement for all modes, given the region's central location, rivers, low traffic congestion, and lack of tolling. Future growth will depend on coordinating public and private freight decision making and investments, ensuring reliable truck travel times, strengthening multi-modal connections to the industrial site areas, and ensuring the region's workforce can access freight employment opportunities. A map of the industrial site areas and the Primary Highway Freight System is provided in **Appendix A**.

Freight Proximity (3 points)
In 2013, EWG completed the St. Louis Regional Freight Study. The Study identified 23 key industrial areas that influence the freight industry in the St. Louis region. Industrial site areas are centers of employment and are connected by a series of transportation networks. Projects that improve mobility to an industrial site area, connect to the Primary Highway Freight System, or connect to an intermodal facility will earn points under this metric.

3 points	The project meets one of the following criteria: • Located within one of 23 key industrial site areas. • Connects to the Primary Highway Freight System. • Connects to an intermodal freight facility, serves a major freight generator, logistic center, manufacturing and warehouse industrial land, or navigable waterway or Port District.

Commercial Vehicle Countermeasure (2 points)
To earn points under this metric, the project must score points under the first metric, freight proximity, and include a commercial vehicle countermeasure that improves freight movement. Common techniques related to commercial vehicle accommodations include improving shoulder width and pavement structure, intersection design, parking, acceleration/deceleration lanes, and truck and car separation.

2 points	The project addresses the stated freight problem with appropriate commercial vehicle countermeasures. Common techniques related to commercial vehicle accommodations include improving:

Air Quality & Environment Assets (10 total points)
Transportation projects should limit the impacts on the natural environment. The first metric evaluates the incorporation of green infrastructure to reduce environmental impacts. The second metric evaluates the project's impact on air quality benefits.

Environment (1 point)
Green infrastructure is a design approach to managing stormwater, the urban heat island effect, public health, and air quality. Sustainable stormwater management treats and slows runoff from impervious roadways, sidewalks, and building surfaces. Examples of green infrastructure include bioswales, rain gardens, pervious strips, pervious pavement, and green bulb-outs.

1 point	Project includes green infrastructure elements.
Zero points	Project does not include green infrastructure.

Air Quality (9 points)
A major objective of the transportation planning process is to ensure that the projects in the TIP help to reduce, where possible, and minimize the air quality impacts of transportation projects in accordance with federal, state, and local air quality standards, regulations, and priorities. The St. Louis region is in marginal non-attainment for the 2008 eight-hour ozone standard.

To measure the project's impact on air quality, an analysis will be performed to determine the emissions reduction of the precursors of ground-level ozone formation (volatile organic compounds and oxides of nitrogen).

9 points	0.91 kg/day +
7 points	0.091-0.9 kg/day
5 points	0.036-0.09 kg/day
3 points	0.011-0.035 kg/day
Zero points	0-0.01 kg/day

Safety Project Type

Table 8 outlines the scheme for evaluating safety projects. Safety projects are assessed for six out of the 10 criteria and include 16 metrics. No measures were identified for the criteria related to Foster a Vibrant Downtown & Central Core, Support a Diverse Economy with a Reliable System, Job Quality Development, and Protect Air Quality & Environmental Assets. Further information on the metrics used to evaluate safety projects follows.

Table 8: Safety Project Type Evaluation Scheme

Connected2045 **Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	Road or bridge condition	PASER rating or bridge sufficiency rating
	ITS condition	Preserving ITS components
	Safety hardware condition	Preserving Safety hardware
Support Public Transportation	Improved transit connections	1. Transit proximity 2. Physical improvements to transit
Support Neighborhoods & Communities	Environmental Justice	Project falls in or partially located in area with a high concentration of: a. low-income persons or minority populations b. zero-vehicle households c. seniors or persons with disabilities
Foster a Vibrant Downtown & Central Core	n/a	n/a
Provide More Transportation Choices	Bicycle & pedestrian level of stress/comfort	1. Pedestrian facility type 2. Bicycle facility type 3. Traffic calming and design improvements 4. Intersection treatments
Promote Safety	Improved safety	1. Total crash rate 2. Fatal & serious injury crash rate 3. Benefit/cost analysis 4. Safety countermeasure proposed
Support a Diverse Economy with a Reliable System	n/a	n/a
Support Quality Job Development	n/a	n/a
Strengthen Intermodal Connections	Regional freight significance	1. Freight proximity 2. Commercial vehicle countermeasures
Protect Air Quality & Environmental Assets	n/a	n/a

Preserve & Maintain the Existing System (5 total points)

Projects will be assessed in terms of how they contribute to the preservation of existing infrastructure assets. The first metric evaluates the condition of the pavement or bridge. Sponsors can score points under preservation if they are improving the condition of the facility. Roadways or bridges with low pavement/sufficiency ratings will receive a higher preservation score. The second metric relates to the replacement of ITS components. The third metric relates to the replacement of safety components. If the sponsor receives points in the first metric, second metric, and third metric, the scores of the three metrics will be averaged.

Road or Bridge Condition (5 points)

Pavement condition will be assessed using the Pavement Surface Evaluation and Rating (PASER) Guide, which is a visual rating system. PASER ratings range from 1-10, with 1 being '*very poor*' condition and 10 being '*excellent*' condition.

5 points	PASER 2.5 or less
4 points	PASER 2.6-3.5
3 points	PASER 3.6-5.5
2 points	PASER 6.6-7.5

1 point	PASER 7.6-8.5
Zero points	PASER 8.6-10

Bridge conditions will be assessed using the bridge sufficiency rating system approved by FHWA. Bridge sufficiency ratings range from 0-100, with 0 being *'completely deficient'* and 100 being a *'new'* bridge. State DOTs calculate the ratings based on several factors, including: width, vertical clearance, load capacity, essentiality for public use, and structural safety.

5 points	Bridge sufficiency rating 0-39.9 (very poor)
4 points	Bridge sufficiency rating 40-49.9 (poor)
3 points	Bridge sufficiency rating 50-59.9 (fair)
2 points	Bridge sufficiency rating 60-79.9 (good)
Zero points	Bridge sufficiency rating 80-100 (excellent)

ITS Components (5 points)
Project can earn points if existing ITS components will be preserved, repaired, improved, or upgraded (for example: signals, traffic sensors). To receive points, the ITS components must be within the project limits.

5 points	Existing ITS components are inoperable or require repairs, improvements, or upgrades.

Safety Hardware (5 points)
Project can earn points if existing safety hardware will be repaired, improved, or upgraded (for example: signage, guardrails, crash cushion). To receive points, the safety hardware must be within the project limits.

5 points	Existing safety hardware require repairs, improvements, or upgrades.

Support Public Transportation (5 total points)
Road projects can provide multiple benefits to public transit, including better mobility for transit vehicles and better access for users of all ages and abilities.

Transit Proximity (3 points)
Projects located on a transit route will earn points under this metric. EWG staff will use Bi-State Development, Madison County Transit, St. Clair County Transit, and St. Charles Area Transit route data and GIS analysis to determine if the project is located on or intersects a transit route.

3 points	Project located on a transit route.
1 point	Project intersects a transit route.
Zero points	Project is not on a transit route.

Physical Improvements to Transit (2 points)
A walking or bicycling trip can be longer if it involves transit. In addition, improvements to transit infrastructure can encourage seniors or persons with a disability to utilize public transportation. Physical improvements to a bus stop include: sidewalks to transit facilities, removing obstructions blocking access to transit facilities, landing pads, appropriate street crossings near transit facilities, lighting, bus shelters, benches, etc.

2 points	Project includes physical improvements to transit system.
1 point	New or upgraded sidewalk connections to transit.
Zero points	Project does not include physical improvements to transit system.

Support Neighborhoods & Communities (5 total points)
This measure is included to account for projects that are located in Environmental Justice (EJ) areas. The purpose of EJ is to focus federal attention on the environmental and human health effects of federal actions on minority or low-income populations with the goal of achieving environmental protection for all communities. EWG further expands on EJ to include areas with a high concentration of one or more of: zero-vehicle households, elderly, and persons with a disability. The EJ policy ensures that populations that have traditionally been underserved have safe access to community resources and meaningful choices in transportation. Census data and GIS analysis is used to determine if the project is located in an EJ area. A map of the EJ areas is provided in **Appendix A**.

5 points	Project falls in, or partially in, an EJ area with high concentration of low-income persons, or minorities.
4 points	Project falls in, or partially in, an EJ area with high concentration of zero-vehicle households.
2 point	Project falls in, or partially in, an EJ area with high concentration of seniors or persons with a disability.
Zero points	Project is not located in an EJ area OR project imposes a burden on EJ area.

Projects that are located within EJ areas will not earn points if they impose a burden on the population of the area. Burdens may include disruption of community cohesion (i.e., access to schools, parks, medical facilities, and religious institutions), adverse employment effects, decline in tax base or property values, displacements, increased noise and/or emissions, diminished aesthetics, and disruption to businesses, or access to transit.

Provide More Transportation Choices (10 total points)
Per the 2010 USDOT Policy Statement *Bicycle and Pedestrian Accommodation Regulations and Recommendations*, every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. The USDOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. The four metrics below will be used to evaluate the project's multimodal elements.

Pedestrian Facilities (4 points)
Pedestrian facilities with a high-level of comfort will earn points under this metric.

4 points	Project corrects existing sidewalk deficiencies (PSR 0-2 and/or width <4') OR new 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on both sides of road OR 10' shared-use path (min).
2 points	New 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on one side of road OR 8' shared-use path.

1 point	Project addresses curb ramps only.
Zero points	Project does not satisfy the above OR no pedestrian facility is proposed.

Bicycle Facilities (4 points)
Bicycle facilities with a low-level of stress will earn points under this metric.

4 points	Physically protected or buffered bicycle facility OR 10' shared-use path (min).
3 points	Conventional bike lanes on roads at 30 mph or less OR 8' shared-use path.
2 points	Conventional bike lanes on roads at 35 mph OR paved shoulders (recommended width 5'-8').
1 point	Shared-lane markings on roads at 25 mph or less OR 4' paved shoulders.
Zero points	Project does not satisfy the above OR no bicycle facility is proposed.

Traffic Calming and Design Improvements (1 point)
Traffic calming and design improvements can improve stress levels for bicyclists and comfort levels for pedestrians. Examples of traffic calming and design improvements include: bulb outs, raised crosswalks, lane diets, road diets, refuge islands, lighting, etc. Sponsors can score one point under this metric.

0.5 points	Project has traffic calming solutions to reduce modal conflicts.
0.5 points	Project includes pedestrian-scale lighting.
Zero points	Project does not satisfy the above.

Intersection Treatments (1 point)
Design for intersections should reduce conflict between pedestrian/bicyclists and vehicles by heightening the level of visibility and indicating a clear right-of-way. Examples of intersection treatments include: pedestrian signals, pedestrian flashing beacons, marked crosswalks, high visibility crosswalk markings, bicycle intersection crossing markings, median refuge islands, etc.

1 point	Crossing treatments are provided at intersections or uncontrolled locations OR no intersections in projects limits. **Note**: pedestrian and bicycle projects must have logical termini.
Zero points	No crossing treatments where warranted.

Promote Safety (70 total points)
EWG is focusing on lowering the number of fatalities and serious injuries caused by vehicle crashes. To meet this goal, all projects should strive to correct safety issues in high crash locations or use a systemic approach to address future crashes. The two metrics relate to the current conditions on the roadway by looking at the total crash rate and the fatal and serious injury crash rate. This helps prioritize projects that are in locations experiencing a current problem. The third metric addresses the stated safety problem with an appropriate safety countermeasure.

Project sponsors must use five years of crash data (2011-2015) when calculating the total crash rate and the fatal and serious injury crash rate. Sponsors should use the number of fatal and serious injury crashes and not the total number of fatalities or serious injuries. To receive points under metric one and metric two, the project must include a safety countermeasure that addresses the current safety problem.

Total Crash Rate (10 points)
EWG will group all projects with crashes into quartiles and assign points as follows:

10 points	Top quartile
8 points	Second quartile
6 points	Third quartile
4 point	Lowest quartile

Fatal and Serious Injury Crash Rate (10 points)
EWG will group all projects with crashes into quartiles and assign points as follows:

10 points	Top quartile
8 points	Second quartile
6 points	Third quartile
4 point	Lowest quartile

Note: If an *intersection* project is in the lowest quartile in both metric one and metric two, and the project includes a safety countermeasure that addresses the safety problem, the project can receive ten total points. Also, if a project has no crashes on the project limits, but includes a preventative safety countermeasure, the project can receive ten total points.

Benefit/Cost Analysis (50 points)
This metric compares all of the project's benefits associated with a countermeasure to the cost of implementing the countermeasure.

50 points	Benefit/cost ratio greater than 3.0
47 points	Benefit/cost ratio is greater than 2.1 and less than 3.0
45 points	Benefit/cost ratio is greater than 1.0 and less than 2.1
40 points *	Benefit/cost ratio is greater than 0 and less than 1
Zero points	Benefit/cost ratio is equal to 0

* To receive 40 points, the location and/or safety countermeasure must be identified in the state's strategic highway safety plan OR the respective county strategic highway plan OR a safety study that was completed for the specific project location.

