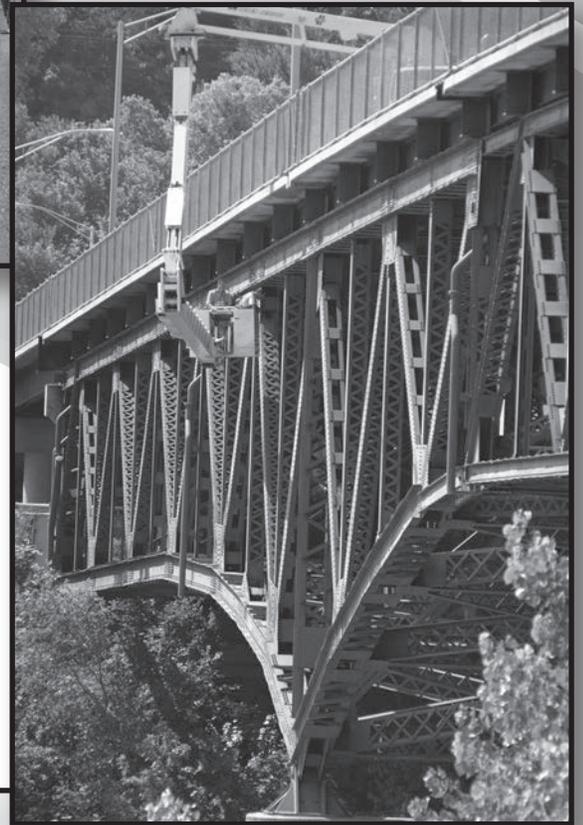


Project Selection Criteria



PROJECT SELECTION CRITERIA

Projects in the STIP are created from various levels of government (city, county, and state). Consequently, they are also created from many different processes and criteria. The criteria described below were those used by KDOT when the projects currently programmed and listed in this document were selected. The current transportation program, Transportation Works for Kansas (T-WORKS) was authorized by the state legislature in May 2010 and covers the period from SFY 2011 through 2020. T-WORKS primary areas of focus are:

- Preservation of the highway system
- A multi-modal approach to meeting transportation needs with increased funding to Public Transit, Rail and Aviation programs
- The leveraging of transportation to further the state's economic goals

Projects and information in this STIP document correlate primarily with the first and third T-WORK objectives with only Transit represented from the second objective. While Rail and Aviation programs are very important and are a component of T-WORKS, they are not part of the federal requirements for the STIP and are not included in this

discussion. Under T-WORKS, road and bridge construction projects are categorized into four core groups or programs: Preservation, Modernization, Expansion and Local Construction. The majority of the modernization and expansion projects to be accomplished in the T-WORKS program were selected and announced jointly by the Governor of Kansas and the Secretary of Transportation in June 2011. Remaining program selection, as directed by the legislature and as outlined in the T-WORKS program, is on a two-year rolling schedule. By making selections on a rolling two-year basis, KDOT has increased flexibility to respond to economic pressures or opportunities as they arise.

For projects in the STIP the 2-year rolling selection process means that the majority of the projects in the first two years of the STIP have been selected and programmed while the majority of the projects in the latter 2-years are yet to be selected. However, the recent state budget issues have altered this process slightly. Some project lettings planned for SFY 2017-2019 have been deferred to later years that are not covered by this document. The SFY 2017-2020 projects listed in this STIP are those projects that have been evaluated and are currently committed. As the

budget allows, projects from the delayed list will be advanced if funding becomes available. Additionally, those projects with federal funding and an annual selection process may be partially represented in the STIP document because of timing issues with the STIP and the project selection period. All projects with federal funding that are selected and developed after the preparation of the STIP document will be added to the STIP through the amendment process.

Although the funding uncertainty at the federal level has been alleviated with the passage of the 10-year FAST Act (Fixing America's Surface Transportation Act) uncertainty continues at the state level with continued state budget issues. The persisting budget uncertainty at the state level impacts the magnitude of the state program and the potential lack of consistent, long-term state funding makes planning difficult. Until secure long-term funding is in place at the state level, the existing uncertainty limits the number of new projects KDOT undertakes and will especially affect planning for projects in the years following T-WORKS. During this period of uncertainty, KDOT will continue to develop plan production projects so that, when long-term funding is secured the agency is ready with projects that are construction ready, or are nearly construction ready.

