# Surface Transportation Block Grant (STBG) Program Evaluation Manual



## **2023 Amendment**

**Prepared by:** 



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## Surface Transportation Block Grant (STBG) Program Evaluation Manual

Amended August 22, 2023 Amended February 26, 2019 Amended November 29, 2016 Amended February 2012 Amended January 2009 Amended September, 1998 Amended April, 1996 Amended May, 1993 (April 1985)

This report was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration; the Illinois Department of Transportation; and the Iowa Department of Transportation. The contents of this report reflect the views of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Illinois Department of Transportation, the Iowa Department of Transportation, or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.



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<sup>2</sup> Chair, Transportation Policy Committee

<sup>3</sup> Vice-Chair, Transportation Policy Committee

<sup>4</sup> The mayors of the cities of Buffalo, Eldridge, LeClaire, Princeton, and Riverdale in the Iowa portion and the cities and villages of Andalusia, Carbon Cliff, Coal Valley, Colona, Hampton, Milan, Oak Grove, Port Byron, Rapids City, and Silvis in the Illinois portion select a representative from their jurisdictions (Iowa and Illinois separately) to represent them on the Policy and Technical Committees.

<sup>&</sup>lt;sup>1</sup> The Policy Committee voting is restricted to one vote for each voting member. Voting members may authorize an alternate, with the stipulation that alternates of elected officials also be an elected representative of the appropriate jurisdiction.

## Transportation Technical Committee<sup>1</sup>

Brent Morlok, City Engineer<sup>2</sup> City of Bettendorf, Iowa

Jeff Reiter, Economic Development Director City of Bettendorf, Iowa

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Greg Thorpe, Director of Building & Zoning Rock Island County, Illinois

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Dan Nyugen Federal Transit Administration

Rob Bates Illinois Department of Transportation

Sam Shea Iowa Department of Transportation

<sup>1</sup> The Technical Committee system allows one vote per agency with delegated representative voting permitted in the absence of an agency's listed member. The City of Davenport has three votes. Transit managers for Bettendorf Transit and Davenport CitiBus are invited.

<sup>2</sup> Chair, Transportation Technical Committee.

<sup>3</sup> Vice-Chair, Transportation Technical Committee.

- <sup>4</sup> The mayors of the cities of Buffalo, Eldridge, LeClaire, Princeton, and Riverdale in the Iowa portion and the cities and villages of Andalusia, Carbon Cliff, Coal Valley, Colona, Hampton, Milan, Oak Grove, Port Byron, Rapids City, and Silvis in the Illinois portion select a representative from their jurisdictions (Iowa and Illinois separately) to represent them on the Policy and Technical Committees.
- NOTE: Additional membership may include advisory representatives from the Illinois and Iowa Departments of Transportation, planning and research engineers from the Illinois and Iowa Federal Highway Administration, and a community planning representative from the Federal Transit Administration Region VII.

## Introduction

Each year the Quad Cities area is designated to receive a portion of the Surface Transportation Block Grant (STBG) Program funds, formerly the Surface Transportation Program (STP) funds. STBG funds are available to the States of Illinois and Iowa for roadway improvements or non-roadway projects. STBG funds may be used on either National Highway System (NHS) or Federal-Aid roads, although bridge, safety, carpooling, and bicycle/ pedestrian projects may be on any public road.

**Programming Responsibility**. Programming of these funds is the responsibility of the Metropolitan Planning Organization (MPO), which is the Bi-State Regional Commission. The Commission has, in turn, delegated the authority for programming these STBG funds to the MPO Transportation Policy Committee. The Policy Committee has directed the Transportation Technical Committee to develop and implement a process through which candidate projects for STBG funding are submitted as needed, then evaluated and ranked in relation to each other and to assign them to three levels of priority. The resulting advisory prioritization assists the Policy Committee in determining which projects should be selected to receive STBG funding. However, the Policy Committee reserves the right to select projects to receive STBG funding as deemed necessary for the transportation system at any time, as long as the Public Participation Process is followed for public notification. There may be circumstances where the STBG evaluation may not apply.

**Evaluation Criteria**. The Technical Committee periodically reviews the procedures for the technical evaluation and advisory ranking. This document shall define the methodology that reflects the nomenclature and essence of the current transportation act. Changes in light of new legislation were suggested by the Transportation Technical Committee in their review of this document in 1993, 1996, 1998, 2009, 2012, 2016 and revised again in 2018. One revision was to describe the Iowa Federal-Aid Swap Policy. Other revisions address federal performance measures for safety and condition, or provide clarifications of the process. Each candidate project is evaluated for the categories of "Level of Service," "Safety," and "Physical Condition." These categories support the national transportation performance management system to reduce fatalities, maintain a system in a state of good repair, and aid congestion reduction and healthy communities.

The ability of the existing roadway to safely accommodate the existing traffic is considered for each project under the "Level of Service" category. Also considered under this category is the ability of the proposed project to accommodate or reduce traffic congestion. Projects that include the construction of sidewalks, transit lanes, or any other facility that would aid pedestrian, bicycle, or transit usage will receive points for offering transportation alternatives. Additionally, the evaluation process includes a comparison of the expected traffic ten years from the analysis year for all proposed projects.

Analysis for a project under the "Safety" category is based on the number of accidents that occurred within a five-year period. Also considered are the severity and the frequency of the accidents to traffic exposure.

The physical condition of the street/highway is analyzed as the third category in the STBG Evaluation. This category is evaluated by noting the type of surface (gravel, sealcoat, asphalt, concrete), the condition of the facility and the amount of traffic that currently uses the facility and is expected to use the facility in the future.

Candidate projects may also receive additional consideration for demonstrating the expected ability to improve air quality, facilitate freight movement, aid connectivity, or improve travel for employment centers. Special consideration for air quality will be given to those projects that maintain the existing level or reduce the amount of air pollutants as defined in the federal air quality standards. Projects proposing to improve business and truck routes by removing barriers or improving turning movements, among other physical improvements, may receive special consideration. Connecting roadway gaps to improve cross community traffic flow will be considered as well. Projects that demonstrate traffic improvements benefits to major employment centers may also be considered.

**Ranking Process.** After a point value is assigned to each item considered in the evaluation, the points for each project are totaled. The final advisory ranking is then determined by graphing the projects by their individual total number of points to identify natural breaks or clusters of projects. As these breaks occur, projects can be classified in three priority groups, "A," "B," and "C." "A" candidate projects are characterized as the highest priority, while "C" projects are the lowest priority. These groupings of projects (A, B, C) will be the final advisory ranking given to the Policy Committee with an individual ranked score. The Technical Committee may make recommendations based on funding availability in relation to the ranking. The Policy Committee will consider the priority of the project and recommendation of the Technical Committee but may choose a lower priority project based on funding availability, economic development, regional significance or impact, eminent safety concerns, or other non-quantitative factors.

**Programming History**. Since 1972, numerous local area projects have received funding under federal surface transportation programs. A summary of these projects are annually updated in the Appendix of the Transportation Improvement Program (TIP). In addition, a few projects have been programmed to receive funds by the Policy Committee, based on anticipated allocations of STBG funds. This information is annually updated in the Transportation Improvement Program (TIP) and should be referenced for the current status.

Table 1.1 illustrates a twelve-year history and the existing targets for STBG funds at the current time. This funding is subject to changes in the current federal transportation act as it stands, Fixing America's Surface Transportation (FAST) Act, or appropriations of funds. Table 1.2 and 1.3 show the STBG balances known to exist at the time of this manual update. These tables are annually updated within the TIP.

## Table 1.1 Surface Transportation Block Grant (STBG) Program Funds for the Quad Cities MPO Area FFY 2017-2027

	Illinois	Iowa
FFY 2017	\$1,485,722	\$3,784,141
FFY 2018	\$1,534,068	\$3,786,442
FFY 2019	\$1,565,924	\$4,124,427
FFY 2020	\$1,565,924	\$4,226,793
FFY 2021	\$1,734,238	\$4,099,100
FFY 2022	\$1,695,388	\$3,994,962
FFY 2023	\$2,253,463	\$4,744,204
FFY 2024*	\$2,362,079	\$4,680,020
FFY 2025*	\$2,362,079	\$4,771,000
FFY 2026*	\$2,362,079	\$4,860,000
FFY 2027*	\$2,362,079	\$4,953,000
Total	\$21,283,043	\$48,024,089

\* Includes funds based on targeted funding levels.

Source: Illinois DOT and Iowa DOT targets provided to Bi-State Regional Commission, 2023

## Table 1.2 Illinois Quad Cities Federal Aid –Surface Transportation Block Grant (STBG) Program

MPO ILQC Federal Aid – Surface Transportation Block Grant (STBG) Program					
	2023	2024	2025	2026	2027
STBG Target		\$2,362,079	\$2,054,806	\$2,054,806	\$2,054,806
Total Available for Programming		\$1,687,532	\$1,870,754	\$2,716,976	\$4,771,782
Total STBG Programmed		\$1,871,584	\$1,208,584	\$0	\$0
STBG Balance	-\$674,547	-\$184,052	\$662,170	\$2,716,976	\$4,771,782

## Table 1.3Iowa Quad Cities Federal Aid –Surface Transportation Block Grant (STBG)Program

MPO IAQC Federal Aid - Surface Transportation Block Grant (STBG) Program					
	2023	2024	2025	2026	2027
STBG Target		\$4,680,020	\$4,771,000	\$4,860,000	\$4,953,000
Total Available for Programming		\$16,384,511	\$5,234,091	\$5,271,124	\$10,224,124
Total STBG Programmed		\$15,921,420	\$4,822,967	\$0	\$77,000
STBG Balance	\$11,704,491	\$463,091	\$411,124	\$5,271,124	\$10,147,124

## Participation by the Transportation Technical and Policy Committees

Candidate projects for the STBG Surface Transportation Block Grant (STBG) Program evaluation are submitted as needed by jurisdictions through the Transportation Technical Committee. Bi-State Regional Commission facilitates the call for projects using the most recent estimate on STBG funds available, and following the Public Participation Plan notification process. The notice is sent to the MPO Technical Committee and eligible small communities within the metropolitan planning area boundary.