Strengthen Intermodal Connections (5 total points)
The St. Louis region is well positioned to capture some of the expected growth in nationwide freight movement for all modes, given the region's central location, rivers, low traffic congestion, and lack of tolling. Future growth will depend on coordinating public and private freight decision making and investments, ensuring reliable truck travel times, strengthening multi-modal connections to key industrial site areas, and ensuring the region's workforce can access freight employment opportunities. A map of the industrial site areas and the Primary Highway Freight System is provided in **Appendix A**.

Freight Proximity (3 points)

In 2013, EWG completed the St. Louis Regional Freight Study. The Study identified key 23 industrial areas that influence the freight industry in the St. Louis region. Industrial site areas are centers of employment and are connected by a series of transportation networks. Projects that improve mobility to an industrial site area, connect to the Primary Highway Freight System, or connect to an intermodal facility will earn points under this metric.

3 points	The project meets one of the following criteria: • Located within one of 23 key industrial site areas. • Connects to the Primary Highway Freight System. • Connects to an intermodal freight facility, serves a major freight generator, logistic center, manufacturing and warehouse industrial land, or navigable waterway or Port District.

Commercial Vehicle Countermeasure (2 points)

To earn points under this metric, the project must score points under the first metric, freight proximity, and include a commercial vehicle countermeasure that improves freight movement. Common techniques related to commercial vehicle accommodations include improving shoulder width and pavement structure, intersection design, parking, acceleration/deceleration lanes, and truck and car separation.

2 points	The project addresses the stated freight problem with appropriate commercial vehicle countermeasures.

Active Transportation

Table 9 outlines the scheme for evaluating active transportation projects. Active transportation projects are assessed for six out of the 10 criteria and include 13 metrics. No measures were identified for the criteria related to Preserve & Maintain the Existing System, Support a Diverse Economy with a Reliable System, Job Quality Development, and Strengthen Intermodal Connections. Further information on the metrics used to evaluate active transportation projects follows.

Table 9: Active Transportation Project Type Evaluation Scheme

***Connected2045* Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	n/a	n/a
Support Public Transportation	Improved transit connections	1. Transit proximity 2. Physical improvements to transit
Support Neighborhoods & Communities	Connecting communities to opportunities	1. Project falls in or partially located in area with a high concentration of: a. low-income persons or minority populations b. zero-vehicle households c. seniors or persons with disabilities 2. Access to schools 3. Access to community resources 4. Planning efforts
Foster a Vibrant Downtown & Central Core	Multimodal needs of residents and access to employment	Population, employment, retail, and transit density
Provide More Transportation Choices	System connectivity	Multimodal linkages to existing facilities
Promote Safety	Bicycle & pedestrian level of stress/comfort	1. Pedestrian/bicycle crashes 2. Pedestrian/bicycle facility type 3. Traffic calming and design improvements 4. Intersection treatments
Support a Diverse Economy with a Reliable System	n/a	n/a
Support Quality Job Development	n/a	n/a
Strengthen Intermodal Connections	n/a	n/a
Protect Air Quality & Environmental Assets	Impact to the environment	Environmental infrastructure elements

Support Public Transportation (8 total points)

Bicycling and walking are complementary to transit. The Gateway Bike Plan states, "Targeting the provision of safe and convenient bicycle facilities such as lanes, trails, and bicycle parking can increase the service radius of a transit stop." In addition, bus stops that have access via sidewalks and appropriate street crossing locations ensure personal safety for pedestrians who use transit.

Transit Proximity

The Federal Transit Administration (FTA) determined in a 2011 policy statement that all pedestrian improvements located within ½-mile and all bicycle improvements located within 3-miles of a public transportation stop or station shall have a *de facto* physical and functional relationship to public transportation.

4 points	Pedestrian project is located within ½-mile OR bicycle project is within 3 miles of a bus stop, transfer center, or station.
Zero points	Project does not satisfy the above.

Physical Improvements to Transit
A walking or bicycling trip can be longer if it involves transit. In addition, improvements to transit infrastructure can encourage seniors or persons with a disability to utilize public transportation. Physical improvements to a bus stop include: sidewalks to transit facilities, removing obstructions blocking access to transit facilities, landing pads, appropriate street crossings near transit facilities, lighting, bus shelters, benches, etc.

4 points	Project includes physical improvements to transit system.
2 points	New or upgraded sidewalk connections to transit.
Zero points	Project does not include physical improvements to transit system.

Support Neighborhoods & Communities (17 total points)
Active transportation projects should connect communities to opportunities across the region. The four metrics below will be used to evaluate the project's impact on neighborhoods and communities.

Environmental Justice (6 points)
This measure is included to account for projects that are located in Environmental Justice (EJ) areas. The purpose of EJ is to focus federal attention on the environmental and human health effects of federal actions on minority or low-income populations with the goal of achieving environmental protection for all communities. EWG further expands on EJ to include areas with a high concentration of one or more of: zero-vehicle households, elderly, and persons with a disability. The EJ policy ensures that populations that have traditionally been underserved have safe access to community resources and meaningful choices in transportation. Census data and GIS analysis is used to determine if the project is located in an EJ area. A map of the EJ areas is provided in **Appendix A**.

6 points	Project falls in, or partially in, an EJ area with high concentration of low-income persons, or minorities.
5 points	Project falls in, or partially in, an EJ area with high concentration of zero-vehicle households.
2 point	Project falls in, or partially in, an EJ area with high concentration of seniors or persons with a disability.
Zero points	Project is not located in an EJ area.

Access to Schools (6 points)
This metric is included to account for projects that provide safe routes to schools. Making bicycling and walking to school a safer and more appealing transportation choice encourages a healthy and active lifestyle from an early age.

6 points	Project provides direct access to a school.
3 points	Project is within ½-mile of a school.
Zero points	Project is not within a ½-mile of a school

Access to Community Resources (2 points)
Transportation investments that connect residents to local community resources can have a profound impact on public health. This metric evaluates improved access to community resources. Examples of community resources include: parks, recreational facilities, medical centers, civic buildings, etc.

2 points	Project provides direct access to a community resource.
Zero points	Project does not provide access to a community resource.

Planning (3 points)
This metric is included to identify and add significance to roadway segments or trail corridors that are identified in a locally adopted plan.

3 points	Project is specifically prioritized in a planning document.
1 point	Project is consistent with planning document or Complete Streets policy
Zero points	No planning documentation provided to support project.

Foster a Vibrant Downtown & Central Core (10 total points)
Improving access to and mobility within communities is a goal of *Connected2045*. Projects will be evaluated on how well they are served by pedestrian- and bicycle-supportive densities, land uses, and access to transit. EWG developed a Project Utilization Index (PUI) to evaluate anticipated usage. A map of the PUI is included in **Appendix A**.

10 points	Average PUI 3+
6 points	Average PUI 2-2.9
2 points	Average PUI 1-1.9
4 point	Average PUI <1

Provide More Transportation Choices (27 total points)
System connectivity is a factor related to linking or connecting existing pedestrian or bicycle facilities to complete a network. This measure relates to *Connected2045*'s goal of providing comprehensive pedestrian and bicycle facilities. The metric evaluates the level of connectivity that the project will provide.

27 points	Project eliminates barrier AND connects on one end.
25 points	Project fills in gaps by linking both ends. Gap = no pedestrian/bicycle facilities OR existing poor (PSR 0-2) sidewalk OR high-stress bicycle facility.
20 points	Project fills in gap by linking both ends. Gap = existing fair (PSR 2-3) sidewalk.
15 points	Project connects on one end (extends or intersects).
10 points	Project is adjacent to existing facility (no connections established, but existing facility is within a ¼- mile radius).
5 points	Project is a new, isolated facility (no existing facility within a ¼-mile radius).

Promote Safety (35 total points)
Per the 2010 USDOT Policy Statement *Bicycle and Pedestrian Accommodation Regulations and Recommendations*, every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. The USDOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. The five metrics below will be used to evaluate the project's multimodal safety elements.

Pedestrian/Bicycle Crashes (2 points)
This metric relates to *Connected2045*'s goal of creating a safe transportation system. Projects that improve locations with pedestrian and/or bicycle crashes will receive points.

2 points	The project corridor has locations with pedestrian-involved or bicycle-involved crashes and project addresses the safety issue with an appropriate countermeasure.
Zero points	There are no pedestrian-involved or bicycle-involved crashes along the project corridor.

Pedestrian/Bicycle Facility Type (24 points)
Active transportation projects can include pedestrian facilities, bicycle facilities, or both. If a sponsor proposes both facility types, the scores of the two metrics will be averaged.

Pedestrian facilities with a high-level of comfort will earn points under this metric.

24 points	Project corrects existing sidewalk deficiencies (PSR 0-2 and/or width <4') OR new 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on both sides of road.
12 points	New 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on one side of road.
Zero points	Project does not satisfy the above.

Bicycle facilities with a low-level of stress will earn points under this metric.

24 points	Physically protected or buffered bicycle facility OR 10' shared-use path (min).
12 points	Conventional bike lanes on roads at 30 mph or less OR 8' shared-use path.
6 points	Conventional bike lanes on roads at 35 mph.
3 points	Shared-lane markings on roads at 25 mph or less.
Zero points	Project does not satisfy the above.

Traffic Calming and Design Improvements (6 points)
Traffic calming and design improvements can improve stress levels for bicyclists and comfort levels for pedestrians. Examples of traffic calming and design improvements include: bulb outs, raised crosswalks, lane diets, road diets, refuge islands, lighting, etc. Sponsors can score six points under this metric.

3 points	Project has traffic calming solutions to reduce modal conflicts.
3 points	Project includes pedestrian-scale lighting.
Zero points	Project does not satisfy the above.

Intersection Treatments (3 points)
Design for intersections should reduce conflict between pedestrian/bicyclists and vehicles by heightening the level of visibility and indicating a clear right-of-way. Examples of intersection treatments include: pedestrian signals, pedestrian flashing beacons, marked crosswalks, high visibility crosswalk markings, bicycle intersection crossing markings, median refuge islands, etc.

3 points	Crossing treatments are provided at intersections or uncontrolled locations OR no intersections in projects limits. **Note**: pedestrian and bicycle projects must have logical termini.
Zero points	No crossing treatments where warranted.

Protect Air Quality & Environmental Assets (3 total points)
Transportation projects should limit the impacts on the natural environment. Green infrastructure is a design approach to managing stormwater, the urban heat island effect, public health, and air quality. Sustainable stormwater management treats and slows runoff from impervious roadways, sidewalks, and building surfaces. Examples of green infrastructure include bioswales, rain gardens, pervious strips, pervious pavement, and green bulb-outs. This metric evaluates the integration of green infrastructure into roadway projects.

3 points	Project includes green infrastructure elements.
Zero points	Project does not include green infrastructure.

Transit Asset Management and System Upgrades

Table 10 outlines the scheme for evaluating transit asset management and system upgrades projects. Transit asset management and system upgrades projects are assessed for eight out of the 10 criteria and include eight metrics. No measures were identified for the criteria related to Job Quality Development and Strengthen Intermodal Connections. Further information on the metrics used to evaluate transit asset management and system upgrades projects follows.

Table 10: Transit Asset Management & System Upgrades Project Type Evaluation Scheme

***Connected2045* Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	Preserving transit assets	Project type and impact on the transit system
	System upgrades	Project type and impact on the transit system
Support Public Transportation	Impact to ridership	Number of passenger trips per year affected by the project
Support Neighborhoods & Communities	Environmental Justice	Project serves or located within EJ community
Foster a Vibrant Downtown & Central Core	Multimodal needs of residents and access to employment	Access improvements in central core
Provide More Transportation Choices	First- and last-mile trip impacts	Multimodal options
Promote Safety	Improved safety	Safety and/or security elements at facilities or on transit vehicles
Support a Diverse Economy with a Reliable System	Service and customer improvements	ITS elements or other service enhancing technologies
Support Quality Job Development	n/a	n/a
Strengthen Intermodal Connections	n/a	n/a
Protect Air Quality & Environmental Assets	Impact to the environment	Zero- or low-emission bus replacements or environmental infrastructure elements

Preserve & Maintain the Existing System (45 total points)
Maintaining transit assets and upgrading the system can help maintain and attract ridership and improve regional mobility. Transit asset management and system upgrades projects will be evaluated under this criterion depending on the type of project submitted: vehicle replacements or system upgrades. Each project type has a different principal measure and metric.

Vehicle Replacements (45 points)
This metric relates the maintenance of the transit system. Preventative maintenance can extend the lifespan of buses. The average mileage of the vehicles to be replaced is the metric used to evaluate preservation of the system. Vehicles and facilities must meet their useful life by the fiscal year federal funds are programmed.

ADA paratransit bus replacement:

45 points Average mileage of vehicles to be replaced is 250,001+.

40 points Average mileage of vehicles to be replaced is 150,001-250,000.

35 points Average mileage of vehicles to be replaced is >150,000.

Bus replacement (large heavy-duty transit buses 35'-40'):

45 points Average mileage of vehicles to be replaced is 650,001+.

40 points Average mileage of vehicles to be replaced is 550,001-650,000.

35 points	Average mileage of vehicles to be replaced is >550,000.

Bus replacement (small heavy-duty transit buses 30'):

45 points	Average mileage of vehicles to be replaced is 500,001+.
40 points	Average mileage of vehicles to be replaced is 400,001-500,000.
35 points	Average mileage of vehicles to be replaced is >400,000.

System Upgrades (45 points)
Upgrading transit facilities or infrastructure can help improve the efficiency of the transit system and improve service for users. This metric relates to the type of facility or infrastructure being upgraded and the impact it has on the transit system.