In 2008 Kansas adopted a Long Range Transportation Plan (LRTP) which has the three guiding principles of

preserving the transportation system, making travel safer, and supporting economic growth. These principles were developed with the input from hundreds of transportation stakeholders during an 18-month process. Today these guiding principles provide the framework for KDOT's day-to-day decision-making processes and are embodied by the projects selected and programmed in this STIP.

— PROJECT SELECTION— (An Expanded Process)

One of the most significant changes implemented in T-WORKS is the manner in which KDOT selects projects. In the previous program, the Comprehensive Transportation Program (CTP), project selection was based solely on engineering factors. In T-WORKS, engineering factors are still used to select projects but in some project selections engineering factors have been augmented with economic impact evaluation and/or local input.

KDOT categorizes highway construction projects into four broad programs—**Preservation** for projects that take care of what is already in place (pavement rehabilitation and reconstruction and bridge repairs and replacements); **Modernization** for projects that improve safety by improving the existing roadway (shoulder improvements, flattening hills, straightening curves, and improving interchanges); **Expansion** for projects that add to the existing system (new lanes and interchanges); and **Local**

Construction for projects on county and city roads. Within each of these major programs are funding and/or project-type groups that separate the projects into more specific groups or subcategories.

In the past, KDOT has primarily relied upon priority formulas or other data-driven processes to select projects for inclusion in the transportation programs. While this system worked well to select preservation-type projects, it was not as effective for selecting expansion and modernization projects. Additionally, since only engineering factors were considered in the priority formulas, other considerations that stakeholders and Kansans felt were important did not factor into the selection process.

Several important planning and-policy efforts, including development of the statewide Kansas Long Range Transportation Plan (LRTP) in 2007/8 and the subsequent creation of the T-LINK Task Force (“Transportation-Leveraging Investments in Kansas”) in mid-2008, have helped KDOT set a policy direction for choosing transportation projects that is built on the lessons learned from the CTP era. KDOT has developed an expanded process for selecting highway projects that is responsive to the direction set in the LRTP and by the T-LINK Task Force. In addition, this process fulfills the requirements specified by the T-WORKS legislation.

Under the new process, which is still evolving, that was crafted by T-LINK—rather than relying solely on engi-

neering factors- regional priorities and potential economic impact were incorporated into project selection. This new selection process was piloted by KDOT in selecting major highway construction projects for T-WORKS. Proposed projects are scored based on how well a project addresses relevant criteria, such as engineering needs, regional priorities identified at local consult sessions across the state, and support for economic development.

The chart below illustrates the initial recommendation from the T-LINK task force on how the three criteria are to be weighted among the program categories. To aid in assessing potential economic impact, the agency is also piloting a computer modeling package that estimates the increase in jobs, income and economic output for a region due to a transportation improvement.

Pilot Project Selection Criteria				
	Engineering Factors	Regional Priorities	Economic Impact	Other
Preservation	100%	-	-	
Modernization	80%	20%	-	
Expansion	50 %	25%	25%	
Local Construction				100 %

The information from the modeling package will be used in conjunction with information gathered by KDOT’s area engineers from local officials to determine economic impacts. The state long range plan, MPO plans, and local entity plans, along with local consult meetings will be used to determine re-

gional priorities. By employing these selection criteria, KDOT will ensure that the projects chosen meet our LRTP guiding principles, fulfill the goals of T-LINK and meet the requirements of the T-WORKS legislation.

In addition to state projects, there are local projects on county and city roads that have their own selection process. These projects are selected and developed by local public authorities (LPAs). This process is coordinated at KDOT by the Bureau of Local Projects (BLP) and is discussed in greater detail in the Local Construction Program section.