A submittal form, as shown in Figure 2.1, must be completed in every submission period for each project that is to be evaluated. A detailed project description with project termini, location map, total cost in estimated year of expenditure dollars, anticipated STBG share request, and other supporting documentation to aid the evaluation process should be part of the application. Data provided on the submittal form will be used by the Bi-State staff in conducting the STBG evaluation. Following the completion of the project's evaluation, the STBG Candidate Project Response Form, Figures 2.2, is returned to the respective jurisdiction for review. Bi-State staff should be notified of any revisions to the project's evaluation desired by the jurisdiction. Calculation errors may be corrected by Bi-State staff; however, any significant revisions to the submittal form that are requested will to be presented to the Technical Committee for their consideration. Changes to the submittal form must occur prior to scoring.

The Transportation Technical Committee will review the special consideration categories at the first Technical Committee meeting following the completion of the initial evaluation of projects. At this time the ranking of projects shall not be released to the Committee. A list of those projects that are eligible for special consideration "bonus" points shall be presented to the Technical Committee members prior to the special consideration review. Any other evaluation revisions that are presented to the Technical Committee will also be considered at this meeting.

Final ranking of the STBG Candidate Projects will be conducted following the Committee's review of special considerations. After awarding "bonus" points, the final ranking will be presented to the Technical Committee without identification of the project. Scores will be shown graphically to identify clusters of projects from highest to lowest score. Clusters of projects scores will be logically grouped by the Technical Committee into priorities "A," "B," and "C" – "A" being the highest priority projects. The projects in their priority groupings will be forwarded to the Transportation Policy Committee for consideration (see Figure 2.3). The Policy Committee shall consider the results of the STBG Evaluation and the amount of anticipated funds in determining what project(s) to program. The Policy Committee, but may choose a lower priority project(s) based on funding availability, economic development, regional significance or impact, eminent safety concerns, or other non-quantitative factors.

## Figure 2.1 Surface Transportation Block Grant Program Candidate Project Submittal Form

- 1. Jurisdiction/State:
- 2. Project Location and Termini (Street, Avenue, City, or County etc.):
- 3. Project Description (type of improvement, number of lanes, area type, direction of traffic, parking situation, transit route access, **existing land use**, etc.) Attach detailed description of the project scope.:
- 4. Total Project Cost (In Year of Expenditure Dollars): \_\_\_\_\_\_, plus estimated construction year: \_\_\_\_\_; and rate of inflation used: \_\_\_\_\_\_
  - Attach detailed project costs including the amount requested in STBG funds (not greater than 80% of the total cost)
  - Illinois DOT Local Roads Policy recommends using local funds for engineering (PE or CE), and Federal-Flex policy would require advanced approval if there is interest in using engineering as match.

## Information for Categories 1-3 in Technical Evaluation

5. Existing Traffic: \_\_\_\_\_ Truck/Business Route: \_\_\_\_ (State or Local: Document with ordinance) –Fill in only if there is local factored counts taken.

The most current lowa and Illinois DOT counts from their respective GIS Shapefiles will be used unless more recent data is submitted. Please attach information source. Traffic counts submitted by a jurisdiction must be factored and specified for all conditions under which counts were taken. Source/Year: \_\_\_\_\_

6. Congestion Reduction (Please check (X) appropriate description. Explain in Project Description as an attachment):

#### **Physical Improvements**

- \_\_\_\_\_ Intersection improvements only
- \_\_\_\_\_ Addition of bidirectional lane for turning movement improvement
- \_\_\_\_\_ No additional right-of-way, resurfacing or improvements within ROW
- \_\_\_\_\_ Segment with additional lanes (List number \_\_\_\_\_)

## Figure 2.1 (continued)

	Transportation Alternation	ernatives					
	Paved shou	Paved shoulder proposed on rural area type					
	Sidewalk(s)	_ Sidewalk(s) or crosswalks added where none exist (one side or both,)					
		Transit turnouts, special lane or physical improvement aiding transit (must be located along existing or proposed transit route)					
	Bicycle lane	e(s) or multi	ipurpose trail added				
7.	Project Length (seg	ment projec	ct only)	_ miles			
8.	Physical Condition ( for the existing conc Gravel		eck (X) one of the followi Low type	ng and justify the sele asphalt, good base	ection		
	 Sealcoat, p	oor hasa		nt, asphalt, Portland			
	Facility Condition:			•	Poor		
	Very Poo	or Source/I	Date:		_		
	Facility Condition	<u>Points</u>	lowa PCI Values*	Illinois CRS Values	<u>5</u>		
	Excellent/Good	1.0	71-100	6.1-9.0			
	Fair	2.0	41-70	4.6-6.0			
	Poor/Very Poor	3.0	<u>&lt;</u> 40	1.0-4.5			

\*Thresholds noted for Non-NHS system.

## **Information for Special Considerations**

Jurisdictions requesting special considerations **must** attach supporting documentation for the request.

- 1. \_\_\_\_ Air Quality
- 2. \_\_\_\_ Designated Truck or Business Route
- 3. <u>Connectivity</u>
- 4. \_\_\_\_ Employment Center
- Reminder: Applicants are required to attach supporting details on traffic, location map, and specific termini, and supporting documentation to justify local traffic counts or other locally provided data, and Special Considerations requests. Jurisdictions must be able to implement project within five years from the fiscal year the project is awarded. While not required, a resolution of support by the submitting jurisdiction or demonstration that the project is within a capital plan or program will help document commitment for the project.

## Figure 2.2 Surface Transportation Program Candidate Project Response Form

	Surface Transportation Progr	am Candidate Project Response Form			
luciadiation -					
Jurisdiction = Project Location =					
rijet toaton -					
Project Description =					
Project Eligibility Check List					
The project is part of the adopted Quad Cities MPO Long Range Transportation Plan.					
The project is on the National Highway System or Federal-Aid roads. (FFC higher than rural minor collector and local road) The project is a permanent improvement.					
	roject is NOT noise barriers, lighting projects, drain	are projects feaces landscaning etc			
	roject is structurally capable of handling all anticipa				
	roject provides for level of service "D" or higher on				
	a pedestrian/bicycle project, it meets one or more				
	be along a federal-aid route				
	provide a means of crossing a controlled access fee	deral-aid route			
(c)	shift non-motorized traffic that would have norma	lly used a federal-aid highway route to an adjacent route			
	roject can be implemented within five years from t				
	otal project cost is no less than \$125,000 or no less t				
✓ The to	otal project is no less than 50% federal share and no	o more than 80% federal share.			
Cuintin -	Traffic Condition	Curch Data during Three year paried			
Existing Year =	Traffic Condition 2016	Crash Data during Three year period Segment length in Miles =	#N/A		
Existing Volume =	#N/A	Fatal =	#N/A		
Number of Lanes =	#N/A	Injury =	#N/A		
Facility Type =	#N/A	Property Damage =	#N/A		
Area Type =	#N/A	Total Crash Number =	#N/A		
Capacity =	#N/A	Accident Severity =	#N/A		
V/C Ratio =	#N/A	Accident Rate =	#N/A		
Future	Traffic Condition	Physical Condition			
Future Volume =	#N/A	Surface Type = Pavem	ent, asphalt, Portland		
Data Source =	2045 Long range plan	Surface Type Value =	1		
Future Year =	2045	Facility Condition =	#N/A		
10-Year Volume =	#N/A	Facility Condition Value =	#N/A		
		Average Volume =	#N/A		
6	ation Doduction	Physical Condition Value = *	#N/A		
Physical Improvements =	stion Reduction	Special Approval			
		Special traffic count approved =			
Transportation Alternatives = #N/A		Special consideration for air quality approved =			
		Special consideration for truck/business route =			
U With	existing side walks	Special consideration for connectivity =			
<b>—</b>		Special consideration for supporting employment center =			
With existing transit route Other Special consideration =					
U With		<b>6</b>			
	existing bike lane, path or multipurpose trail	Comments			
U With	existing bike lane, path or multipurpose trail ew sidewalks and/or cross-walks	Comments			
<ul> <li>With</li> <li>Add n</li> </ul>		Comments			
<ul> <li>With</li> <li>Add n</li> <li>Add n</li> </ul>	ew sidewalks and/or cross-walks	Comments			