45 points	Upgrades to transit facilities or infrastructure can receive up to 45 points (i.e., transfer centers upgrades, transit maintenance facilities, park and ride lots, bridge tunnels, etc.). Projects that demonstrate a greater need or have a greater impact will receive more points.
35 points	Station/bus stop improvements or new signage can receive up to 35 points (i.e., improvements to MetroLink station or a greater number of bus stops). Projects that have a greater impact will receive move points.

Support Public Transportation (20 total points)
Ensuring a good state of repair of transit assets and system upgrades has a direct impact on maintaining the existing transit ridership base. Transit ridership is a reflection of vehicle condition, scheduling and operations, and access. This metric relates to the number of passenger trips affected by the project. Projects that will increase the number of passenger trips will receive more points than projects that maintain existing ridership levels. Sponsors must demonstrate that failure to replace or upgrade will negatively impact ridership by documenting inadequate asset availability and the related delays on the route.

20 points	Replacement or upgrade will increase ridership on existing routes.
15 points	Replacement or upgrade is necessary to maintain existing ridership.

Support Neighborhoods & Communities (8 total points)
This measure is included to account for projects that serve Environmental Justice (EJ) populations. Project sponsors will be required to provide information on how the project serves EJ populations.

8 points	The project serves an EJ population or is located within an EJ area.
Zero points	The project does not serve an EJ population or is not located within an EJ area.

Foster a Vibrant Downtown & Central Core (3 total points)
Improving access to and mobility within the central core is a goal of *Connected2045*. Project sponsors will be required to provide information on how the transit project improves access to the central core.

3 points	The project improves access to or mobility within the central core.
Zero points	The project does not serve the central core.

Provide More Transportation Choices (4 total points)
A goal of *Connected2045* is to create viable alternatives to private automobile travel. Biking and walking provide critical first- and last-mile connections to transit. Project sponsors will be required to provide information on any bicycle or pedestrian elements that are included as part of the total project and how they improve multimodal access. Examples of multimodal elements includes bike racks on buses or at facilities, bicycle/pedestrian access to facilities, and stop/station design.

4 points	Project includes multimodal elements or equipment.
Zero points	Project does not include any multimodal elements or equipment.

Promote Safety (5 total points)
This criterion relates to *Connected2045*'s goal of creating a safer transportation system. This metric evaluates the impact the project will have on safety and security. Safety and security measures taken at facilities, stations, or stops will have a higher impact than safety measures taken on transit vehicles.

5 points	Safety and/or security measures at facility, station, and/or stop (i.e., lighting, cameras, emergency call stations, etc.).
3 points	Measures to provide safe services on vehicles (i.e., interior/exterior cameras, audio equipment, object detection or collision warning systems, low floor / kneeling buses, extendable ramps, wheelchair securement, etc.).
Zero points	No safety measures.

Support a Diverse Economy with a Reliable Transportation System (5 total points)
Deployment of ITS technologies can improve the service of a transit network. Examples of ITS project elements include automated vehicle location technology, transit signal priority systems, onboard voice and digital announcements of next stop information, and real time bus arrival information. This metric evaluates the integration of ITS technologies.

5 points	Project incorporates the use of ITS or other operation/service enhancing technologies.
Zero points	Project does not include ITS enhancing technologies.

Protect Air Quality & Environmental Assets (10 total points)
Transportation projects should limit the impacts on the natural environment. The project's air quality benefits OR the integration of green infrastructure will be evaluated.

Replacing diesel buses with zero- or low-emission buses has a positive benefit on air quality. Replacing older diesel buses with newer buses also provides air quality benefits. Incorporating green infrastructure into transit street design also provides positive benefits to the natural environment. Examples of green infrastructure include bioswales, rain gardens, pervious strips, pervious pavement, and green bulb-outs.

10 points	Project replaces bus with zero- or low-emission bus (i.e., electric, hybrid, CNG, LNG) OR project incorporates green design/materials at facilities.
4 points	Project replaces older diesel bus with a new diesel bus.
Zero points	Project does not provide air quality benefits.

Transit Expansion

Table 11 outlines the scheme for evaluating transit expansion projects. Transit expansion projects are assessed for eight out of the 10 criteria and include eight metrics. No measures were identified for the criteria related to Preserve & Maintain the Transportation System and Strengthen Intermodal Connections. Further information on the metrics used to evaluate transit expansion projects follows.

Table 11: Transit Expansion Project Type Evaluation Scheme

Connected2045 **Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	n/a	n/a
Support Public Transportation	Adding capacity	Frequency headway
	Geographic expansion	Population and employment density
Support Neighborhoods & Communities	Environmental Justice	Project serves or located within EJ community
Foster a Vibrant Downtown & Central Core	Multimodal needs of residents and access to employment	Access improvements in central core
Provide More Transportation Choices	First- and last-mile trip impacts	Multimodal options
Promote Safety	Improved safety	Safety and/or security elements at facilities or on transit vehicles
Support a Diverse Economy with a Reliable System	Service and customer improvements	ITS elements or other service enhancing technologies
Support Quality Job Development	Access to jobs	Job density
Strengthen Intermodal Connections	n/a	n/a
Protect Air Quality & Environmental Assets	Impact to the environment	Zero- or low- emission vehicles or environmental infrastructure elements

Support Public Transportation (60 total points)
Transit expansions can help reduce congestion and improve regional mobility by improving reliability and access for more people to more locations. Transit expansion projects will be evaluated under this criterion depending on the type of project submitted: adding capacity or geographic expansion. Each project type has a different principal measure and metric.

Adding Capacity (60 points)
Improving frequency can help to increase annual transit boardings system-wide. It has been documented that a one percent increase in frequency corresponds to a 0.5 percent increase in ridership.

60 points	Project provides 2.5% or higher increase in ridership along route.
50 points	Project provides 2-2.5% increase in ridership along route.
40 points	Project provides 1.5-2% increase in ridership along route.
30 points	Project provides 1-1.5% increase in ridership along route.
20 points	Project provides 0.5-1% increase in ridership along route.
Zero points	Project provides less than 0.5% increase in ridership along route.

Geographic Expansion (65 points)
Implementing transit expansion projects where existing land uses best support the project's success is the key metric under this criterion. EWG developed a population and employment index to evaluate potential ridership. Expansion projects that are located in supportive residential and employment densities will score higher. Points will be assigned based on the average score of a buffer of 0.5 miles of a non-express bus route and a buffer of 1

mile of an express bus stop. Geographic expansion projects receive five additional points under this criterion to account for the Support Quality Jobs criterion. A map of the population and employment index is included in **Appendix A**.

65 points	Average population and employment index of 4+
60 points	Average population and employment index of 3-3.9
55 points	Average population and employment index of 2-2.9
35 points	Average population and employment index of 1-1.9
20 points	Average population and employment index <1

Support Neighborhoods & Communities (8 total points)
This measure is included to account for projects that serve Environmental Justice (EJ) populations. Project sponsors will be required to provide information on how the project serves EJ populations.

8 points	The project serves an EJ population or is located within an EJ area.
Zero points	The project does not serve an EJ population or is not located within an EJ area.

Foster a Vibrant Downtown & Central Core (3 total points)
Improving access to and mobility within the central core is a goal of *Connected2045*. Project sponsors will be required to provide information on how the transit project improves access to the central core.

3 points	The project improves access to or mobility within the central core.
Zero points	The project does not serve the central core.

Provide More Transportation Choices (4 total points)
A goal of *Connected2045* is to create viable alternatives to private automobile travel. Biking and walking provide critical first- and last-mile connections to transit. Project sponsors will be required to provide information on any bicycle or pedestrian elements that are included as part of the total project and how they improve multimodal access. Examples of multimodal elements includes bike racks on buses or at facilities, bicycle/pedestrian access to facilities, and stop/station design.

4 points	Project includes multimodal elements or equipment.
Zero points	Project does not include any multimodal elements or equipment.

Promote Safety (5 total points)
This criterion relates to *Connected2045*'s goal of creating a safer transportation system. This metric evaluates the impact the project will have on safety and security. Safety and security measures taken at facilities, stations, or stops will have a higher impact than safety measures taken on transit vehicles.

5 points	Safety and/or security measures at facility, station, and/or stop (i.e., lighting, cameras, emergency call stations, etc.).
3 points	Measures to provide safe services on vehicles (i.e., interior/exterior cameras, audio equipment, object detection or collision warning systems, low floor / kneeling buses, extendable ramps, wheelchair securement, etc.).
Zero points	No safety measures.

Support a Diverse Economy with a Reliable Transportation System (5 total points)
Deployment of ITS technologies can improve the service of a transit network. Examples of ITS project elements include automated vehicle location technology, transit signal priority systems, onboard voice and digital announcements of next stop information, and real time bus arrival information. This metric evaluates the integration of ITS technologies.

5 points	Project incorporates the use of ITS or other operation/service enhancing technologies.
Zero points	Project does not include ITS enhancing technologies.

Support Quality Job Development (5 total points)
Access to jobs is an important function of the transportation system. The *OnTheMap* tool is derived from census data and will be used to assess where workers are employed in the region. Employment density will be used as a metric in determining how important transit improvements to are in the surrounding area. Geographic expansion projects will not be scored under this criterion since job data is used to determine the population/employment index.

5 points	High jobs/sq. mile
4 points	Medium-high jobs/sq. mile
3 points	Medium jobs/sq. mile
2 point	Medium-low jobs/sq. mile
Zero points	Low jobs/sq. mile

Protect Air Quality & Environmental Assets (10 total points)
Transportation projects should limit the impacts on the natural environment. The project's air quality benefits OR the integration of green infrastructure will be evaluated. Zero- or low-emission buses have a positive benefit on air quality. Incorporating green infrastructure into transit street design also provides positive benefits to the natural environment. Examples of green infrastructure include bioswales, rain gardens, pervious strips, pervious pavement, and green bulb-outs.

10 points	Project includes bus with zero- or low-emission bus (i.e., electric, hybrid, CNG, LNG) OR project incorporates green design/materials at facilities.
Zero points	Project does not provide air quality benefits.

Freight/Economic Development

Table 12 outlines the scheme for evaluating freight/economic development projects. Freight/economic development projects are assessed for nine out of the 10 criteria and include 19 metrics. No measures were identified for the criteria related to Foster a Vibrant Downtown & Central Core. Further information on the metrics used to evaluate freight/economic development projects follows.

Table 12: Freight/Economic Development Project Type Evaluation Scheme

***Connected2045* Investment Priority Criteria**	**Measure**	**Metric**
Preserve & Maintain the Existing System	Road or bridge condition	PASER rating or bridge sufficiency rating
	ITS condition	Preserving ITS components
Support Public Transportation	Improved transit connections	1. Transit proximity 2. Physical improvements to transit
Support Neighborhoods & Communities	Environmental Justice	Project falls in or partially located in area with a high concentration of: a. low-income persons or minority populations b. zero-vehicle households c. seniors or persons with disabilities
Foster a Vibrant Downtown & Central Core	n/a	n/a
Provide More Transportation Choices	Bicycle & pedestrian level of stress/comfort	1. Pedestrian facility type 2. Bicycle facility type 3. Traffic calming and design improvements 4. Intersection treatments
Promote Safety	Improved safety	1. Total crash rate 2. Fatal & serious injury crash rate 3. Safety countermeasure proposed
Support a Diverse Economy with a Reliable System	Travel time reliability	1. Planning Time Index and Travel Time Index or volume/capacity 2. Strategy
Support Quality Job Development	Access to jobs *(Economic Development projects only)*	Cost per job created
Strengthen Intermodal Connections	Regional freight significance *(Freight projects only)*	1. Project located within an Industrial Site Area a. mega freight center, b. major freight center, or c. intermediate freight center 2. Provides connection to intermodal facility 3. Commercial vehicle countermeasure proposed
	Economic development significance *(Economic Development projects only)*	1. Average income of industry supported 2. Number of jobs created
Protect Air Quality & Environmental Assets	Impact to the environment	Environmental infrastructure elements

Preserve & Maintain the Existing System (5 total points)

In order to preserve and maintain the existing transportation system, projects will be assessed in terms of how they contribute to the preservation of existing infrastructure assets. The first metric evaluates the condition of the pavement or bridge. Sponsors can score points under preservation if they are improving the condition of the facility. Roadways or bridges with low pavement/sufficiency ratings will receive a higher preservation score. The second metric relates to the replacement of ITS components. If the sponsor receives points in the first metric and the second metric, the scores of the two metrics will be averaged.

Pavement/Bridge Condition (5 points)

Pavement condition will be assessed using the Pavement Surface Evaluation and Rating (PASER) Guide, which is a visual rating system. PASER ratings range from 1-10, with 1 being '*very poor*' condition and 10 being '*excellent*' condition.

5 points	PASER 2.5 or less
4 points	PASER 2.6-3.5
3 points	PASER 3.6-5.5
2 points	PASER 6.6-7.5
1 point	PASER 7.6-8.5
Zero points	PASER 8.6-10

Bridge conditions will be assessed using the bridge sufficiency rating system approved by FHWA. Bridge sufficiency ratings range from 0-100, with 0 being *'completely deficient'* and 100 being a *'new'* bridge. State DOTs calculate the ratings based on several factors, including: width, vertical clearance, load capacity, essentiality for public use, and structural safety.