— PRESERVATION — (Taking care of what we have)

The first major program category in T-WORKS is the Preservation program. The objective of this program is to protect the public's investment in its highway system by preserving the "as built" condition for as long as possible. Without proper maintenance, the cost for major repairs and/or replacement at a later date may be several times greater than the cost of timely maintenance. Projects within this category address the first principle of the LRTP of preservation.

Projects within the Preservation program are further divided into subcategories, and projects with the same subcategory share similar work types. The Preservation program includes the subcategories: Bridge and Culvert Repair (BSR & BCR), Bridge Painting (BSP),

Bridge Replacement or Rehabilitation (PBR), Bridge Re-deck (PDR) and Culvert Bridge (PCR), Contract Maintenance (CMN), Emergency Repair (EMR), Interstate Basic Improvement (IRP) and Non-Interstate Basic Improvement (RIP), Interstate Resurfacing (ISR), Miscellaneous for Preservation (NHP), Non-Interstate Resurfacing (IRR), Signing (SOS), Pavement Marking (PMR), Railroad Crossing Surfacing (RRS), Signing (SOS), Signing & Lighting Repair and Replacement (SLR), State Route Removal (SRR). Each of these subcategories is described in more detail on the following pages. The project selection criteria for projects in this program rely entirely on engineering factors.

Bridge and Culvert Repair (BSR & BCR)

The Bridge Repair and Culvert Repair subcategories are for bridge and culvert repairs of lesser magnitude than the Bridge Replacement/Rehabilitation and Culvert/Bridge Rehabilitation subcategories. These subcategories aim to restore the structural integrity of bridges and culverts. Bridge /culvert repair work includes overlaying concrete decks; replacing or resetting expansion joints; resetting bearing devices; repairing abutments, piers, or girders; and repairing damage from external sources. Currently, all projects within these two subcategories are state funded and selection is usually on an annual basis as funding allows.

To select bridge projects, each

KDOT District, using the Bridge Management Engineer's recommended repair list, submits prioritized lists of candidate bridge and culvert projects to the Bureau of Construction and Maintenance and the Bureau of Design. Each candidate project is reviewed for the structure's condition history and latest inspection to confirm necessary repairs or replacement. Statewide lists are prioritized using such factors as maintenance effort, safety, traffic, and engineering judgment. These lists are then submitted to the Bureau of Program and Project Management for review to confirm that the candidate structures are not programmed for future work under any other KDOT program. The prioritized lists are then merged to create the yearly statewide repair list.

Bridge Painting (BSP)

Work performed in this subcategory is funded with state funds. Currently, project selection for Group A bridges is on an annual basis as need dictates and funding allows. KDOT districts are responsible for painting Group B bridges and work is performed as need dictates.

There are approximately 800 bridge structures on the Kansas State Highway System that require periodic painting to slow corrosion of the structural steel. These structures contain nearly 242,000 tons of structural steel. They are categorized into two groups:

Group A: Structures that have 10 tons or more of structural steel. The

Bridge Management Engineer prioritizes these structures (approximately 760 bridges) according to the Bridge Inspection Manual's "Paint Condition Rating." The statewide prioritized list is then reviewed by the Bureau of Program and Project Management to verify that each candidate structure is not programmed for future work under any other KDOT program. Projects are scheduled in order of priority until available funds are exhausted.

Group B: Consists of structures that have less than 10 tons of structural steel. Statewide this number is approximately 40 bridges. The districts where these bridges are located are responsible for prioritizing and painting of these structures.

Bridge Replacement/ Rehabilitation (PBR)

The Bridge Replacement and Rehabilitation subcategory is designed to replace or rehabilitate sub-standard bridges. Sub-standard bridges are those in a deteriorated condition or with deficiencies in load-carrying capacity, width, or traffic service. Projects within this subcategory are funded with a combination of federal and state funds.

Bridge projects are selected using the Bridge Priority Formula- a schematic is on the following page. The formula was developed by KDOT and Woodward-Clyde Consultants in 1981 and has been modified since then to incorporate updated technology, policy direction, and

available data.