## Figure 2.3 Surface Transportation Program Procedural Checklist

Send Submittal Form to Technical Committee, small communities with the MPO boundary and notify the Regional Transportation Advisory Group of the call for projects as part of the programming process. Post notice on the BSRC website. (Bi-State)
Prepare Submittal Forms and Attach Supporting Documentation and Detailed Costs and Cost Share Request (Applicant)
Return Submittal Form to Bi-State Staff. (Applicant)
Review Submittal Forms and Request Clarification from Applicants, as needed. (Bi-State)
Send Response Form to Respective Applicant/Jurisdiction for Candidate Project(s). (Bi-State)
Reply With Notification of Accuracy of Response Form to Bi-State Staff (Objective/Calculation Errors Only). (Applicant)
Review and Consider Approval of Special Considerations by Technical Committee. (Bi-State with Technical Committee)
Present Candidate Project Scoring and Graphic Presentation for Technical Committee Review and Cluster Analysis. (Bi-State)
Recommend Prioritization "A", "B," or "C" of Candidate Projects to Policy Committee. (Technical Committee)
Share Project Scoring of Projects. (Bi-State)

## **Project Requirements**

Candidate projects that are submitted for the STBG technical evaluation must meet the following requirements:

- The project must be part of the adopted Quad Cities MPO Long Range Transportation Plan.
- The project must be on the National Highway System or Federal-Aid road(s) [in the Metropolitan Planning Areas this is Federal Functional Classification higher than rural minor collector and local road] except bridge or tunnel projects, projects described in 23 U.S.C 133 (b)(4)-(11); transportation alternatives or as approved by the Secretary of Transportation. Eligible activities include those outlined in:
  - The project must be a permanent improvement. Temporary construction is defined as work that must be essentially replaced in the immediate future. Staged construction is considered permanent rather than temporary so long as future stages build on rather than replace previous work.
  - Noise barriers, lighting projects, drainage projects, fences, landscaping, etc., are ineligible for funding unless included as part of a larger roadway construction, safety, capacity, or bikeway/walkway construction project that would qualify under the above criteria.
  - The project must be structurally capable of handling all anticipated vehicles of legal load limit.
  - Street/highway projects must provide for level of service "D" or higher on traffic forecasts developed in accordance with the adopted long-range transportation plan.
  - Pedestrian/bicycle projects must meet one or more of the following location criteria: (a) be along a federal-aid route, (b) provide a means of crossing a controlled access federal-aid route, or (c) shift non-motorized traffic that would have normally used a federal-aid highway route to an adjacent route in the corridor. Ordinary sidewalk construction is not eligible as a separate project.
  - The jurisdiction submitting a project for STBG funding consideration must be able to implement (defined as obligated or let) the project within five years from the fiscal year the project is awarded funds with notation of the date it is approved by the Policy Committee for programming. (For example, a project being awarded funds from Fiscal Year 2025, would be expected to be authorized or let no later than 2030.)
  - The total project cost of an eligible project must be no less than \$125,000 or no less than \$100,000 in federal share.
  - The total project must be no less than 50% federal share and no more than 80% federal share.

- Funds may be used on any phase of project development and implementation. Preliminary and construction engineering are federally eligible expenses and allowable costs for the MPO STBG selected projects. Federal-Flex Policy allows preliminary engineering and design to match construction dollars as part of the total project cost but must be preapproved in advance of any work being conducted. [Note: *ILDOT District* 2 Policy recommends using local funds for PE and CE, as using STBG funding for PE or CE reduces the amount available for construction, PE can lead to scope and use of federal funds for engineering may require lengthy review. Using PE or CE toward the 20% or more matching funds counts only in the following circumstances: use city/county staff for the engineering, and get advanced approval. For more information on this issue in Illinois, refer to Circular Letter 2015-7 Federal Flexible Match Program.]
- Transit projects are eligible for STBG funds, and will be evaluated as standalone projects not subject to the noted technical ranking process. Letter of request with project description, details costs, matching request and special considerations should be provided.
- Eligible jurisdictions include local governments, regional transit authority, or transit agency as defined by the MPO.
- Special requests not fitting the guidance above should submit a letter of request and outline circumstance that describes the nature of the request and details the funding need. (Example may be if a project was underfunded in a prior round and additional funds are requested because of a special circumstance. Ordinarily, projects funded are expected to complete a project based on an awarded amount.)

## Awarded Projects

Awarded projects will be required to proceed through the federal-aid project development process, beginning with contact with the respective Department of Transportation District and will be subject to certain federal and/or state laws and regulations related to public involvement, real estate, and environmental regulations and conforming to ADA, DBE, wage, competitive bidding, and permitting requirements, to name a few.

An award letter will be used to notify the local jurisdiction of the award amounts and expectations in working with the Departments of Transportation to proceed through the federal-aid project development process. The letter will be sent to the Chief Elected Official or Board Representative and to the appropriate Technical Committee representative, and a copy will be provided to the respective DOT District Planner and/or other appropriate DOT staff. Awarded projects are expected to be included in the Quad Cities MPO Transportation Improvement Program (TIP), and may require an amendment through the MPO Transportation Policy Committee depending on the timing of the programming process.

The availability of funds is subject to the type of budget authority authorized for federal STBG funds. The time period established in legislation determines when funds must be obligated. It will be important for projects to be timely in carrying out the project development process to prevent lapsing of these funds if the State Department of Transportation cannot carry balances for the STBG program as a whole.

As noted above, awarded projects are expected to be authorized or let within 5 years of the designated fiscal year for which the project is programmed. The start date of the five years begins with the fiscal year of funds awarded to the project with a notation of the date of approval by the Policy Committee. For example, a project being awarded funds from Fiscal Year 2025 would be expected to be authorized or let no later than 2030. Awarded projects not proceeding to implementation within the 5 years must request an extension by the Policy Committee or return the funds to the MPO pool for reprogramming.

Changes in scope of work from the original awarded application will be required to be approved by the Policy Committee.

## Surface Transportation Program Technical Evaluation

In the STBG Technical Evaluation, candidate projects are evaluated using three categories composed of seven criteria. These categories include "Level of Service," "Safety," and "Physical Condition" (see Table 5.1). This section shall identify the criteria that comprise these categories. A fourth category, "Special Considerations," does not apply to all candidate projects and is addressed in Section 9.

## A. Level of Service

The category of Level of Service (LOS) was established to determine the ability of a highway segment or intersection to accommodate traffic. Criteria that are examined to determine such an ability include the existing volume/capacity ratio, a ten-year projected traffic volume, and the project's ability to reduce traffic congestion.

## 1. Existing Volume/Capacity Ratio

To indicate how well a facility is currently functioning without improvements, the existing volume is divided by the existing capacity. The capacity is the amount of traffic that a given roadway can safely handle. Both volume and capacity are expressed as Average Daily Traffic (ADT) Volumes (24-hour volumes).

Volumes that are used in the existing volume/capacity ratio shall be obtained from the most current lowa or Illinois Departments of Transportation Average Daily Traffic GIS Shapefiles. More recent volumes may be submitted by a jurisdiction for usage in the evaluation; however, approval by the Technical Committee of all new volumes must be obtained prior to the final ranking of the projects. Traffic counts submitted by the jurisdiction must be factored using formulas from the respective Departments of Transportation. All conditions under which the count was taken must be reported in written form. This step must be repeated each year for all volumes not given on the Iowa and Illinois DOTs GIS Shapefiles. Along segments, a weighted average of the ADT is used.

The capacity used in this evaluation is derived from Table 5.2 and applies to all jurisdictions. Table 5.2 identifies capacity under a variety of conditions that approximate Level of Service "D." The information needed to utilize this table includes the number of lanes, the direction of traffic (two-way versus one-way, etc.), facility type, and area type. The conditions are obtained from the project submittal form as provided by the jurisdiction. Facility type will be determined by the existing functional classification, while area type will be obtained from available land use information.

For an intersection project, the capacity will be derived from the intersection legs using the number of thru-lanes, the facility type and the area type in Table 5.2. The capacity from the north-south legs will be averaged and added to the eastwest legs average capacity. Using the example of 15th Street and 3rd Avenue in Rock Island, 15th Street has two thru lanes (combination of thru and left, and thru and right turns) on both the north and south legs of the intersection, a total of four lanes. Third Avenue has one thru-lane on both the east and west legs, a total of two lanes. The facility type for 15th Street/U.S.67 is an undivided arterial while 3rd Avenue is a local road. Both have an area type of Central Business District (CBD). The capacity for 15th Street is 25,200 for each leg and for 3rd Avenue is 9,600 for each leg. In this example, the average of the north-south legs equals 25,200, while the average for 3rd Avenue is 9,600. In another location, the approach leg, thru-lane quantity may vary between the north-south direction or east-west direction. Summing the two averages will provide the intersection capacity. In the example above, the capacity is 34,800. Note, this method is being utilized for planning and ranking purposes. There are other techniques that may be used to calculate intersection capacities for engineering and design purposes.

#### 2. Ten-Year Projected Traffic Volume

The second criteria in the LOS category is the ten-year projected traffic volume on the proposed facility. The projected ADT is determined by interpolating between the existing volume and future volume from the most recently adopted long-range transportation plan, to obtain a projection representing traffic ten years from the submittal date. The formula for this interpolation follows:

$$V_{10} = VF - VE$$
  
Years\* (10) + VE

V<sub>10</sub> = 10-year volume

VF = Future volume

VE = Existing volume

\* = Number of years from submittal year to future year

Under some circumstances, the future volume derived from the most recently adopted long range transportation plan is less than the existing volume. When this occurs, a two percent (2%) annual increase of the existing volume can be used to create a future volume.