5 points	Bridge sufficiency rating 0-39.9 (very poor)
4 points	Bridge sufficiency rating 40-49.9 (poor)
3 points	Bridge sufficiency rating 50-59.9 (fair)
2 points	Bridge sufficiency rating 60-79.9 (good)
Zero points	Bridge sufficiency rating 80-100 (excellent)

ITS Components (5 points)
Project can earn points if existing ITS components will be preserved, repaired, improved, or upgraded (for example: signals, traffic sensors). To receive points, the ITS components must be within the project limits.

5 points	Existing ITS components are inoperable or require repairs, improvements, or upgrades.

Support Public Transportation (5 total points)
Public transportation provides a variety of benefits, including accessible transportation options for all ages and abilities. The first metric evaluates how significant the project's location is to the public transportation network. The second metric evaluates access improvements to bus stops and stations and enhancements to transit infrastructure.

Transit Proximity (3 points)
EWG staff will use Bi-State Development, Madison County Transit, St. Clair County Transit, and St. Charles Area Transit route data and GIS analysis to determine if the project is located on or intersects a transit route.

3 points	Project located on a transit route.
1 point	Project intersects a transit route.
Zero points	Project is not on a transit route.

Physical Improvements to Transit (2 points)
A walking or bicycling trip can be longer if it involves transit. In addition, improvements to transit infrastructure can encourage seniors or persons with a disability to utilize public transportation. Physical improvements to a bus stop include: sidewalks to transit facilities, removing obstructions blocking access to transit facilities, landing pads, appropriate street crossings near transit facilities, lighting, bus shelters, benches, etc.

2 points	Project includes physical improvements to transit system.
1 point	New or upgraded sidewalk connections to transit.
Zero points	Project does not include physical improvements to transit system.

Support Neighborhoods & Communities (4 total points)
This measure is included to account for projects that are located in Environmental Justice (EJ) areas. The purpose of EJ is to focus federal attention on the environmental and human health effects of federal actions on minority or low-income populations with the goal of achieving environmental protection for all communities. EWG further expands on EJ to include areas with a high concentration of one or more of: zero-vehicle households, elderly, and persons with a disability. The EJ policy ensures that populations that have traditionally been underserved have safe access to community resources and meaningful choices in transportation. Census data and GIS analysis is used to determine if the project is located in an EJ area. A map of the EJ areas is provided in **Appendix A**.

4 points	Project falls in, or partially in, an EJ area with high concentration of low-income persons, or minorities.
3 points	Project falls in, or partially in, an EJ area with high concentration of zero-vehicle households.
1 point	Project falls in, or partially in, an EJ area with high concentration of seniors or persons with a disability.
Zero points	Project is not located in an EJ area OR project imposes a burden on EJ area.

Projects that are located within EJ areas will not earn points if they impose a burden on the population of the area. Burdens may include disruption of community cohesion (i.e., access to schools, parks, medical facilities, and religious institutions), adverse employment effects, decline in tax base or property values, displacements, increased noise and/or emissions, diminished aesthetics, and disruption to businesses, or access to transit.

Provide More Transportation Choices (5 total points)
Per the 2010 USDOT Policy Statement *Bicycle and Pedestrian Accommodation Regulations and Recommendations*, every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. The USDOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. The four metrics below will be used to evaluate the project's multimodal elements.

Pedestrian Facilities (2 points)
Pedestrian facilities with a high-level of comfort will earn points under this metric.

2 points	Project corrects existing sidewalk deficiencies (PSR 0-2 and/or width <4') OR new 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on both sides of road OR 10' shared-use path (min).
1.5 points	New 5' (min) sidewalks (residential) or 8' (min) sidewalks (commercial) on one side of road OR 8' shared-use path.
1 point	Project addresses curb ramps only.
Zero points	Project does not satisfy the above OR no pedestrian facility is proposed.

Bicycle Facilities (2 points)
Bicycle facilities with a low-level of stress will earn points under this metric.

2 points	Physically protected or buffered bicycle facility OR 10' shared-use path (min).
1.5 points	Conventional bike lanes on roads at 30 mph or less OR 8' shared-use path.
1 point	Conventional bike lanes on roads at 35 mph OR paved shoulders (recommended width 5'-8').
0.5 points	Shared-lane markings on roads at 25 mph or less OR 4' paved shoulders.
Zero points	Project does not satisfy the above OR no bicycle facility is proposed.

Traffic Calming and Design Improvements (0.5 points)
Traffic calming and design improvements can improve stress levels for bicyclists and comfort levels for pedestrians. Examples of traffic calming and design improvements include: bulb outs, raised crosswalks, lane diets, road diets, refuge islands, lighting, etc.

0.5 points	Project has traffic calming solutions to reduce modal conflicts OR includes pedestrian-scale lighting.
Zero points	Project does not satisfy the above.

Intersection Treatments (0.5 points)
Design for intersections should reduce conflict between pedestrian/bicyclists and vehicles by heightening the level of visibility and indicating a clear right-of-way. Examples of intersection treatments include: pedestrian signals, pedestrian flashing beacons, marked crosswalks, high visibility crosswalk markings, bicycle intersection crossing markings, median refuge islands, etc.

0.5 points	Crossing treatments are provided at intersections or uncontrolled locations OR no intersections in projects limits. **Note**: pedestrian and bicycle projects must have logical termini.
Zero points	No crossing treatments where warranted.

Promote Safety (10 total points)
EWG is focusing on lowering the number of fatalities and serious injuries caused by vehicle crashes. To meet this goal, all projects should strive to correct safety issues in high crash locations or use a systemic approach to address future crashes. The two metrics relate to the current conditions on the roadway by looking at the total crash rate and the fatal and serious injury crash rate. This helps prioritize projects that are in locations experiencing a current problem. The third metric addresses the stated safety problem with an appropriate safety countermeasure.

Project sponsors must use five years of crash data (2011-2015) when calculating the total crash rate and the fatal and serious injury crash rate. Sponsors should use the number of fatal and serious injury crashes and not the total number of people who died or were seriously injured. To receive points under metric one and metric two, the project must include a safety countermeasure that addresses the current safety problem.

Total Crash Rate (5 points)
EWG will group all projects with crashes into quartiles and assign points as follows:

5 points	Top quartile
4 points	Second quartile

3 points	Third quartile
2 points	Lowest quartile

Fatal and Serious Injury Crash Rate (5 points)
EWG will group all projects with crashes into quartiles and assign points as follows:

5 points	Top quartile
4 points	Second quartile
3 points	Third quartile
2 point	Lowest quartile

Note: If an *intersection* project is in the lowest quartile in both metric one and metric two, and the project includes a safety countermeasure that addresses the safety problem, the project can receive points five total points. Also, if a project has no crashes on the project limits, but includes a preventative safety countermeasure, the project can receive five total points.

Support a Diverse Economy with a Reliable Transportation System (10 total points)
Improving congested roadways benefits the movement of people and goods. Projects will be evaluated based on how well they improve travel conditions. The first metric relates to the existing non-recurring congestion on the project corridor. The second metric relates to the strategy used to mitigate congestion. The scores of the two metrics will be averaged to determine the points under this criterion.

Travel Time Reliability (10 points)
Non-recurring congestion will be assessed using the Planning Time Index (PTI) and the Travel Time Index (TTI), OR the volume to capacity (V/C) ratio. The PTI and TTI are derived from HERE data from the Regional Integrated Transportation Information System (RITIS). The PTI and TTI will only be calculated on roadways for which probe data is available. The points assigned for the PTI and the TTI will be averaged to determine the travel time reliability score. Roads with lower functional classifications will be evaluated based on the V/C ratios established in EWG's travel demand model.

Probe data is available in RITIS for project length:

Planning Time Index		Travel Time Index	
10 points	PTI 2.5+	**10 points**	TTI 2+
8 points	PTI 2.1-2.49	**8 points**	TTI 1.75-1.99
6 points	PTI 1.7-2.09	**6 points**	TTI 1.5-1.74
4 points	PTI 1.35-1.69	**4 points**	TTI 1.25-1.49
2 points	PTI 1.1-1.34	**2 points**	TTI 1-1.24
Zero points	PTI 1.1 or less	**Zero points**	TTI 1 or less

Probe data is not available in RITIS for project length:

Volume/Capacity Ratio	
10 points	V/C 1.1+
8 points	V/C 0.96-1.0
6 points	V/C 0.85-0.95
4 points	V/C 0.7-0.84
Zero points	V/C 0.69 or less

Strategy (10 points)
A higher PTI and TTI or V/C ratio is indicative of higher levels of congestion. The Strategic Highway Research Program (SHRP 2) has identified strategies that have a direct relationship to travel time reliability. The strategies can be used to mitigate the presence of congestion. The strategies fall into four levels, and each strategy has a proven effect on delay reduction. Projects that incorporate Level 1 or Level 2 strategies will score more points. The strategies are provided in **Appendix B**.

10 points	Level 1 strategy (delay reduction up to 50%) or Level 2 strategy (delay reduction up to 20%).
6 points	Level 3 strategy (delay reduction up to 10%).
4 points	Level 4 strategy (other improvements such as safety and capacity).
Zero points	Level 5 strategy or no strategy.

Support Quality Job Development – *Economic Development only* (10 total points)
A goal of *Connected2045* is to support the growth of jobs that allow residents to save and return money to the economy. The number of full-time direct jobs will be used to determine a ratio of estimated jobs by project cost. The average income of the development industry type will be multiplied by the number of full-time direct jobs created and then divided by the project cost. Freight projects will not be scored under this criterion since job data is used to determine the freight center level.

10 points	8.1+
8 points	6.1-8
6 points	4.1-6
4 points	2.1-4
Zero points	0-2

Strengthen Intermodal Connections – *Freight only* (60 total points)
The FAST Act repealed both the Primary Freight Network and National Freight Network, and directed FHWA to establish a National Highway Freight Network (NHFN) to strategically direct federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system. This measure addresses connection and improvements to the NHFN as well as local freight planning initiatives. The first metric relates to the project's location within an industrial site area and the significance of each site. Each industrial site area will fall into one of three tiers: mega, major, or intermediate. The second metric evaluates if the project will connect to an intermodal facility. The third metric addresses the stated freight problem with an appropriate commercial vehicle countermeasure.

Industrial Site Area (30 points)
The methodology used to tier industrial site areas as mega, major, or intermediate is still under development. To receive points under this metric, the project must be located within an industrial site area.

30 points	Mega freight center
20 points	Major freight center
10 points	Intermediate freight center

Intermodal Connections (30 points)
To receive points, the project must include a commercial vehicle countermeasure that addresses the current freight problem. Common techniques related to commercial vehicle accommodations include improving shoulder width and pavement structure, intersection design, parking, acceleration or deceleration lanes, and truck and car separation.

30 points	The project connects to an intermodal freight facility, serves a major freight generator, logistic center, manufacturing and warehouse industrial facility, navigable waterway, or Port District.

Strengthen Intermodal Connections – *Economic Development only* (50 total points)
Transportation connectivity is a major contributing factor to the performance and competiveness of industries. This measure is included to account for how well the project supports the development of high quality industries within the region through improved transportation access. The first metric evaluates the relationship between the average income of the industry being supported to the average income of the all industries. The second metric evaluates the number of full-time jobs created.

Average Income of Industry Supported (30 points)
To be an eligible project type, the project must provide a direct transportation linkage to a development site. The development site may include the redevelopment of underutilized properties or industrial sites, business expansion, or planned industrial development. A direct transportation linkage is defined as an eligible publicly-owned and maintained transportation facility from the entrance of the development site to a public road.

30 points	The project provides a direct transportation linkage to a business development with an average industry income that is greater than the average income of all industries.
25 points	The project provides a direct transportation linkage to a business development with an average industry income that is the same as the average income of all industries.
20 points	The project provides a direct transportation linkage to a business development with an average industry income that is ¾ of the average income of all industries.
15 points	The project provides a direct transportation linkage to a business development with an average industry income that is ½ of the average income of all industries.
10 points	The project provides a direct transportation linkage to a business development with an average industry income that is ¼ of the average income of all industries.