Some SFY 2017 projects have been selected and programmed and SFY 2018 projects are anticipated to be selected in the fall. All projects funded with federal funds selected after this STIP document is prepared will be amended to the STIP using the amendment procedures in place.

Bridge Priority Formula		
(Attributes / Adjustment Factors)		
		Adjustment Factors
Attribute (Need Value)	Rel. Weight	AADT¹
Bridge Width (Driver Exposure Attribute)	0.222	0 to 1
Deck Condition	0.169	0 to 1
Structural Condition	0.359	0 to 1
Operating Rating	0.250	0 to 1
Sum of All Weights	1.00	
1 Average Annual Daily Traffic- The number of vehicles per day on a roadway segment averaged over one.		

Bridge Re-Deck and Culvert Rehabilitation (PDR & PCR)

The Bridge Re-deck subcategory addresses bridges where the bridge superstructure and substructure are in satisfactory condition, but the bridge deck is deteriorated to the point that a Bridge Repair type project would not be adequate. The Culvert Rehabilitation subcategory addresses culverts that are beyond the scope of a Culvert Repair project, but do not qualify as a Bridge Replacement /Rehabilitation project. Projects in these subcategories are usually funded using

state funds.

Each District, using the Bridge Management Engineer's recommended repair list, submits prioritized lists of candidate projects to the Bureau of Design. Each candidate project is reviewed for the structure's condition history and latest inspection to confirm necessary repairs or replacement. Statewide lists are prioritized using such factors as maintenance effort, safety, traffic, and engineering judgment. The lists are submitted to the Bureau of Program and Project Management for review to confirm that each candidate structure is not programmed for future work under any other KDOT program. The prioritized lists are then merged to create the yearly statewide repair list that will be programmed as funding allows.

Contract Maintenance (CMN)

Maintenance activities are performed to offset the effects of weather, deterioration, traffic wear, damage, and vandalism. Eligible projects are those that KDOT is not adequately staffed or equipped to perform. Due to the diverse types of actions and/or geographic location, contracting for the service is the most cost-effective approach for the agency. These projects are funded using state funds.

Selection is based on priority as seen from a statewide perspective. Basic criteria for contract maintenance projects are: 1) inability to perform necessary ac-

tions with existing maintenance forces; 2) ineligibility for other maintenance programs; 3) unforeseen (generally the result of weather or traffic conditions). Projects are selected on the basis of statewide need for corrective action, rather than selection based on a balanced distribution between districts. Projects will be programmed in each year as funding allows.

Emergency Repair (EMR)

State funds are reserved annually for emergency repairs that occur as the result of accidents or weather-related disasters. Allocation of these funds is authorized by the State Transportation Engineer as events occur that warrant the need.

Interstate Basic Improvement and Non-Interstate Basic Improvement (RIP & IRP)

Interstate and Non-Interstate Basic Improvement projects are projects that involve pavement rehabilitation or replacement but do not include widened shoulders, added passing or through lanes, or intersection/ interchange improvements. Projects in the Non-Interstate Basic Improvement subcategory and the Interstate Basic Improvement subcategory are funded with a combination of federal and state funds.

The projects in these two subcategories are selected using the pavement condition-related attributes of the Non-

Interstate and Interstate Priority Formulas along with input from district personnel. For additional discussion of the formulas, refer to the Modernization section of Project Selection Criteria. Projects in these two subcategories will be selected and programmed as funding allows. Projects have been partially selected for both SFY 2017 and 2018-with additional selections to be made later as the budget allows.

Interstate Resurfacing (ISR)

Center-line miles of divided Interstate roadway are resurfaced or repaired annually through the Interstate Resurfacing set aside program. Input from the Pavement Management System is used to decide which sections of interstate are to be resurfaced. Generally, projects in this subcategory are state funded and are programmed to the extent the budget allows.

Miscellaneous for Preservation (NHP)

This subcategory was established in SFY 2012. This subcategory is reserved for atypical preservation projects that occasionally arise. The scopes of work for projects in this subcategory do not fit into the standard preservation subcategories. However, the scope of work is preservation related with the desire to use preservation program funding. These projects are predominantly state funded and since these are non-routine projects, project selection is based upon need.