#### 3. Congestion Reduction

The ability of a project to reduce traffic congestion is considered to be an important portion of the STBG evaluation. A Congestion Management Process was developed and incorporated into the adopted long range transportation plan. Key goals include: effectively move traffic, improve public transportation, reduce travel demand, design efficient roads, accommodate other users, and facilitate good land use. This STBG criterion is evaluated through the analysis of the proposed improvement. Both transportation alternatives and the type of physical improvement will be evaluated under congestion reduction. The Congestion Reduction criteria represents up to a total of 50 points.

A jurisdiction will select one category from the list of physical improvements to a roadway. If a project improves the geometrics and/or operations at an

intersection or adds a bidirectional lane, then the project will receive a score of 20 points. A project that does not add lanes or additional right-of-way but includes improvements or reconstruction within the ROW will receive 15 points. If a project adds lanes, changing the lane configuration from a 2-lane to 4-lane roadway or more lanes, the project will receive 10 points.

## Points Physical Improvements (Select one)

- 20 Intersection improvements only where operational and/or geometric improvements are conducted
- 20 Addition of bidirectional lane for turning movement improvements
- 15 No additional lanes, resurfacing, reconstruction, or improvements within existing right-of-way
- 10 Addition of lanes (2, 4, 6, etc.)

The Quad Cities Transportation Policy Committee approved a Complete Streets Policy in October 2008 where the public right-of-way is designed for the safety and accessibility of multiple users, regardless of ability within the context of the area where improvements are being considered. If the project is assessed as a rural cross-section where the context indicates very few non-motorized users of the roadway, then the project will receive a score of 5 points if the project proposes to include paved shoulders. However, a project in a suburban or urban setting with existing transportation alternatives can receive up to 30 points, if there is an existing sidewalk, transit route, and bicycle facilities as well as the project intends to add these features to complete the multi-user nature of the project area.

## Points Transportation Alternatives

5 Rural area and limited non-motorized users, no transportation alternatives with provisions for paved shoulders

OR

- 5 Suburban or urban landscape with existing sidewalk(s) that are intended to be improved with the project request
- 5 Suburban or urban landscape with existing transit route that is intended to be enhanced with access improvements, such as improved sidewalks or shoulders
- 5 Suburban or urban landscape with existing bike lane, path, or multipurpose trail that are intended to be improved with the project request
- 5 Suburban or urban landscape add new sidewalk(s) and/or cross-walks
- 5 Suburban or urban landscape add new transit turnout or lane for existing or proposed transit route

5 Suburban or urban landscape add new bike lane, path or, multipurpose trail or widen to accommodate cyclists based on national standard for shared access

Area type with the capacity analysis will be used to determine rural vs. suburban or urban landscape. To illustrate the scoring of this criteria, an example is provided.

18 <sup>th</sup> Avenue (17 <sup>th</sup> Street to Moline City Limits)	Points
Area Type: Fringe (Non-Rural)	
Bi-Directional Lane Improvement (3-lane facility)	20
Existing Sidewalks, both sides	5
Existing Transit Route	5
Proposed Transit turnouts	5
	35 Total

The physical improvement points and transportation alternative points will be added together to create the score for congestion reduction criteria. Congestion reduction criteria would represent up to a total of 50 points.

## B. Safety

The methodology that is used in the Quad Cities Intersection Crash Study is repeated in the evaluation of the safety category. Criteria for this category include the total number of accidents, the severity of the accidents, and the accident rate.

#### 1. Total Number of Accidents

Each project is evaluated on the total number of accidents that have occurred during a three-year period along the project termini. This data will be obtained through the Iowa and Illinois Departments of Transportation by Bi-State staff for the latest five-year time period that is available. Due to the difficulty experienced in attempting to sort accidents by location, accidents that occur at intersections along a roadway segment project will be included in the total number of accidents.

#### 2. Accident Severity

Accident data, as obtained through the respective Departments of Transportation, categorizes accidents according to three classifications: property damage, personal injury, and fatal injury. These classifications are assigned weighted numerical values of 1, 3, and 12, respectively, and are totaled to obtain the accident severity. This criteria provides a means of determining the severity of accidents occurring along a project location.

## 3. Accident Rate

Accident rates are particularly significant in measuring accident experience, since they relate accident frequency to traffic exposure. Accident rates are normally expressed in terms of accidents per million vehicle miles (MVM) for roadway segments and accidents per million entering vehicles (MEV) for intersections. The use of accident rates provides a common denominator for comparison of accident experience between different locations or against a critical rate in identifying locations with unusually high accident experience.

The formula used to calculate intersection accident rates is:

$$R_{i} = \frac{(A)(1,000,000)}{(T)(V)}$$

Where:

- R = intersection accident rate expressed in accidents i per million entering vehicles (MEV);
- A = number of accidents during the five-year subject period;
- T = time period in days (T = 1,825 days); and
- V = total average daily traffic (ADT) entering the intersection based on ADT counts.

The formula for calculating the accident rate for roadway segments is:

$$R_{s} = \frac{(A)(100,000,000)}{(T)(V)(L)}$$

Where:

- R = segment accident rate expressed in accidents per 100 million vehicle miles (HMVM);
- A = number of accidents during the three-year subject period;

T = time period in days (T = 1,825 days); and

- V = total average daily traffic (ADT) based on ADT counts; and
- L = segment length in miles.

Comparing segment accident rates to intersection accident rates is difficult since the segment accident rate is based on 100 million vehicle miles, while the intersection accident rate is based on million entering vehicles. Therefore, the intersection project with the highest accident rate will receive the same score for these criteria (see Section 8) as the highest segment project. The second highest intersection rate is given the same value as the second highest segment rate, etc.

## C. Physical Condition

The physical condition of a project is determined by the current surface type, facility condition, and the current and future traffic. An explanation of the existing surface and facility conditions must be incorporated into the project description to justify the criteria selected. Facility condition will be provided based on the Pavement Condition Index (PCI) value used by the Iowa Department of Transportation and some other Illinois jurisdictions, or Condition Rating Survey (CRS) value used by the Illinois Department of Transportation. The PCI values coincide with the functional classification of the roadway. Along segments, a weighted average may be used. In lieu of these values, local communities may provide the index they use to determine facility condition and may be subject to Technical Committee concurrence during the evaluation process.

Each project is rated according to surface type and facility condition as follows:

<u>Surface Type</u>	<u>Points</u>
Gravel	6
Sealcoat, poor base	4
Low type asphalt, good base	2
Pavement, asphalt, portland	1

Facility Condition	<u>Points</u>	lowa PCI Values*	Illinois CRS Values
Excellent/Good	1.0	71-100	6.1-9.0
Fair	2.0	41-70	4.6-6.0
Poor/Very Poor	3.0	<u>&lt;</u> 40	1.0-4.5

\*Thresholds noted for Non-NHS system.

These values will be multiplied by the average of the project's current and projected average daily traffic (ADT) per lane and then divided by 1,000 to obtain more simplistic numbers. Projects are then scored and given weighted points for this category. The formulas are as follows:

$$V_{AVE} = \frac{(V_{10} + V_E) \div 1,000}{(2)}$$

 $PC = (V_{AVE}/No. of lanes)(S_T)(F_C)$ 

- V<sub>AVE</sub> = Average of the existing volume and 10-year projected volume
- $V_{10} = 10$ -year volume
- V<sub>E</sub> = Existing volume
- PC = Physical condition
- $S_T = Surface type$
- F<sub>c</sub> = Facility condition

Thus, for a deteriorated 2-lane paved road, the project would receive values of 3 and 1 for the facility condition, using a PCI value of 28, and surface type, respectively. A current ADT of 4,800 and a projected ADT of 13,800 would yield an average of 9,300 or a value of 9.3. Dividing the average ADT value of 9.3 by the 2 lanes yields a value of 4.7. The rated value for this project would thus be  $3 \times 1 \times 4.7$ , or 14.1. This score would then be assigned points using Table 8.4.

Projects with gravel surfaces are given a value of 6 for the surface type and a value of 2 for the facility condition. Since a gravel surface will vary in condition quite easily, the value of 2 is used. Non-existent projects are also given a value of 6 for surface type and a value of 1 for facility condition. The current traffic for non-existent facility will be 0. This was considered a trade-off between the value of 6 for surface type and no current traffic.