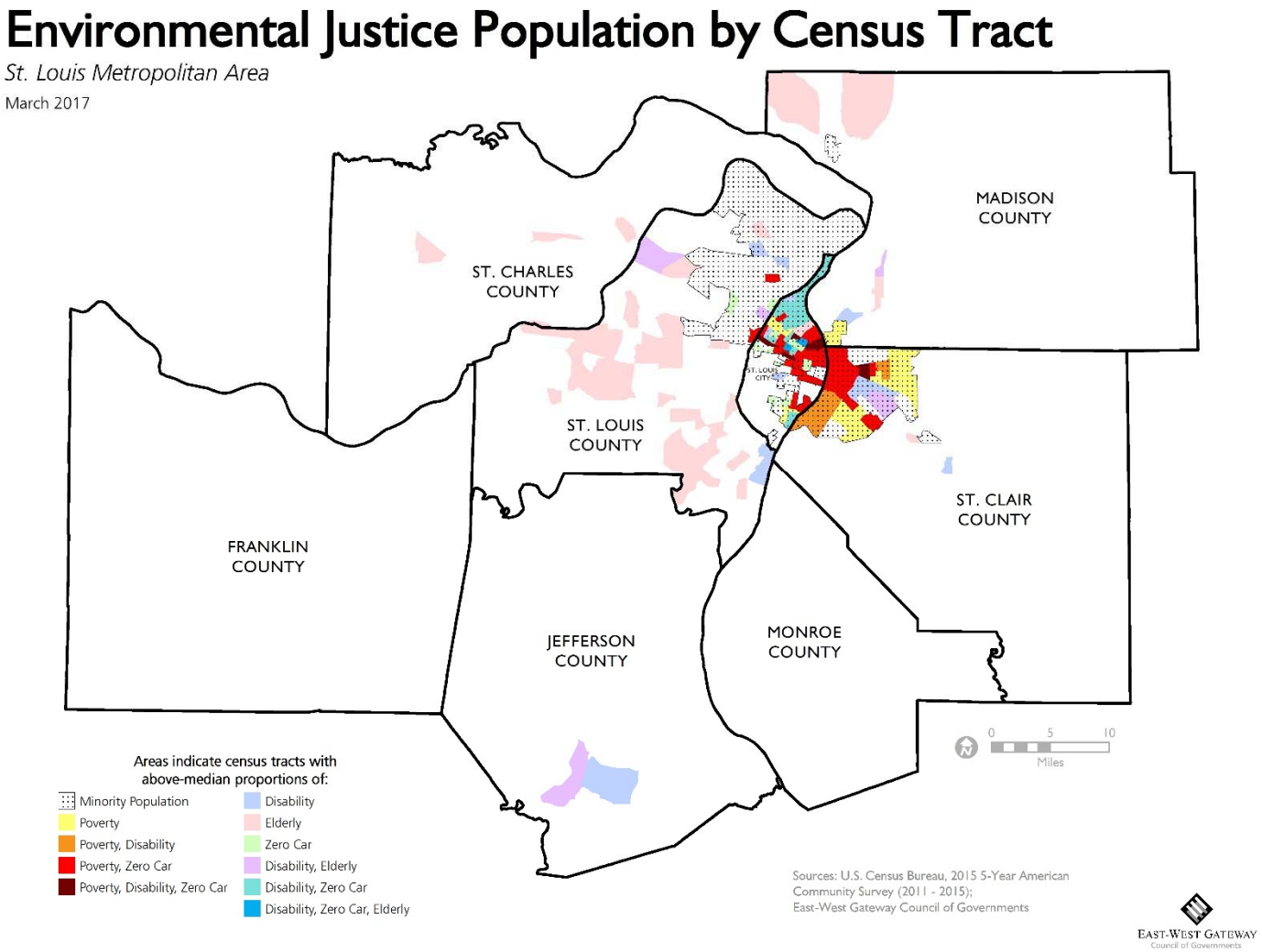
Number of Full-Time Jobs Created (20 points)
Projects that provide a direct transportation linkage to a greater number of jobs will earn more points under this metric.

20 points	The project supports the creation of 250 or more full-time direct jobs.
15 points	The project supports the creation of 100-249 full-time direct jobs.
10 points	The project supports the creation of 50-99 full-time direct jobs.
5 points	The project supports the creation of 20-49 full-time direct jobs.
Zero points	The project supports the creation of 19 or less full-time direct jobs.

Protect Air Quality & Environmental Assets (1 total point)
Transportation projects should limit the impacts on the natural environment. Green infrastructure is a design approach to managing stormwater, the urban heat island effect, public health, and air quality. Sustainable stormwater management treats and slows runoff from impervious roadways, sidewalks, and building surfaces. Examples of green infrastructure include bioswales, rain gardens, pervious strips, pervious pavement, and green bulb-outs. This metric evaluates the integration of green infrastructure into roadway projects.

1 point	Project includes green infrastructure elements.
Zero points	Project does not include green infrastructure.

Appendix A: Maps

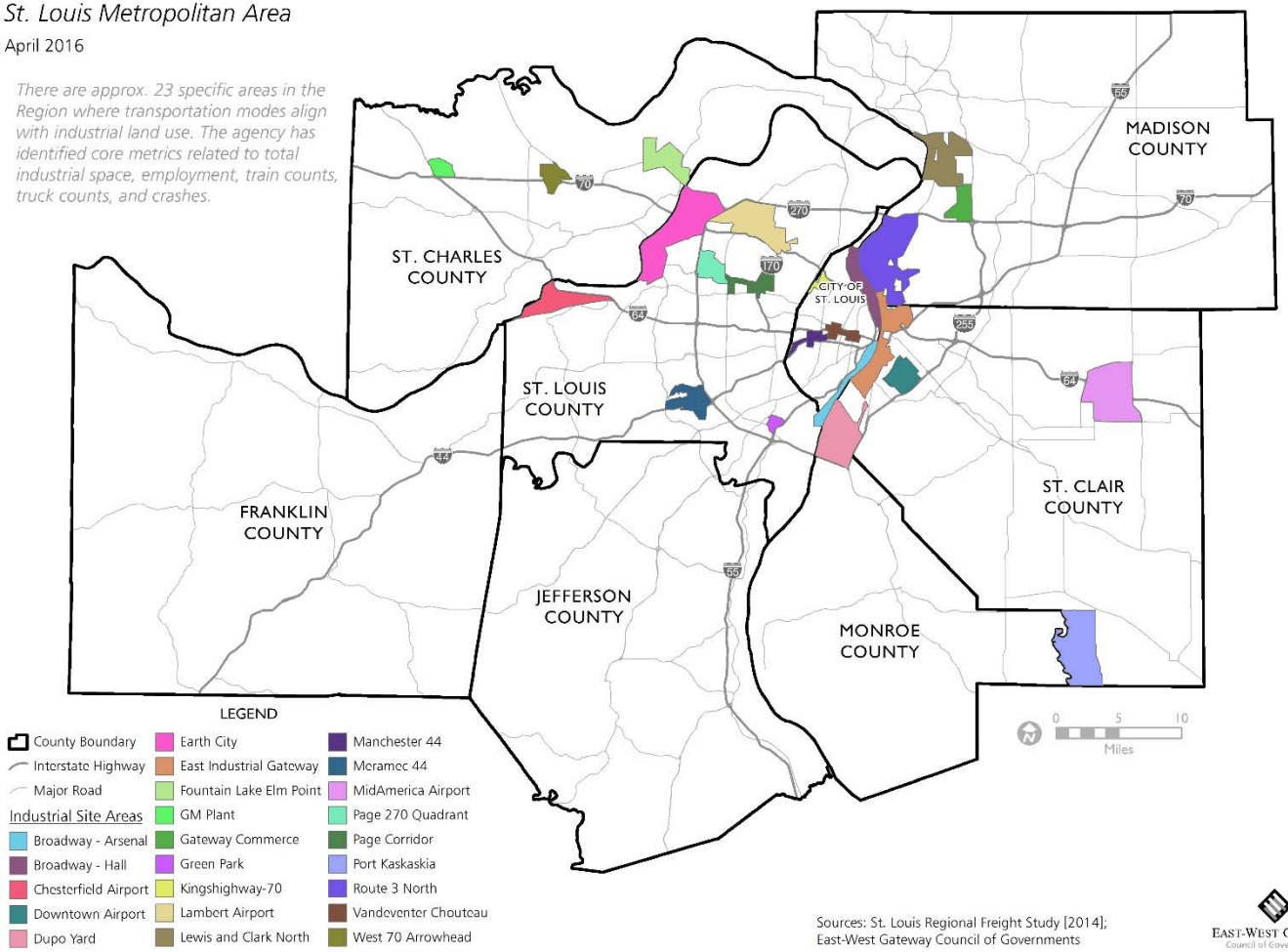


Industrial Site Areas

St. Louis Metropolitan Area

April 2016

There are approx. 23 specific areas in the Region where transportation modes align with industrial land use. The agency has identified core metrics related to total industrial space, employment, train counts, truck counts, and crashes.



Sources: St. Louis Regional Freight Study [2014]; East-West Gateway Council of Governments

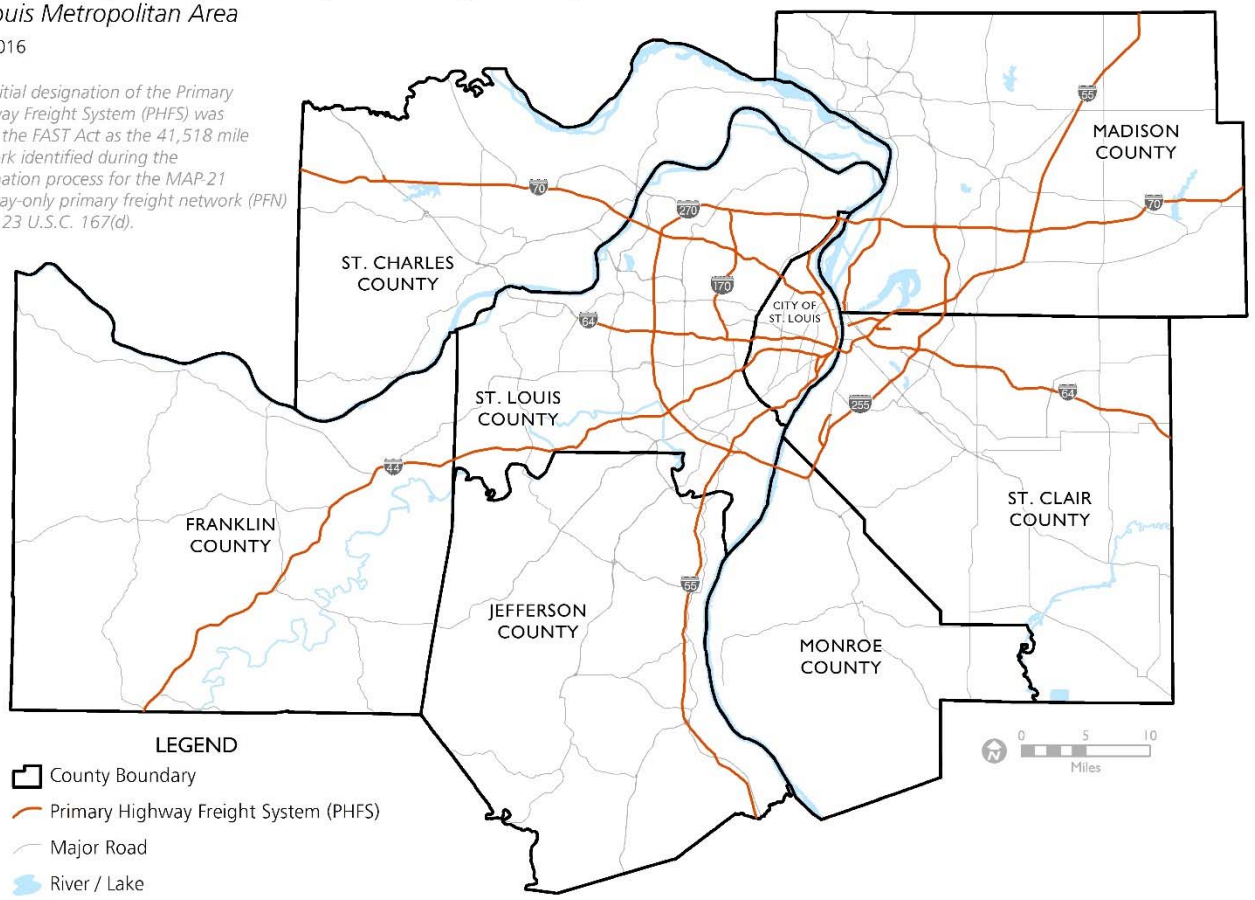
EAST-WEST GATEWAY
Council of Governments

Primary Highway Freight System

St. Louis Metropolitan Area

April 2016

The initial designation of the Primary Highway Freight System (PHFS) was set by the FAST Act as the 41,518 mile network identified during the designation process for the MAP-21 highway-only primary freight network (PFN) under 23 U.S.C. 167(d).