Category	Criteria
1. Level of Service	<ul> <li>Existing Volume/Capacity Ratio</li> <li>10-Year Projected Traffic Volume</li> <li>Traffic Congestion Reduction</li> </ul>
2. Safety	<ul><li>Total Number of Accidents</li><li>Accident Severity</li><li>Accident Rate</li></ul>
3. Physical Condition	<ul> <li>Surface Type, Facility Condition, Existing Volume, 10-Year Projected Volume, Number of Lanes</li> </ul>
4. Special Considerations	<ul> <li>Air Quality</li> <li>Truck/Business Route</li> <li>Connectivity</li> <li>Employment Center</li> </ul>

Table 5.1Surface Transportation Program Technical Evaluation

	AREA TYPE			
	1	2	3	4
Functional Class	CBD	Urban	Suburban	Rural
Freeway				
2 lanes	84,000	84,000	84,000	84,000
3 lanes	132,000	132,000	132,000	132,000
4 lanes	180,000	180,000	180,000	180,000
5 lanes	228,000	228,000	228,000	228,000
6 lanes	276,000	276,000	276,000	276,000
Expressway				
2 lanes	79,200	79,200	79,200	79,200
3 lanes	122,400	122,400	122,400	122,400
4 lanes	165,600	165,600	165,600	165,600
5 lanes	208,800	208,800	208,800	208,800
6 lanes	252,000	252,000	252,000	252,000
Principal Arterial				
1 lane	17,760	22,080	23,040	27,840
2 lanes	35,520	44,160	46,080	55,680
3 lanes	53,280	66,240	69,120	83,520
4 lanes	71,040	88,320	91,920	111,360
Minor Arterial				
1 lane	15,600	18,240	18,960	22,800
2 lanes	31,200	36,480	37,920	45,600
3 lanes	46,800	54,720	56,880	68,400
4 lanes	62,400	72,960	75,840	91,200
Collector				
1 lane	15,600	18,240	18,960	22,800
2 lanes	31,200	36,480	37,920	45,600
3 lanes	46,800	54,720	56,880	68,400
4 lanes	62,400	72,960	75,840	91,200
Bridge	I-280	I-74	Arsenal/Cent.	I-80
2 lanes	-	-	18,240	-
4 lanes	84,000	84,000	46,080	84,000
6 lanes	-	132,000	-	-

Table 5.2 **Capacity by Facility and Area Type** 

Note: Capacities used in TRANSCAD model (2050 LRTP) for Quad Cities Area based on links' lanes, direction and speed.

Key:

**CBD** - Central Business District Fringe - Surrounding CBD OBD - Other Business District

National Cooperative Highway Research Program (NCHRP) Report 187, Quick References: Response Urban Travel Estimation Techniques and Transferable Parameters User's Guide, and Highway Capacity Manual, Special Report 209. Table approximates LOS D.

## Non-Existent Facilities

Frequently, projects are submitted for evaluation that involve the construction of roadways that do not currently exist. These projects become difficult to evaluate through the process described previously because current traffic and accident data are not available for these projects. The absence of this data prevents the evaluation of an existing volume/capacity ratio, the ten-year project traffic volume, total number of accidents, accident severity, and the accident rate. This section shall present the means used to evaluate a non-existent facility.

## A. Level of Service

## 1. Volume/Capacity Ratio

Because an existing volume is not possible for non-existent facility, a method of obtaining a volume must be established. The future and existing volumes for a nearby comparable roadway shall be applied in ratio with the proposed project's future volume to determine the project's "existing" volume. It is recommended that the nearby roadway used be parallel to the existing project and, if possible, have equivalent termini and similar assumed characteristics. A sample calculation is outlined below for a project on Tanglefoot Lane in Bettendorf, Iowa.

The following calculations were necessary as a portion of the sample project is a non-existent roadway. Values for each category were determined by calculating information for the existing and the non-existing portions. The ratio of lengths were applied to these numbers to obtain the final value. The lengths of the existing and non-existing portions were taken as 0.43 and 0.57 miles, respectively. A total project length of 1.00 mile was used in the calculations, as given by the City. Kimberly Road from I-74 to Forest Road was used as the surrounding facility best representing the non-existent portion. For convenience, the existing and non-existing portions will be referred to as portions A and B, respectively.

Existing volume: Since current ADT for portion A is not available, Kimberly Road will be used for both portions of A and B in determining the existing volume.

Tanglefoot Lane:	1979 ADT = X 2000 ADT = 8,600	Kimberly	Road:	1979 ADT = 29,900 2000 ADT = 30,900
	<u>8,600</u> 30,900 =	<u>X</u> 29,900	X = 8,	322

use 8,300 for existing volume

This estimated volume will be used in calculating the "existing" volume/capacity ratio, the ten-year projected traffic volume, and the accident rate. Capacity of the proposed facility will be determined as the "existing" capacity for the calculation of the volume/capacity ratio.

#### 2. Ten-Year Projected Traffic Volume

The ten-year projected traffic volume for a non-existing facility shall be obtained by interpolating between the current long-range transportation plan and the "existing" volume that was determined above. (See calculations for existing roadways in previous section.)

#### 3. Congestion Reduction

Although additional lanes will be added, all non-existent facility projects will be awarded a point score of 10 in keeping with the essence of current transportation practice and its emphasis on alternatives to adding new capacity for singleoccupant vehicles.

In accord with the approved Complete Streets Policy, a non-existent roadway should design the public right-of-way for the safety and accessibility of multiple users, regardless of ability within the context of the area where improvements are being considered. If the project is assessed as a rural cross-section where the context indicates very few non-motorized users of the roadway, then the project will receive a score of 0 points. However, a project in a suburban or urban setting with potential for transportation alternatives can receive up to 15 points, if there is an ability to connect to existing sidewalks, transit routes, and bicycle facilities, and the project intends to add these features to complete the multi-user nature of the project area.

## Points Transportation Alternatives

5 Rural area and limited non-motorized users, no transportation alternatives with paved shoulders

OR

- 5 Suburban or urban landscape add new sidewalk(s)
- 5 Suburban or urban landscape add new transit turnout or lane for existing or proposed transit route
- 5 Suburban or urban landscape add new bike lane, path or multipurpose trail or widen to accommodate cyclists based on national standards for shared access

## B. Safety

To evaluate the safety category for a "non-existent" roadway, safety data is obtained for a nearby roadway. This roadway shall be the same as was used to determine the project's "existing" volume. Again, the ratio of future traffic and the total accident number shall be applied to the project's future volume to obtain a number of accidents for the proposed project. This number shall be reduced by 50%. Accident severity shall also be determined using this method. The project's accident rate will be calculated using the total number of accidents and the "existing" volume. An example of these calculations follows for the former I-74 and 53rd Street Interchange project.

## Total Number of Accidents:

I-74 (Spruce Hills Dr.)	Accidents = 34 2000 ADT = 26,700
I-74 (53rd St.)	2000 ADT = 10,300

<u>10,300</u>		Χ	
26,700	=	34	X = 13/2 = 6.5 accidents

therefore, use 7 accidents for I-74/53rd St. Interchange

Accident Severity:

I-74 (Spruce Hills Dr.)			Severity = 56
<u>10,300</u>		X	
26,700	=	56	X = 22/2 = 11

therefore, use severity = 11 for I-74/53rd St. Interchange

Accident Rate:

for I-74/53rd St. Interchange Number of accidents = 7 "existing" volume = 5,600  $\underline{7 \times 1,000,000}$ accident rate =  $(5 \times 365)(5,600) = 0.68$  MEV

## C. Physical Condition

As stated in Section 5, non-existent facilities are given a value of 6 for surface type (gravel) and a value of 1 for facility condition (good). The current volume for a non-existent facility will be given a value of zero.

Calculations of "non-existent" facility projects may be requested by a Technical Committee member to be presented to the Technical Committee for their review. All changes requiring a consideration of judgment must be requested by the Technical Committee as a whole.

# **Combination Projects**

Many projects that are submitted for the STBG evaluation are composed of multiple surface types, surface conditions, varying roadway widths, or varying number of lanes. Some projects have portions that do not currently exist while the remainder of the project does indeed exist. To address these "combination" projects, a method of calculation was developed.

Should a project consist of multiple characteristics, each segment shall be evaluated individually with the ratio of that particular segment to the entire project length. These values shall be summed to obtain a project total. Examples of calculations for a project that has varying surface types and conditions may be found below for the Marquette Street project in Davenport.

The following calculations were necessary as a portion of the sample project includes a two-lane roadway and the remainder of the project is a four-lane roadway. The two-lane portion, portion A, was estimated to be 0.5 miles in length. The four-lane portion, portion B, was estimated to be 0.3 miles in length. Values for the capacity and physical condition were determined for both portions and then combined by applying the ratio of the lengths.

Capacity -

Portion A:	lanes = 2 facility type = local area type = CBD capacity = $9,600$ length = $0.5$ miles							
Portion B:	lanes = 4 facility type = local area type = CBD capacity = 14,400 length = $0.3$ miles							
Capacity = (9,60	00 x 0.5/0.8) + (14,400 x 0.3/0.8) = 11,400							
Physical Condition –								
Portion A:	future volume = 17,300 existing volume = 8,200							

existing volume = 8,200 lanes = 2 surface type = 1 facility condition = 3 length = 0.5 miles physical condition =  $\frac{17,300 + 8,200}{(2)(2)(1,000)}$  x 1 x 3 = 19.13 Portion B: future volume = 17,300 existing volume = 8,200 lanes = 4 surface type = 1 facility condition = 2 length = 0.3 miles physical condition =  $\frac{17,300 + 8,200}{(4)(2)(1,000)}$  x 1 x 2 = 6.38

Physical Condition = (19.13 x 0.5/0.8) + (6.38 x 0.3/0.8) = 14.35

This sample project also demonstrates a roadway with portions of two and four lanes in addition to varying surface types. It should be noted that this method is not applied when evaluating a segment project with an intersection having additional lanes. A generalized number of lanes shall be used when varying lengths comprise a very small portion of the total project length.

# **Evaluation Scoring Procedure**

To complete the final ranking of the candidate projects, the criteria in each of the "Level of Service," "Safety," and "Physical Condition" categories must be transformed to scores for ease of comparison. This task is accomplished through the use of tables (see Tables 8.1 to 8.4). A table has been developed for each criteria item. These tables present raw data values in ranges and points that correspond to these ranges.

Scoring for most criteria items may be read directly from the table; however, the Accident Rate criteria for intersection projects depends on the segment projects that are submitted. As explained in Section 5, Accident Rate is measured in Million Entering Vehicles (MEV) for intersection projects and 100 Million Vehicle Miles (HMVM) for segment projects. Differing variables such as these cannot be compared directly. The Accident Rate table was developed for segment projects, thus allowing the scores of the majority of projects to be read directly from the table. Intersection projects will be scored such that the intersection having the highest accident rate will receive a score equivalent to the segment having the highest accident rate. Likewise, the second intersection project will receive a score equivalent to the segment project, etc.

Data values determined through the candidate project evaluations are transformed to scores, and the scores are summed for each project. The candidate projects are then ranked in descending order. Prior to the final ranking of the projects, special consideration is given to projects that are expected to have a beneficial effect on the areas of Air Quality or Automobile Alternatives. The Technical Committee may award additional or "bonus" points to these projects. Further discussion on Special Considerations will be presented Section 9.

After a point value is assigned to each item considered in the evaluation, the points for each project are totaled. The final advisory ranking is then determined by graphing the projects by their individual total number of points to identify natural breaks or clusters of projects. As these breaks occur, projects can be classified in three priority groups: "A," "B," and "C." "A" candidate projects are characterized as the highest priority, while "C" projects are the lowest priority. These groupings of projects (A, B, C) will be the final advisory ranking given to the Policy Committee within individual ranked score. The Policy Committee but may choose a lower priority project based on funding availability, economic development, regional significance or impact, eminent safety concerns, or other non-quantitative factors.

V/C	Points	V/C	Points
>1.953	50	0.945-1.007	33
1.890-1.952	49	0.882-0.944	32
1.827-1.889	48	0.819-0.881	31
1.764-1.826	47	0.756-0.818	30
1.701-1.763	46	0.693-0.755	29
1.638-1.700	45	0.630-0.692	28
1.575-1.637	44	0.567-0.629	27
1.512-1.574	43	0.504-0.566	26
1.449-1.511	41	0.441-0.503	25
1.386-1.448	40	0.378-0.440	24
1.323-1.385	39	0.315-0.377	23
1.260-1.322	38	0.252-0.314	22
1.197-1.259	37	0.189-0.251	21
1.134-1.196	36	0.126-0.188	20
1.071-1.133	35	0.063-0.125	19
1.008-1.070	34	0.000-0.062	18

Table 8.1Evaluation Points for Volume/Capacity

Table 8.2Evaluation Points for Ten-Year Projected Traffic Volume

ADT	Points	ADT	Points
>39041	50.0	18911-19520	33.5
38431-39040	49.5	18301-18910	33.0
37821-38430	49.0	17691-18300	32.5
37211-37820	48.5	17081-17690	32.0
36601-37210	48.0	16471-17080	31.5
35991-36600	47.5	15861-16470	31.0
35381-35990	47.0	15251-15860	30.5
34771-35380	46.5	14641-15250	30.0
34161-34770	46.0	14031-14640	29.5
33551-34160	45.5	13421-14030	29.0
32941-33550	45.0	12811-13420	28.5
32331-32940	44.5	12201-12810	28.0
31721-32330	44.0	11591-12200	27.5
31111-31720	43.5	10981-11590	27.0
30501-31110	43.0	10371-10980	26.5
29891-30500	42.5	9761-10370	26.0
29281-29890	42.0	9151-9760	25.5
28671-29280	41.5	8541-9150	25.0
28061-28670	41.0	7931-8540	24.5
27451-28060	40.5	7321-7930	24.0
26841-27450	40.0	6711-7320	23.5
26231-26840	39.5	6101-6710	23.0
25621-26230	39.0	5491-6100	22.5
25011-25620	38.5	4881-5490	22.0
24401-25010	38.0	4271-4880	21.5
23791-24400	37.5	3661-4270	21.0
23181-23790	37.0	3051-3660	20.5
22571-23180	36.5	2441-3050	20.0
21961-22570	36.0	1831-2440	19.5
21351-21960	35.5	1221-1830	19.0
20741-21350	35.0	611-1220	18.5
20131-20740	34.5	0-610	18.0
19521-20130	34.0		

Accident	Number	Accident S	everity	Accident Rate					
Range	Point	Range	Point	Range	Point				
>128	50	>262.4	50	>3264	50				
124-127	49	254-2-262.3	49	3162-3263	49				
120-123	48	246.0-254.1	48	3060-3161	48				
116-119	47	237.8-245.9	47	2958-3059	47				
112-115	46	229.6-237.7	46	2856-2957	46				
108-111	45	221.4-229.5	45	2754-2855	45				
104-107	44	213.2-221.3	44	2652-2753	44				
100-103	43	205.0-213.1	43	2550-2651	43				
96-99	42	196.8-204.9	42	2448-2549	42				
92-95	41	188.6-196.7	41	2346-2447	41				
88-91	40	180.4-188.5	40	2244-2345	40				
84-87	39	172.2-180.3	39	2142-2243	39				
80-83	38	164.0-172.1	38	2040-2141	38				
76-79	37	155.8-163.9	37	1938-2039	37				
72-75	36	147.6-155.7	36	1836-1937	36				
68-71	35	139.4-147.5	35	1734-1835	35				
64-67	34	131.2-139.3	34	1632-1733	34				
60-63	33	123.0-131.1	33	1530-1631	33				
56-59	32	114.8-122.9	32	1428-1529	32				
52-55	31	106.6-114.7	31	1326-1427	31				
48-51	30	98.4-106.5	30	1224-1325	30				
44-47	29	90.2-98.3	29	1122-1223	29				
40-43	28	82.0-90.1	28	1020-1121	28				
36-39	27	73.8-81.9	27	918-1019	27				
32-35	26	65.6-73.7	26	816-917	26				
28-31	25	57.4-65.5	25	714-815	25				
24-27	24	49.2-57.3	24	612-713	24				
20-23	23	41.0-49.1	23	510-611	23				
16-19	22	32.8-40.9	22	408-509	22				
12-15	21	24.6-32.7	21	306-407	21				
8-11	20	16.4-24.5	20	204-305	20				
4-7	19	8.2-16.3	19	102-203	19				
0-3	18	0.0-8.1	18	0-101	18				

Table 8.3Evaluation Points for Accidents

Table 8.4Evaluation Points for Physical Condition

Value	Points	Value	Points							
>45.6	150	22.80-23.19	93							
45.20-45.59	149	22.40-22.79	92							
44.80-45.19	148	22.00-22.39	91							
44.40-44.79	147	21.60-21.99	90							
44.00-44.39	146	21.20-21.59	89							
43.60-43.99	145	20.80-21.19	88							
43.20-43.59	144	20.40-20.79	87							
42.80-43.19	143	20.00-20.39	86							
42.40-42.79	142	19.60-19.99	85							
42.00-42.39	141	19.20-19.59	84							
41.60-41.99	140	18.80-19.19	83							
41.20-41.59	139	18.40-18.79	82							
40.80-41.19	138	18.00-18.39	81							
40.40-40.79	137	17.60-17.99	80							
40.00-40.39	136	17.20-17.59	79							
39.60-39.99	135	16.80-17.19	78							
39.20-39.59	134	16.40-16.79	77							
38.80-39.19	133	16.00-16.39	76							
38.40-38.79	132	15.60-15.99	75							
38.00-38.39	131	15.20-15.59	74							
37.60-37.99	130	14.80-15.19	73							
37.20-37.59	129	14.40-14.79	72							
36.80-37.19	128	14.00-14.39	71							
36.40-36.79	127	13.60-13.99	70							
36.00-36.39	126	13.20-13.59	69							
35.60-35.99	125	12.80-13.19	68							
35.20-35.59	124	12.40-12.79	67							
34.80-35.19	123	12.00-12.39	66							
34.40-34.79	122	11.60-11.99	65							
34.00-34.39	121	11.20-11.59	64							
33.60-33.99	120	10.80-11.19	63							
33.20-33.59	119	10.40-10.79	62							
32.80-33.19	118	10.00-10.39	61							
32.40-32.79	117	9.60-9.99	60							
32.00-32.39	116	9.20-9.59	59 58							
31.60-31.99 31.20-31.59	115 114	8.80-9.19 8.40-8.79	58 57							
30.80-31.19	114	8.00-8.39	56							
30.40-30.79	113	7.60-7.99	55							
30.00-30.39	112	7.20-7.59	55 54							
29.60-29.99	110	6.80-7.19	53							
29.20-29.59	109	6.40-6.79	52							
28.80-29.19	108	6.00-6.39	51							
28.40-28.79	107	5.60-5.99	50							
28.00-28.39	106	5.20-5.59	49							
27.60-27.99	105	4.80-5.19	48							
27.20-27.59	104	4.40-4.79	47							
26.80-27.19	103	4.00-4.39	46							
26.40-26.79	102	3.60-3.99	45							
26.00-26.39	101	3.20-3.59	44							
25.60-25.99	100	2.80-3.19	43							
25.20-25.59	99	2.40-2.79	42							
24.80-25.19	98	2.00-2.39	41							
24.40-24.79	97	1.60-1.99	40							
24.00-24.39	96	1.20-1.59	39							
23.60-23.99	95	0.80-1.19	38							
23.20-23.59	94	0.40-0.79	37							
		0.00-0.39	36							

# **Special Considerations**

While the STBG Evaluation examines the existing volume, capacity, safety, and physical condition of each project, it is recognized that certain projects address other areas deserving of recognition. These areas have been identified by the Transportation Technical Committee to include Air Quality, and Automobile Alternatives. This section shall address these "Special Considerations." Eligible projects will be presented to and reviewed by the Technical Committee on request for special consideration by the submitting jurisdiction.