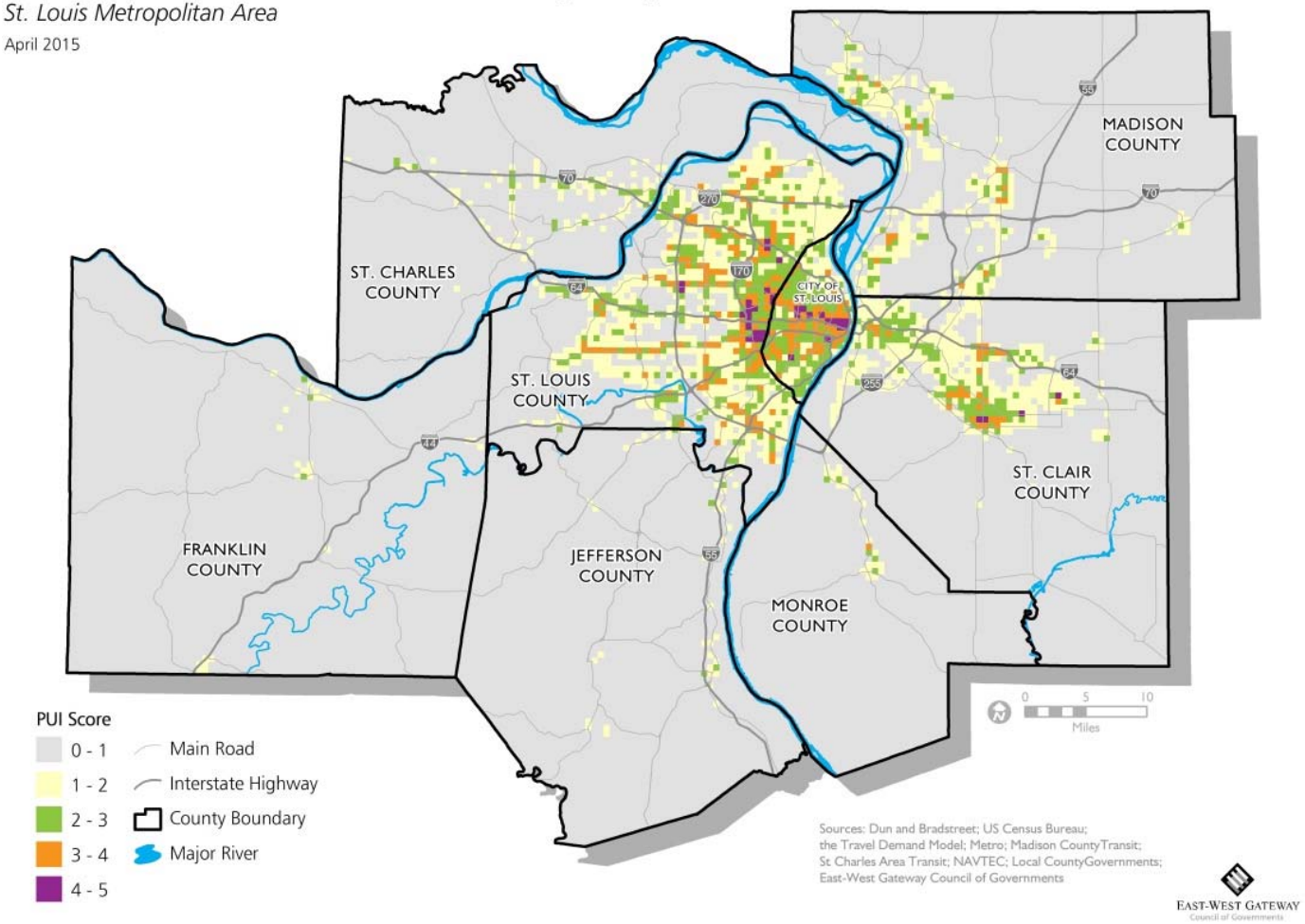
Sources: US Federal Highway Administration; East-West Gateway Council of Governments

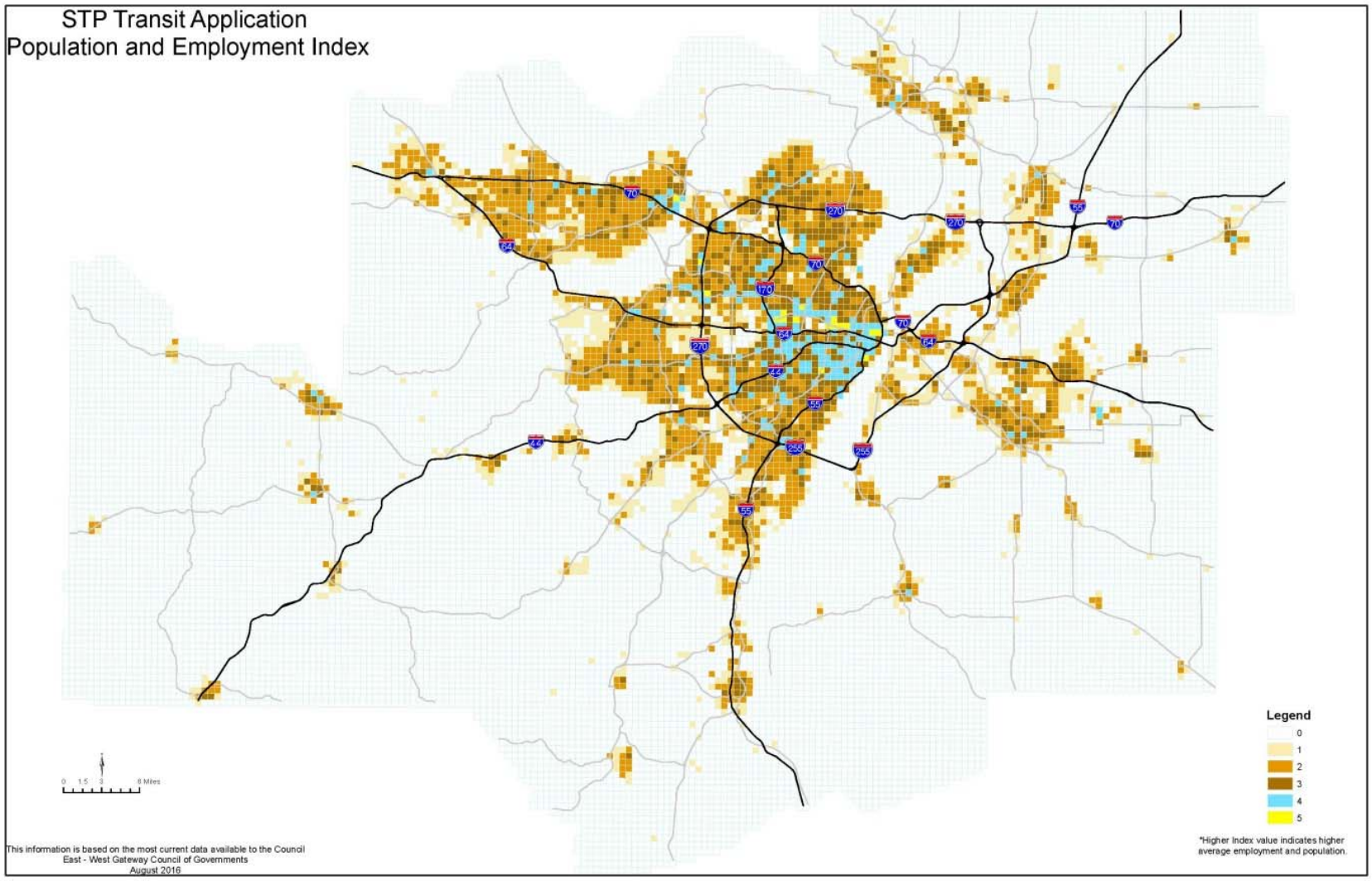
EAST-WEST GATEWAY
Council of Governments

Project Utilization Index (PUI)

St. Louis Metropolitan Area

April 2015




STP Transit Application
Population and Employment Index
Legend
0
1
2
3
4
5
*Higher Index value indicates higher average employment and population.
This information is based on the most current data available to the Council
East - West Gateway Council of Governments
August 2016

Appendix B: Congestion Strategies

Level 1 Strategies: Delay Reduction of Up to 50%						
Category	**Strategy**	**Treatment**	**Application to Sources of Congestion**	**Key Quantitative Benefit**	**Overall Cost Range[a]**	**Effectiveness–Cost Rank**
Information collection and dissemination	Pre-trip information	National Traffic and Road Closure Information	Weather, work zones	Reduces delays (early and late arrivals) by 50%	Low–medium	1-B
Incident and special event management	Pre-event assistance	Service patrols	Traffic incidents	Can reduce incident response by 19% to 77% and incident clearance time by 8 min	High	1-E
	Post-event assistance	On-scene incident management (incident responder relationship, high-visibility garments, clear buffer zones, incident screens)	Traffic Incidents	Traffic incident management programs have reported reductions in incident duration from 15% to 65%	Low	1-A
		Work zone management	Work zones	Reduces work zone–related delays by 50% to 55%	Variable (depends on addition of infrastructure)	1-D
Infrastructure improvements and demand optimization	Signal timing, ITS	TMC	Traffic-control devices, special events, weather, work zones, traffic incidents	Reduces delay by 10% to 50%	High	1-E
		Traffic adaptive signal control, advanced signal systems	Traffic-control devices	Adaptive signal control systems have been shown to reduce peak period travel times by 6% to 53%	Medium–high	1-C
	Congestion pricing	Electronic toll collection (ETC)	Physical bottlenecks	Electronic toll collection (ETC) reduces delay by 50% for manual-cash customers and by 55% for automatic-coin-machine customers, and increases speed by 57% in the express lanes	High	1-E

Source: Evaluating Alternative Operations Strategies to Improve Travel Time Reliability SHRP2

Level 2 Strategies: Delay Reduction of Up to 20%						
Category	**Strategy**	**Treatment**	**Application to Sources of Congestion**	**Key Quantitative Benefit**	**Overall Cost Range[a]**	**Effectiveness–Cost Rank**
Information collection and dissemination	Surveillance and detection	Remote verification (CCTV)	Traffic-control devices, special events, weather, traffic incidents	5% reduction in travel times in nonrecurring congestion; overall 18% reduction in travel times	Medium	2-C
	Real-time information	Pretrip information by 511, websites, subscription alerts, radio	Traffic-control devices, special events, weather, work zones, traffic incidents	Potential reduction in travel time from 5% to 20%	Variable	2-E
		Road weather information systems	Weather	Reduces delays by up to 12%	Low–medium	2-B
	Roadside messages	Travel time message signs for travelers (DMS, VMS)	All	Improves trip-time reliability, with delay reductions ranging from 1% to 22%	High	2-F
Infrastructure improvements and demand optimization	Geometric design treatments	Bottleneck removal (weaving, alignment)	Physical bottlenecks	Reduces travel time by 5% to 15%.	Medium–high	2-D
	Signal timing, ITS	Signal retiming, optimization	Traffic-control devices	Reduction in travel time and delay of 5% to 20% when traffic-signal retiming was used	Low	2-A
		Advanced transportation automation systems, signal priority, and AVL	Traffic-control devices	Reduces transit delays by 12% to 21%	Low–medium	2-B
	Traffic demand metering	Ramp metering, ramp closure	All	An increase of mainline peak-period flows from 2% to 14% because of on-ramp metering, according to a study of ramp meters in North America	Low–medium	2-B
	Congestion pricing	Cordon pricing (areawide)	Physical bottle-necks, fluctuation in normal traffic, special events	A decrease in inner city traffic by about 20% from congestion pricing in London	Low–medium	2-B
	Lane treatments	Managed lanes: HOV, HOT, and TOT lanes	Physical bottle-necks, fluctuation in normal traffic, traffic incidents	Reduces travel times up to 16%	Medium–high	2-D

Source: Evaluating Alternative Operations Strategies to Improve Travel Time Reliability SHRP2

Level 3 Strategies: Delay Reduction of Up to 10%						
Category	**Strategy**	**Treatment**	**Application to Sources of Congestion**	**Key Quantitative Benefit**	**Overall Cost Range[a]**	**Effectiveness–Cost Rank**
Information collection and dissemination	Pretrip information	Planned special events management	Special events	Reduces delay caused by special events	Low–medium	3-B
	Real-time information	Freight shipper congestion information, commercial vehicle operations	Traffic-control devices, special events, weather, work zones, traffic incidents	Reduces freight travel time by up to 10% and screening time by up to 50%	Low	3-A
Vehicle technologies	Driver-assistance products	Electronic stability control; obstacle detection systems; lane-departure warning systems; road-departure warning systems	Traffic incidents	Reduces accidents involving vehicles by up to 50%; reduces travel times by 4% to 10%	Low	3-A
Infrastructure improvements and demand optimization	Signal timing, ITS	Traffic-signal pre- emption at grade crossings	Traffic-control devices	Reduces delays by up to 8% at grade crossings, according to simulation models	Medium	3-C

Source: Evaluating Alternative Operations Strategies to Improve Travel Time Reliability SHRP2

Level 4 Strategies: Other Improvements						
Category	**Strategy**	**Treatment**	**Application to Sources of Congestion**	**Key Quantitative Benefit**	**Overall Cost Range[a]**	**Effectiveness–Cost Rank**
Information collection and dissemination	Surveillance and detection	Driver qualification	Traffic incidents	Reduces non-recurring congestion by reducing accidents	Low	4-A
		Automated enforcement	Traffic incidents, bottlenecks	Reduces travel time and improves safety	Variable (high if done by agencies, low if by contractors)	4-D
	Probe vehicles and point detection	GPS, video detection, microwave radar, Bluetooth MAC Readers	Traffic-control devices	No direct benefit to reducing congestion	Low	4-A
Infrastructure improvements and demand optimization	Geometric design treatments	Geometric improvements (interchange, ramp, intersections, narrow lanes, temporary shoulder use)	Physical bottlenecks, traffic incidents	An increase in overall capacity by 7% to 22% from geometric improvements	Medium	4-C
	Variable speed limits	Variable speed limits	Physical bottlenecks, special events	Increases through- put by 3% to 5%	Low–medium	4-B

Source: Evaluating Alternative Operations Strategies to Improve Travel Time Reliability SHRP2

EAST-WEST GATEWAY
Council of Governments

Creating Solutions Across Jurisdictional Boundaries

To: Missouri Transportation Planning Committee

From: Council Staff

Date: July 27, 2017

Subject: FY 2018-2021 TIP – Missouri Local Program – Transportation Alternatives Program

Project Solicitation

East-West Gateway Council of Governments (EWG) announced a call for project applications for federal funding through the Transportation Alternatives Program (TAP) program on April 4, 2017. A Project Development Workshop took place on April 20, 2017. This workshop provided additional information on the project application process and requirements to complete an application. A Project Review Workshop on May 17 and May 24 gave project sponsors an opportunity to present their projects to a panel representing MoDOT, EWG, Metro, and Trailnet. The panel offered feedback to project sponsors on their proposed applications. The project solicitation process concluded on June 19, 2017 when project applications were due.

Submitted Projects

Missouri sponsors submitted 33 project applications, requesting approximately $18.0 million in federal funds for funding consideration through the TAP. **Table A** shows the breakdown of submitted projects by county.

Table A
FY 2018-2021 TIP – Missouri Local Program – TAP
Submitted Projects – By County

County	# of Projects	Total $	Federal $
Franklin	4	$1,814,688	$1,343,258
Jefferson	2	$1,010,079	$688,574
St. Charles	8	$4,992,136	$3,916,121
St. Louis	16	$12,971,474	$8,996,928
St. Louis City	2	$2,067,325	$1,653,860
Multi-County	1	$1,856,000	$1,436,800
Total	**33**	**$24,711,702**	**$18,035,541**

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Available Funding
Original revenue projections for the TAP estimated that approximately $8.5 million would be available for programming. Due to cost savings from TAP projects programmed in prior rounds, Council staff has estimated that approximately $9.1 million is available to program through FY 2020.

Evaluation of Submitted Projects
Projects submitted for funding through the TAP are evaluated using the criteria based on the principles in the long range transportation plan, *Connected2045,* which was adopted by the EWG Board of Directors in 2015. Scoring criteria were included in the TAP project development workbook. A team of four EWG staff evaluated and scored each of the projects. The team then met to discuss each project and their scores and to make adjustments where appropriate. The final score for each project is the average of the four scores of each member of the evaluation team for that project. Projects were ranked by the final score, and recommendations were made for inclusion in the FY 2018-2021 Transportation Improvement Program (TIP) based on the amount of funds available.

The application for the St. Louis Bike Share program is not recommended for funding due to the lack of funding for operations of the system after it is constructed. The cost to operate the system was estimated to be approximately $720,000 a year, but no source for that funding has been identified. The sponsor indicated they would not implement the project until three years of operation funding ($2,160,000) was committed. They may reapply during a future application cycle if it is able to identify funding for the operations of the bike share system.

Attachment A shows the project cost effectiveness rankings for the TAP projects and EWG staff's recommendations for which projects should receive funding. **Table B** shows the breakdown of recommended projects by county.

Table B
FY 2018-2021 TIP – Missouri Local Program – TAP
Recommended Projects – By County

County	# of Projects	Total $	Federal $
Franklin	1	$750,203	$580,162
Jefferson	1	$576,673	$391,552
St. Charles	3	$2,669,233	$2,103,386
St. Louis	9	$8,052,480	$5,102,833
St. Louis City	1	$1,150,000	$920,000
Multi-County	0	$0	$0
Total	**15**	**$13,198,589**	**$9,097,933**

Project Recommendations
Staff recommends approval of the projects identified in **Attachment B** by the TPC. The recommended projects will be submitted for public comment. The public comment period will be from August 3 to September 5. Following the comment period the recommended projects will be presented to the Board for final approval and amendment into the Transportation Improvement Program on September 27, 2017.

Attachment A: Missouri Local Program: Transportation Alternatives Program (TAP)

Projects Recommended for Funding

ID No.	County	Sponsor	Title	Description	Score	Federal Cost	Total Project Cost	Cumulative Federal Funds
6875-18	St. Louis City	St. Louis	Louisiana Avenue Calm Streets	Gravois Ave to Meramec St Traffic Calming - Shared Ln Marking - Bumpouts	78.75	$920,000	$1,150,000	$920,000
6866-18	St. Louis	Chesterfield	Riparian Trail	August Hill Dr to Old Chesterfield Rd Shared Use Path (10')	75.75	$998,175	$1,535,655	$1,918,175
6873-18	St. Charles	St. Charles	Lincoln Elementary SRTS	Near Lincoln E.S. - Along Perry St, 7th St Sidewalk (5'-6')	69.50	$720,000	$900,000	$2,638,175
6868-19	St. Louis	Edmundson	Traverse Lane and Heath Drive Sidewalk	Traverse: Heath Dr to Edmundson Rd; Heath: Traverse to School - Sidewalk (6') - Lighting	68.00	$297,795	$430,746	$2,935,970
6872-18	St. Louis	Richmond Heights	McKnight Road Sidewalk	Clayton Rd to Godwin Ln Sidewalk (6') - One Side	67.00	$718,880	$898,600	$3,654,850
6870-20	St. Louis	Maryland Heights	Dorsett Rd Shared Use Path	I-270 to 1200' W/O Mckelvey Rd Shared Use Path (10')	66.13	$975,000	$1,955,000	$4,629,850
6871-18	St. Louis	Northwoods	Nelson Drive Sidewalk	Lillian Ave to Pasadena Ave Sidewalk (5') - One Side - Sharrows	66.00	$517,922	$647,403	$5,147,772
6869-19	Jefferson	Festus	Fifth Street Sidewalk	Westwind Dr to Cromwell Rd Sidewalk (5') - Lighting	65.25	$391,552	$576,673	$5,539,324
6874-19	St. Charles	St. Charles County	Pitman Hill Road Shared Use Path	Chadwick Ln to 270' S/O Sammelman Rd Shared Use Path (10')	63.38	$559,700	$739,625	$6,099,024
6879-18	Franklin	Washington	Busch Creek Greenway	Jefferson St to Riverfront Trail Shared Lane Path (10') - Shared Ln Markings	62.88	$580,162	$750,203	$6,679,186
6880-18	St. Louis	Wildwood	Manchester Road Shared Use Path	MO 109 to Pond Rd Shared Use Path (10') - Xing at MO 109	62.75	$575,000	$1,150,000	$7,254,186
6867-18	St. Louis	Creve Coeur	New Ballas Road Sidewalk, Phase 2A	Ladue Rd to 500' N/O Emerald Green Dr (Desmet HS) Sidewalk (5')	60.75	$254,400	$353,000	$7,508,586
6876-18	St. Louis	St. Louis County	Action Plan For Walking and Biking	Evaluate Bike and Ped Facilities on St. Louis County Owned Facilities and Recommend Facilities	60.00	$500,000	$750,000	$8,008,586
6878-18	St. Louis	University City	Ackert Walkway	300' N/O Delmar to Vernon Ave Reconstruction of Shared Use Path (10') - Lighting	59.50	$265,661	$332,076	$8,274,247
6877-18	St. Charles	St. Peters	Centennial Greenway, Phase 4	Along McClay Rd - Hackman Rd to McClay Village Dr Shared Use Path (11')	57.25	$823,686	$1,029,608	$9,097,933

Projects Not Recommended Due to Funding Constraints

ID No.	County	Sponsor	Title	Description	Score	Federal Cost	Total Project Cost	Cumulative Federal Funds
8426-18	St. Louis	University City	Bicycle Facilities Improvements, Phase 4	Along Various Streets In University City Installation of Shared Lane Markings and Signage	56.88	$112,882	$141,103	$9,210,815
8411-18	St. Louis	Ladue	South Outer 40 Trail	Along S Outer 40 from Clayton Rd and Rolling Rock Ln Shared Use Path (10') - Xing at S Outer 40	54.25	$1,011,172	$1,263,965	$10,955,847
8404-18	St. Louis	Chesterfield	Schoettler Rd Sidewalk	Greenleaf Valley Dr to Windsor Valley Ct Sidewalk (5')	54.00	$622,400	$778,000	$11,578,247
8400-19	St. Charles	Augusta	Augusta Sidewalk Improvements	High: 675' W/O Jackson to Jackson; Jackson: High to N/O Locust Locust: Jackson to Hackmann; Hack: Locust to 1000' E/O Loc - Sidewalks (5')	53.75	$265,139	$388,408	$11,843,386
8422-18	St. Louis	St. Louis County	Olive Blvd Bike/Ped Bridge (39 N Greenway)	Old Olive Street Rd - Xing at Monsanto Dr	53.50	$1,600,000	$2,000,000	$13,443,386
8402-18	St. Louis City	Bi-State Development / Metro	Metrolink Alignment Vegetation Management	Debaliviere to Union - Improve Sight Distance Eliminatation of Invasive Plant Species - Establish Native Plants	51.50	$733,860	$917,325	$9,944,675
8415-18	Franklin	Pacific	Viaduct-West Osage Sidewalk	Viaduct: Thornton to Osage; Osage: Viaduct to Western Osage: I-44 EB Off Ramp to Noonan Plaza - Sidewalk (5')	50.00	$285,488	$356,860	$13,728,874
8409-19	Jefferson	Herculaneum	Reservoir St Sidewalk	Joachim Ave to Broadway Ave Sidewalk (6') - One Side - Lighting	47.00	$297,022	$433,406	$14,025,896
8419-19	Franklin	St. Clair	Walton and Jean Street Sidewalk	Walton - Springfield Rd to Gravois Ave: Jean - Bardot to S. Main St - Sidewalks (5')	44.50	$279,358	$402,625	$14,305,254
8405-18	St. Louis	Clayton	Brentwood Blvd Corridor Bike/Ped Study	Shaw Park to Brentwood Park Plan to Identify and Evaluate Rts Along Corridor	43.75	$80,000	$100,000	$14,385,254
8424-19	Franklin	Sullivan	Northside Trail, Phase 3	North Line Cripple Creek Estates to Tessa Park Estates Shared Use Path (14')	41.00	$198,250	$305,000	$14,583,504
8432-18	St. Charles	Dardenne Prairie	Feise Road Sidewalk	Stonewall Creek Dr to 0.2 Miles East Sidewalk (5') North Side	40.00	$91,760	$114,700	$14,675,264
8410-18	St. Louis	Kirkwood	ADA Transition Plan	Develop ADA Transition Plan	32.75	$68,500	$137,000	$14,743,764
8427-18	St. Louis	Valley Park	Meramec Station Road Sidewalk	Crescent Ave to Fernridge Ave Sidewalk (5') on One Side - Shared Ln Marking	29.00	$399,141	$498,926	$15,142,905
8414-18	St. Charles	O'Fallon	Mexico Road Bike and Pedestrian Improvement	Knaust Rd to Barrington Dr Shared Use Path (8'/6' Near Lights) - Replace Existing	28.75	$618,200	$772,750	$15,761,105
8431-18	St. Charles	Dardenne Prairie	Henning Road Trail Reconstruction	McCluer Rd to Weldon Spring Rd Shared Use Path (8')	25.50	$646,660	$808,325	$16,407,765
8430-18	St. Charles	Dardenne Prairie	MO N Sidewalk	Winghaven Blvd to Pierside Dr Sidewalk (5') One Side	25.25	$190,976	$238,720	$16,598,741

Not Recommended Due to Lack of Operational Funds

ID No.	County	Sponsor	Title	Description	Score	Federal Cost	Total Project Cost	Cumulative Federal Funds
8401-19	Multi-County-M	Bi-State Development / Metro	St. Louis Bike Share Program	Short Term Bike Rental System - Approx. 60 Locations in Downtown / Midtown / CWE / Forest Park / Wash U Area (Requires $2,160,000 in operating funds which have not yet been secured)	-	$1,436,800	$1,856,000	$18,035,541

Attachment A: Missouri Local Program: Transportation Alternatives Program (TAP)

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6872-18	St. Louis	Richmond Heights	McKnight Road Sidewalk	Clayton Rd to Godwin Ln Sidewalk (6') - One Side	67.00	$718,880	$898,600	$3,654,850
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8411-18	St. Louis	Ladue	South Outer 40 Trail	Along S Outer 40 from Clayton Rd and Rolling Rock Ln Shared Use Path (10') - Xing at S Outer 40	54.25	$1,011,172	$1,263,965	$10,955,847
8404-18	St. Louis	Chesterfield	Schoettler Rd Sidewalk	Greenleaf Valley Dr to Windsor Valley Ct Sidewalk (5')	54.00	$622,400	$778,000	$11,578,247
8400-19	St. Charles	Augusta	Augusta Sidewalk Improvements	High: 675' W/O Jackson to Jackson; Jackson: High to N/O Locust Locust: Jackson to Hackmann; Hack: Locust to 1000' E/O Loc - Sidewalks (5')	53.75	$265,139	$388,408	$11,843,386
8422-18	St. Louis	St. Louis County	Olive Blvd Bike/Ped Bridge (39 N Greenway)	Old Olive Street Rd - Xing at Monsanto Dr	53.50	$1,600,000	$2,000,000	$13,443,386
8402-18	St. Louis City	Bi-State Development / Metro	Metrolink Alignment Vegetation Management	Debaliviere to Union - Improve Sight Distance Eliminatation of Invasive Plant Species - Establish Native Plants	51.50	$733,860	$917,325	$9,944,675
8415-18	Franklin	Pacific	Viaduct-West Osage Sidewalk	Viaduct: Thornton to Osage; Osage: Viaduct to Western Osage: I-44 EB Off Ramp to Noonan Plaza - Sidewalk (5')	50.00	$285,488	$356,860	$13,728,874
8409-19	Jefferson	Herculaneum	Reservoir St Sidewalk	Joachim Ave to Broadway Ave Sidewalk (6') - One Side - Lighting	47.00	$297,022	$433,406	$14,025,896
8419-19	Franklin	St. Clair	Walton and Jean Street Sidewalk	Walton - Springfield Rd to Gravois Ave: Jean - Bardot to S. Main St - Sidewalks (5')	44.50	$279,358	$402,625	$14,305,254
8405-18	St. Louis	Clayton	Brentwood Blvd Corridor Bike/Ped Study	Shaw Park to Brentwood Park Plan to Identify and Evaluate Rts Along Corridor	43.75	$80,000	$100,000	$14,385,254
8424-19	Franklin	Sullivan	Northside Trail, Phase 3	North Line Cripple Creek Estates to Tessa Park Estates Shared Use Path (14')	41.00	$198,250	$305,000	$14,583,504
8432-18	St. Charles	Dardenne Prairie	Feise Road Sidewalk	Stonewall Creek Dr to 0.2 Miles East Sidewalk (5') North Side	40.00	$91,760	$114,700	$14,675,264
8410-18	St. Louis	Kirkwood	ADA Transition Plan	Develop ADA Transition Plan	32.75	$68,500	$137,000	$14,743,764
8427-18	St. Louis	Valley Park	Meramec Station Road Sidewalk	Crescent Ave to Fernridge Ave Sidewalk (5') on One Side - Shared Ln Marking	29.00	$399,141	$498,926	$15,142,905
8414-18	St. Charles	O'Fallon	Mexico Road Bike and Pedestrian Improvement	Knaust Rd to Barrington Dr Shared Use Path (8'/6' Near Lights) - Replace Existing	28.75	$618,200	$772,750	$15,761,105
8431-18	St. Charles	Dardenne Prairie	Henning Road Trail Reconstruction	McCluer Rd to Weldon Spring Rd Shared Use Path (8')	25.50	$646,660	$808,325	$16,407,765
8430-18	St. Charles	Dardenne Prairie	MO N Sidewalk	Winghaven Blvd to Pierside Dr Sidewalk (5') One Side	25.25	$190,976	$238,720	$16,598,741