## A. Air Quality

Projects eligible to receive "bonus" points for the air quality criteria can be located in areas of either non-attainment or attainment as defined by the federal air quality standards and regulated by the Illinois Environmental Protection Agency (IEPA) and lowa Department of Natural Resources (IADNR). Projects in the MPO planning boundary will be identified with supporting information by the submitting jurisdiction and presented to the Technical Committee for their consideration. Those projects that are believed to have a positive effect on the quality of air in the area will be identified by the submitting jurisdiction and/or Bi-State staff in consultation with appropriate state and federal agencies. Projects that maintain the existing air quality or promote alternatives to single-occupant vehicles may receive "bonus" points of 0% to +2% of the total score. The percentage of "bonus" points to be awarded will be determined by the Technical Committee.

## Evaluation of Project's Impact on Ambient Air Quality

2% – *High Project has a high impact* on the improvement of air quality in the immediate vicinity of the facility (Congestion Management Process–CMP, transit route, park and ride lots, pedestrian and bicycle facilities, signal improvements, and intersection improvements).

1.5% – Moderate Project has a moderate impact on the improvement of air quality (new construction, widening, and resurfacing for streets or bridges with poor surface condition).

1% – Low Project makes a small contribution to improving air quality (resurfacing for streets or bridges with fair or good surface condition, carpool/vanpool administration, other).

0% – *Neutral Project* has no significant impact on improving or decreasing air quality (resurfacing for streets or bridges with very good surface condition, administrative and maintenance activities, nonconstruction bicycle projects to enhance the safe use of bicycles for transportation purposes).

(Source: ACOGOK, Oklahoma City, OK, 2011)

#### B. Truck/Business Route

To support the long range transportation plan objective for economic vitality and facilitate better freight movement, special consideration may be given to projects on truck or business routes. Projects eligible to receive "bonus" points for the truck/business route criteria can be located on a federal, state or locally designated truck or business route using Illinois or Iowa Departments of Transportation route information. Local route must be documented with an ordinance or official record from the city/county. The project may receive one percent (1%) of the total points added to the project score.

#### C. Connectivity

Enhancing the network connectivity and interconnection between modes and on the transportation network is encouraged. Projects that close roadway gaps in east-west or north-south corridors and improve connections to freight facilities, transit centers or employment centers may receive special consideration for connectivity. Projects in the MPO planning boundary will be identified with supporting information by the submitting jurisdiction and presented to the Technical Committee for their consideration. The project may receive one percent (1%) of the total points added to the project score.

#### D. Employment Center

Supporting economic vitality is a performance objective of the long range transportation plan. The plan suggests using transportation programming to encourage desired development patterns and consider regional travel patterns and commuting in the development of the transportation network. Special consideration may be given to projects that improve movement of workers to employment centers. If a major employment center is present within the project limits or carries traffic to a major employment center as a transportation connector, then a project may receive one percent (1%) of the total points added to the project score. A major employment center is defined as a major commercial or retail area, shopping center, office park, industry or other employer than has more than 100 employees. Projects in the MPO planning boundary will be identified with supporting information by the submitting jurisdiction and presented to the Technical Committee for their consideration.

# Appendix A

#### A. Historical Changes in Scoring

Criteria data, as determined in the STBG Evaluation, are transformed to point values through the use of Tables 8.1 through 8.4 (see Section 8). The criteria points are determined by locating the actual data value for the category on the proper table. The summation of these criteria points for each project will become the final score upon which projects will be placed in order.

#### **B. Original Evaluation Points**

Tables 8.1 through 8.4 were originally developed after review of many sets of tabulated data from FAU projects submitted in 1983 and characteristics of the regional network. The highest data value for the volume/capacity table was determined from traffic volumes and capacity experienced by the existing network. Likewise, for the 10-Year Projected Volume Table, the highest data value of 39,000 was established as very few facilities exceed this value in the 2005 Long-Range Transportation Plan. The Physical Condition Table was based on those upper values of the Volume/Capacity Ratio and 10-Year Projected Traffic Volume Tables. Upper values for the Accident Table were set at levels lower than may be expected as projects in the past tended to have low values with one or two exceptions. These exceptions were of such high values it was necessary to place a ceiling on the highest point value available. Consideration was given to awarding the exceptions higher values; however, this resulted in a grouping of projects with lower values. The Accident Rate Table was established for an accident rate/100 MVM or segment projects as this represents the project majority. Intersections will be given points equivalent to the segments of the same rank (i.e., the highest intersection will receive the score of the highest segment).

Actual points on the tables were determined by a base of 20 projects multiplied by the assigned category weight. The base of 20 was utilized as approximately 20 projects have been submitted by jurisdictions in Iowa and jurisdictions in Illinois in past years. Ranges for the tables were refined to fit point values. A reasonable range was determined for the Volume/Capacity Ratio Table and applied such that the median 1983 project received a median value of 30 (of 60 available points). This range was continued until a value of zero was reached (at a point value of 21). All other tables were set such that the lower limit of points was consistent with this value. As the accident category consists of three criteria (accident number, accident rate, and accident severity) the Accident Table consists of three tables based on each criteria. These tables are given an upper value of 20 points and a lower value of 7 points such that their summation will yield the 60 and 21 points consistent with the Volume/Capacity Ratio Table of equal weight. (Refer to Federal-Aid Urban Program Evaluation Manual, April, 1985 for the original Tables 7.1 through 7.5 and Table 9.1 for weights.)

## **C. Revised Evaluation Points**

Having reviewed the original evaluation point tables, it was determined that the maximum point value for this criteria in the "Level of Service" (LOS) category summed to 145 points [(60 + 60 + 25) or (v/c + 10-year projected volume + congestion)]. The criteria in the "Safety" category summed to 60 points in total [(20 + 20 + 20) or (number of accidents + severity + accident rate)]. The criteria of the "Physical Condition" category had a maximum point value of 100. Thus, LOS was favored in the evaluation scoring followed by the "Physical Condition" and "Safety" categories, respectively. The maximum point value for a candidate project equaled 305 points.

With considerations given to system preservation, the idea of each evaluation category and the sum of each criteria total being equal was developed to equalize the individual categories. In addition, weighting of categories was removed. Tables 8.1 through 8.4 reflect the categories of LOS, Safety, and Physical Condition, each totaling 150 points maximum or a total of 450 points. To maintain a similar range in each criteria, points were adjusted to approach a median value from the highest value possible. For example, the criteria, v/c, has a maximum point value of 50. The median point value based on 1993 projects equaled 27.7, while the median for the 10-year future volume equaled 25.9. Table A.1 illustrates the hierarchy of the STBG evaluation and the maximum points for each criteria. Table A.2 shows the re-evaluation of maximum point values for 1993 candidate projects with balanced categories using the adjusted scoring tables.

Table A.3 illustrates 2012 revisions made to congestion reduction and the refinement of physical condition for the facility condition. There continues to be a maximum of 450 points as part of the evaluation process.

Category	Criteria	Maximum Points		
1. Level of Service (LOS)	<ul> <li>a. Existing Volume/Capacity Ratio</li> <li>b. 10-Year Projected Traffic Volume</li> <li>c. Traffic Congestion Reduction</li> </ul>	50 50 50		
2. Safety	<ul><li>a. Total Number of Accidents</li><li>b. Accident Severity</li><li>c. Accident Rate</li></ul>	50 50 50		
3. Physical Condition	<ul> <li>Surface Type, Facility Condition, Existing Volume, 10-Year Projected Volume, Number of Lanes</li> </ul>	150		
4. Special Consideration	<ul> <li>Air Quality</li> <li>Truck/Business Route</li> <li>Connectivity</li> <li>Employment Center</li> </ul>	0-2% 1% 1% 1%		

# Table A.1Criteria and Maximum Points Used for Surface Transportation ProgramEvaluation Tables

Table A.2
Re-Evaluation of Maximum Point Values
Balanced Categories Using Adjusted Scoring Tables