Not Recommended Due to Lack of Operational Funds

ID No.	County	Sponsor	Title	Description	Score	Federal Cost	Total Project Cost	Cumulative Federal Funds
8401-19	Multi-County-M	Bi-State Development / Metro	St. Louis Bike Share Program	Short Term Bike Rental System - Approx. 60 Locations in Downtown / Midtown / CWE / Forest Park / Wash U Area	-	$1,436,800	$1,856,000	$18,035,541

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ATTACHMENT B - PROJECTS RECOMMENDED FOR FUNDING

COUNTY: FRANKLIN

ID	ORGANIZATION NAME/PROJECT TITLE/DESC	FUNDING CAT	IMPROVEMENTS			2018-2021 TOTAL	2018	2019	2020	2021
6879-18	WASHINGTON	TAP-S	Pedestrian Facility		PE	$35,000	$35,000	$0	$0	$0
	BUSCH CREEK GREENWAY		Bicycle Facilities		ROW	$0	$0	$0	$0	$0
	JEFFERSON ST TO RIVERFRONT TRAIL				IMPL	$715,203	$0	$715,203	$0	$0
	SHARED LANE PATH (10') - SHARED LN MARKINGS									
	LENGTH (mi): 2.9		Federal:	$580,162	TOTAL	$750,203	$35,000	$715,203	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$170,041	ESTIMATED TOTAL PROJECT COST:	$750,203				

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ATTACHMENT B - PROJECTS RECOMMENDED FOR FUNDING

COUNTY: JEFFERSON

ID	ORGANIZATION NAME/PROJECT TITLE/DESC	FUNDING CAT	IMPROVEMENTS			2018-2021 TOTAL	2018	2019	2020	2021
6869-19	FESTUS	TAP-S	Sidewalks		PE	$58,733	$58,733	$0	$0	$0
	FIFTH STREET SIDEWALK		Lighting		ROW	$0	$0	$0	$0	$0
	WESTWIND DR TO CROMWELL RD				IMPL	$517,940	$0	$517,940	$0	$0
	SIDEWALK (5') - LIGHTING									
	LENGTH (mi): 0.4		Federal:	$391,552	TOTAL	$576,673	$58,733	$517,940	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$185,121	ESTIMATED TOTAL PROJECT COST: $576,673					

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ATTACHMENT B - PROJECTS RECOMMENDED FOR FUNDING

COUNTY: ST. CHARLES

ID	ORGANIZATION NAME/PROJECT TITLE/DESC	FUNDING CAT	IMPROVEMENTS			2018-2021 TOTAL	2018	2019	2020	2021
6873-18	ST. CHARLES	TAP-S	Sidewalks		PE	$70,000	$70,000	$0	$0	$0
	LINCOLN ELEMENTARY SRTS				ROW	$40,000	$0	$40,000	$0	$0
	NEAR LINCOLN E.S. - ALONG PERRY ST, 7TH ST				IMPL	$790,000	$0	$0	$790,000	$0
	SIDEWALK (5'-6')									
	LENGTH (mi): 0.85		Federal:	$720,000	TOTAL	$900,000	$70,000	$40,000	$790,000	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$180,000	ESTIMATED TOTAL PROJECT COST:	$900,000				
6874-19	ST. CHARLES COUNTY	TAP-S	Bicycle Facilities		PE	$40,000	$40,000	$0	$0	$0
	PITMAN HILL ROAD SHARED USE PATH		Pedestrian Facility		ROW	$0	$0	$0	$0	$0
	CHADWICK LN TO 270' S/O SAMMELMAN RD				IMPL	$699,625	$0	$699,625	$0	$0
	SHARED USE PATH (10')									
	LENGTH (mi): 0.51		Federal:	$559,700	TOTAL	$739,625	$40,000	$699,625	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$179,925	ESTIMATED TOTAL PROJECT COST:	$739,625				
6877-18	ST. PETERS	TAP-S	Bicycle Facilities		PE	$121,300	$121,300	$0	$0	$0
	CENTENNIAL GREENWAY, PHASE 4		Pedestrian Facility		ROW	$91,350	$0	$91,350	$0	$0
	ALONG MCCLAY RD- HACKMAN RD TO MCCLAY VILLAGE DR				IMPL	$816,958	$0	$0	$816,958	$0
	SHARED USE PATH (11')									
	LENGTH (mi): 0.91		Federal:	$823,686	TOTAL	$1,029,608	$121,300	$91,350	$816,958	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$205,922	ESTIMATED TOTAL PROJECT COST:	$1,029,608				

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ATTACHMENT B - PROJECTS RECOMMENDED FOR FUNDING

COUNTY: ST. LOUIS

ID	ORGANIZATION NAME/PROJECT TITLE/DESC	FUNDING CAT	IMPROVEMENTS			2018-2021 TOTAL	2018	2019	2020	2021
6866-18	CHESTERFIELD	TAP-S	Bicycle Facilities		PE	$145,000	$145,000	$0	$0	$0
	RIPARIAN TRAIL		Pedestrian Facility		ROW	$0	$0	$0	$0	$0
	AUGUST HILL DR TO OLD CHESTERFIELD RD				IMPL	$1,390,655	$0	$0	$1,390,655	$0
	SHARED USE PATH (10')									
	LENGTH (mi): 0.9		Federal:	$998,175	TOTAL	$1,535,655	$145,000	$0	$1,390,655	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$537,480	ESTIMATED TOTAL PROJECT COST: $1,535,655					
6867-18	CREVE COEUR	TAP-S	Sidewalks		PE	$35,000	$35,000	$0	$0	$0
	NEW BALLAS ROAD SIDEWALK, PHASE 2A				ROW	$53,000	$53,000	$0	$0	$0
	LADUE RD TO 500' N/O EMERALD GREEN DR (DESMET HS)				IMPL	$265,000	$0	$265,000	$0	$0
	SIDEWALK (5')									
	LENGTH (mi): 0.3		Federal:	$254,400	TOTAL	$353,000	$88,000	$265,000	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$98,600	ESTIMATED TOTAL PROJECT COST: $353,000					
6868-19	EDMUNDSON	TAP-S	Sidewalks		PE	$33,502	$33,502	$0	$0	$0
	TRAVERSE LANE AND HEATH DRIVE SIDEWALK		Lighting		ROW	$0	$0	$0	$0	$0
	TRAVERSE: HEATH DR TO EDMUNDSON RD; HEATH: TRAVERSE				IMPL	$397,244	$0	$397,244	$0	$0
	TO SCHOOL - SIDEWALK (6') - LIGHTING									
	LENGTH (mi): 0.3		Federal:	$297,795	TOTAL	$430,746	$33,502	$397,244	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$132,951	ESTIMATED TOTAL PROJECT COST: $430,746					
6870-20	MARYLAND HEIGHTS	TAP-S	Bicycle Facilities		PE	$150,000	$150,000	$0	$0	$0
	DORSETT RD SHARED USE PATH		Pedestrian Facility		ROW	$225,000	$0	$225,000	$0	$0
	I-270 TO 1200' W/O MCKELVEY RD				IMPL	$1,580,000	$0	$0	$1,580,000	$0
	SHARED USE PATH (10')									
	LENGTH (mi): 0.47		Federal:	$975,000	TOTAL	$1,955,000	$150,000	$225,000	$1,580,000	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$980,000	ESTIMATED TOTAL PROJECT COST: $1,955,000					
6871-18	NORTHWOODS	TAP-S	Sidewalks		PE	$62,828	$62,828	$0	$0	$0
	NELSON DRIVE SIDEWALK				ROW	$0	$0	$0	$0	$0
	LILLIAN AVE TO PASADENA AVE				IMPL	$584,575	$0	$584,575	$0	$0
	SIDEWALK (5') - ONE SIDE - SHARROWS									
	LENGTH (mi): 0.53		Federal:	$517,922	TOTAL	$647,403	$62,828	$584,575	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$129,481	ESTIMATED TOTAL PROJECT COST: $647,403					

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ATTACHMENT B - PROJECTS RECOMMENDED FOR FUNDING

COUNTY: ST. LOUIS

ID	ORGANIZATION NAME/PROJECT TITLE/DESC	FUNDING CAT	IMPROVEMENTS			2018-2021 TOTAL	2018	2019	2020	2021
6872-18	RICHMOND HEIGHTS	TAP-S	Sidewalks		PE	$100,600	$100,600	$0	$0	$0
	MCKNIGHT ROAD SIDEWALK				ROW	$35,000	$0	$35,000	$0	$0
	CLAYTON RD TO GODWIN LN				IMPL	$763,000	$0	$0	$763,000	$0
	SIDEWALK (6') - ONE SIDE									
	LENGTH (mi): 0.7		Federal:	$718,880	TOTAL	$898,600	$100,600	$35,000	$763,000	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$179,720	ESTIMATED TOTAL PROJECT COST: $898,600					
6876-18	ST. LOUIS COUNTY	TAP-S	Bicycle Facilities		PE	$750,000	$750,000	$0	$0	$0
	ACTION PLAN FOR WALKING AND BIKING		Pedestrian Facility		ROW	$0	$0	$0	$0	$0
	EVALUATE BIKE AND PED FACILITIES ON ST. LOUIS COUNTY				IMPL	$0	$0	$0	$0	$0
	OWNED FACILITIES AND RECOMMEND FACILITIES									
	LENGTH (mi): 0		Federal:	$500,000	TOTAL	$750,000	$750,000	$0	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$250,000	ESTIMATED TOTAL PROJECT COST: $750,000					
6878-18	UNIVERSITY CITY	TAP-S	Bicycle Facilities		PE	$25,000	$25,000	$0	$0	$0
	ACKERT WALKWAY		Lighting		ROW	$0	$0	$0	$0	$0
	300' N/O DELMAR TO VERNON AVE		Pedestrian Facility		IMPL	$307,076	$0	$307,076	$0	$0
	RECONSTRUCTION OF SHARED USE PATH (10') - LIGHTING									
	LENGTH (mi): 0.3		Federal:	$265,661	TOTAL	$332,076	$25,000	$307,076	$0	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$66,415	ESTIMATED TOTAL PROJECT COST: $332,076					
6880-18	WILDWOOD	TAP-S	Bicycle Facilities		PE	$122,236	$122,236	$0	$0	$0
	MANCHESTER ROAD SHARED USE PATH		Pedestrian Facility		ROW	$11,200	$0	$11,200	$0	$0
	MO 109 TO POND RD				IMPL	$1,016,564	$0	$0	$1,016,564	$0
	SHARED USE PATH (10') - XING AT MO 109									
	LENGTH (mi): 0.69		Federal:	$575,000	TOTAL	$1,150,000	$122,236	$11,200	$1,016,564	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$575,000	ESTIMATED TOTAL PROJECT COST: $1,150,000					

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ATTACHMENT B - PROJECTS RECOMMENDED FOR FUNDING

COUNTY: ST. LOUIS CITY

ID	ORGANIZATION NAME/PROJECT TITLE/DESC	FUNDING CAT	IMPROVEMENTS			2018-2021 TOTAL	2018	2019	2020	2021
6875-18	ST. LOUIS	TAP-S	Pedestrian Facility		PE	$150,000	$150,000	$0	$0	$0
	LOUISIANA AVENUE CALM STREETS		Bicycle Facilities		ROW	$0	$0	$0	$0	$0
	GRAVOIS AVE TO MERAMEC ST				IMPL	$1,000,000	$0	$0	$1,000,000	$0
	TRAFFIC CALMING - SHARED LN MARKING - BUMPOUTS									
	LENGTH (mi): 1.1		Federal:	$920,000	TOTAL	$1,150,000	$150,000	$0	$1,000,000	$0
	AIR QUALITY STAT: Exempt - 93.126		State:	$0						
	PROJ PURPOSE: Sustainable Development		Local:	$230,000	ESTIMATED TOTAL PROJECT COST: $1,150,000					