															NO SPECIAL CONS		
η		OF SERVICE			T		SAFETY		T		1		PHYSICA		TOTAL	SPECIAL	
ų		V/C	10YR A			NGESTION		ACCIDENTS			ACCIDEN				SCORE	CONSID.	SCORE
PROJECT LOCATION		POINTS	VALUE	POINTS	VAL	POINTS		POINTS	VALUE	20INT9		POINTS	VALUE	POINTS			
بر 	1					-	1				1	, ,	1				- 70 -
23AV(24-27ST), MOLINE	1.85		28,425		1	•	64		98	29.0		30.0	22.99		275.00	4.75	
23AV(16-19ST), MOLINE	1.59		27,733		1	0		43.0	187	40.0		30.0			286.50		291.37
7ST(19-28AV), MOLINE	1.14		13,167		2		86	39.0	138	34.0		28.0	20.10		301.50	14.06	
15STPL(16-18AV), MOLINE			10,633		2			27.0	52	24.0		36.0			277.50	12.60	290.10
60ST(JDR-52AV), MOLINE			4,100		2			27.0	60	25.0		37.0	25.80		285.00	24.30	309.30
15TH ST(13-16AV), MOLINE			13,083		2			22.0	35	22.0		35.0	14.55		255.50	11.72	
85AVW(92AV-31STW),ROC			4,788		1		2	18.0	4	18.0		25.0			222.50	0.00	
34ST(12-23AV), MOLINE	0.51		7,333		2	-	40	28.0	52	24.0		34.0	11.55		250.00	16.50	
34AV(65-75ST), MOLINE	0.56		7,992		2		22	23.0	48	23.0		22.0			235.50	15.13	
7ST(18-26AV), E.MOLINE	0.79		9,742		1	0		24.0	41	23.0		22.0	14.63		196.50		198.47
27ST(23-26AV), MOLINE	0.52		4,550		2	-		27.0	58	25.0		35.0			237.50	11.50	
12AV(7-14ST), MOLINE	0.48		2,406		2		33	26.0	47	23.0		32.0			227.50	4.78	
21AV(10-13ST), E.MOLINE			1,448		1		8	20.0	12	19.0		50.0			187.00		188.87
ZIAV(10-1001), L.incluitz j	1	20	1,112	13.0		U	-	20.0		10.01	0,000		1	55	101.00	1.01	100.0.
KIMBERLY(BRDY-ELMR), IA	A 1.28	38	44,956	50.0	1	0	178	50.0	300	50.0	196	19.0	10.42	62	269.00	0.00	269.00
CRWCRK(MIDDL-VALLEY),			6,353		2	-	7	19.0	11	19.0		19.0			262.00	3.62	
BELMONT(MIDDL-VALLEY)			6,353		2		14	21.0	22	20.0		19.0	29.56		259.00	4.09	
US67(26ST,BE-I-80,LC), IAI	1		17,726		1			21.0 50.0	484	20.0 50.0		27.0	8.27		243.50	0.00	
18ST(MIDDLE-SPRUCEHLS	-		12,400		1	-	42	50.0 28.0	484	50.0 27.0		27.0	8.27 12.40		243.50	1.00	
			6.900		1	-		28.0 27.0	61	27.0		26.0	20.70		211.00	0.00	•
59ST(60ST-BRADY ST), DA LOCUST(ZENITH-I80), DAV.	1		14,300		1	-	57	27.0 32.0	91	25.0 29.0		26.0			203.50	0.00	
						0	30	32.0 25.0	50	29.0 24.0		20.0	20.27				
FAIRMNT(KIMBERLY-53ST)	<b>'</b>		4,108			-			50 50						206.00	0.00	
46ST(NWBLVD-WESTERN)	1		5,750			0		25.0		24.0		45.0			214.50	0.00	
46ST(JRSYRDG-ELMORE),	·		5,750			0	1	18.0	1	18.0		18.0	20.25		181.50		181.50
DEVLSGLN(DCKCRK-MID)			10,210		1	•	25	24.0	45	23.0		20.0			173.00		175.0
61ST(DIVISION-APPMTTX),	· .		4,255		1	•	23	23.0	41	23.0		23.0			180.00	0.00	
MID(BELMONT-CRWCRK),			7,600		1	0	35	26.0	63	25.0		21.0			177.00		183.8
TANGFTLN(UTCRDG-DVLS			7,450		1	0	29	25.0	47	23.0		20.0	7.08		173.00		174.0
TANGFTLN(DVLS-MIDDL), I	0.38		4,760		1	0	6	19.0	10	19.0		19.0			169.50		171.2
46ST(BRADY-EASTERN), D			5,750		1	•		24.0	36	22.0		43.0			187.50		187.5
53ST(THORNWD-FAIRMNT)			5,613		1	0	20	23.0	33	22.0		27.0			171.50		171.5
UTCA(TNGFTLN-CRWCRK)	0.65	28	6,300	23.0	1	0	6	19.0	10	19.0	) 174	19.0	3.15	43	151.00	0.00	151.00
	2 62		10.000				42		70	25.7	1047	20					
Average of 1993 Rankings	<b>0.63</b>	27.7	10,060	25.9	· 1.	<b>1</b> 6	43	27.0	. 73	25.5	5 1,047	28	14.73	72			
Highest value possible	<b>1 953</b>	50	>39,041	50.0	2	50	>128	50.0	>262.4	50.0	>3,264	50.0	>42.60	150	7		
Lowest value possible			>39,041		1				>202.4 0	50.0 18.0		18.0	×42.60 0.00				
LOWEST VAILE POSSIDIE	0.00	10		10.0		U I	1 ×	10.0	•	10.0	v	10.0	0.00	30			
, I	1						1					J	1				
. I			SERVICE V	√ARIABLES				SAFETY VAR				J		CONDITION			
MAXIMUM POINT VALUE	′ '	50 + 50 + 50	J = 150				′	50 + 50 + 50 =	/ = 150				150		= 450		
															-		

## Table A.3 **Comparison of 2011 STP Evaluations Criteria with Proposed Changes** vs. 2009 STP Evaluation Criteria

		E	<del>valuat</del> i	ions wit	h Propos	ed Chang	<del>es 2011</del>															
					Leve	el of Servi	ce	s Safety						Physica	l Condition	TOTAL						
				v/c	10 Y	r ADT	Conge	estion	Accident Numbers		Severity		Accident Rate		Condition	Condition	Score					
ID No.	Jurisdiction	Project Location	Value	Points	Value	Points	P. Improv.	Tran. Alt.	Value	Points	Value	Points	Value	Points	Value	Points	No Sp. C.					
		IOWA QUADCITIES																				
IA - 03	Davenport	Fairmount Street (Kimberly Rd53rd St.)	0.24	21	6,100	22.5	20	10	23	23	43	23	752.9	25	18.3	81.0	225.5					
IA - 04	Davenport	Veterans Memorial Parkway (I-74 to Utica Ridge Rd.)	0.16	20	7,100	23.5	20	10	3	18	5	18	261.0	20	17.1	78.0	207.5					
IA - 02	Davenport	Veterans Memorial Parkway (Jersey Ridge RdElmore Ave.)	0.12	19	6,000	22.5	20	10	0	18	0	18	0.0	18	14.9	73.0	198.5					
IA - 01	Davenport	53rd Street (Thornwood AveN.Fairmount Street	0.35	23	11,600	27.5	20	5	24	24	41.6	23	440.9	22	8.7	57.0	201.5					
		ILLINOIS QUADCITIES																				
IL - 16	Rock Island	18th Avenue (17th St. to Moline City Limits)	0.80	30	14,600	29.5	20	5	220	50	326	50	890.6	26	6.7	52.0	262.5					
IL - 06	East Moline	Kennedy Drive (IL92/17th AveAve. of Cities)	0.51	26	10,000	26.0	15	10	139	50	209	43	942.1	27	11.7	65.0	262.0					
IL - 07	Moline	Avenue of Cities (41st - 43rd Sts.)	0.76	30	25,500	38.5	15	0	52	31	86	28	797.6	25	15.1	73.0	240.5					
IL - 15	RICO	Co.Hwy.78 & 7 (RI/Milan Parkway and Knoxville Rd.)	0.38	24	13,200	28.5	15	5	141	50	213	43	340.0	21	8.9	58.0	244.5					
				Evalua	tions wit	hout Pro	posed Cha	inges 2009	9													
					Leve	el of Servi	ce .				Saf	etv			Physical	Condition	TOTAL	Speci	ial Considera	ation	Total	TOTAL
				v/c		r ADT		estion	Accident	Numbers		erity	Accide	nt Rate	- Injoica	condition	SCORE	opeci	ar consider		Sp. C.	SCORE
ID No.	Jurisdiction	Project Location	Value	Points	Value	Points	Value	Points	Value	Points	Value	Points	Value	Points	Value	Points	NO Sp. C.	Sidwalk	Transit	Trail	%	with Sp.
		IOWA QUADCITIES																				
IA - 03	Davenport	Fairmount Street (Kimberly Rd53rd St.)	0.24	21	6,100	22.5	1	0	23	23	43	23	752.9	25	27.40	104	218.5	1%	0%	1%	2%	222.9
IA - 04	Davenport	Veterans Memorial Parkway (I-74 to Utica Ridge Rd.)	0.16	20	7,100	23.5	1	0	3	18	5	18	261.0	20	25.70	100	199.5	1%	0%	1%	2%	203.5

24

220

139

52

141

24

50

50

31

50

41.6

326

209

86

213

23

50

43

28

43

440.9

890.6

942.1

797.6

340.0

22

26

27

25

21

8.70

13.30

13.30

18.15

5.74

57

69

69

81

50

176.5

304.5

291.0

283.5

266.5

1%

0%

1%

0%

0%

0%

1%

0%

0%

0%

0%

0%

1%

0%

0%

1%

1%

2%

0%

0%

178.3

307.5

296.8

283.5

266.5

0.35 23

0.80 30

0.51 26

0.76 30

0.38 24 11,600

14,600

10,000

25,500

13,200

27.5

29.5

26.0

38.5

28.5

1

2

2

2

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50

50

50

IA - 01 Davenport

IL - 07 Moline

IL - 15 RICO

53rd Street (Thornwood Ave.-N.Fairmount Street

Co.Hwy.78 & 7 (RI/Milan Parkway and Knoxville Rd.)

ILLINOIS QUADCITIES IL - 16 Rock Island 18th Avenue (17th St. to Moline City Limits)

IL - 06 East Moline Kennedy Drive (IL92/17th Ave.-Ave. of Cities)

Avenue of Cities (41st - 43rd Sts.)