Non-Interstate Resurfacing (IRR)

Approximately 1,200 miles of two-lane non-Interstate pavement are resurfaced or repaired annually through this state set aside funded program. Since most of these projects are selected on an annual basis, projects for this group appear only in the first year of the STIP. The program's intent is to maintain non-Interstate pavements in adequate condition and keep ride ability at an acceptable level. These projects are selected by using the Pavement Management System(PMS). PMS is an integrated set of procedures that were developed by KDOT and Woodward-Clyde Consultants. It recommends pavement maintenance and rehabilitation strategies on both a network and a project level. Currently, projects within this subcategory are state funded and are programmed to the extent the budget allows. While KDOT continues to face shrinking revenues, maintenance of our road system remains a priority and as such a significant portion of the state funding available in 2017 is focused on these projects.

Pavement Marking (PMR)

This subcategory was established in 1996 to address pavement marking necessary due to pending new federal requirements for minimum retroreflectivity of pavement markings. Improvements in this category utilize high-performance, long-life pavement marking materials. Efforts are also made to identify those marking materials with wet-weather

retroreflectivity. This program is limited to projects that do not have high performance markings included under another KDOT program.

Projects are selected annually by the Bureau of Transportation Safety and Technology staff based upon a roadway's traffic volumes, past performance of marking material, geometry, surface condition, surface type, crash history, and, in the case of new marking materials, the research benefit. Projects within this subcategory are generally funded with 100 percent federal funds. If project selection occurs after the STIP preparation period, new projects will be amended to the STIP using the amendment procedures in place.

Railroad Crossing Surfacing (RRS)

The Rail Road Crossing Surfacing subcategory was established in SFY 2000 to address projects that are at-grade highway/railroad crossing approaches and surface upgrades. Eligible crossings are rural State Highway System Crossings and State Highway System City Connecting Link crossings in cities with populations up to 2,500.

Projects are selected from applications for crossing surface improvement projects submitted by railroad companies and KDOT district personnel. Project scopes include all necessary materials and activities required for long-term crossing surface and approach improvements. These projects are funded with

50 percent state and 50 percent railroad company funds. Project selection is usually on an annual basis to the extent that the budget allows.

Signing (SOS)

Established in 1996, this subcategory addresses necessary sign replacements on the State Highway System in response to new federal requirements for minimum retro reflectivity of signs. This program schedules sign replacements based upon highway route mileage statewide and the total mileage of all the routes in each of KDOT's six districts for that year. Excluded from this program are signs that are scheduled for repair under other state projects in the same year. This program also excludes any signs that were replaced within seven years of the scheduled date of the replacement project. Projects are selected annually and are generally funded with 100 percent federal funds. If project selection occurs after the STIP preparation period, new projects will be amended to the STIP using the amendment procedures in place.

Signing & Lighting Repair & Replacement (SLR)

This is a new subcategory created in SFY 2012 to address the need for signing and light structure maintenance across the state. The projects in this set aside are funded 100% with state funds. Currently, there are approximately 2,270

signing/lighting structures under KDOT's responsibility. The role of this program is to enable KDOT to monitor and prioritize the maintenance of these structures.

Every four years structure inspections are performed with the most recent inspection performed in 2013 and the next inspection scheduled to occur in 2017. Based on the observations made during the inspection, ratings are assigned to each structure. Using this information, the Signing & Lighting Engineer then compiles the ratings and prepares a prioritized list recommending structures for replacement or repair. Projects are programmed from this list using the available set aside funds to the extent that the budget allows.

State Route Removal (SRR)

The State Route Removal (SRR) subcategory was established in SFY 2013 as a mechanism for the transfer of short state routes to the Local Public Authority (LPA). Routes under consideration for transfer function more in the manner of local roads and are a better fit under the LPA jurisdiction. The transference results in state route reduction, thereby reducing state maintenance costs. Candidates for the SRR program include stub routes, spur routes and business routes.

Projects are selected based on coordination with LPA's that elect to participate in the set aside program. LPA's accept the route transfer in existing con-

dition and in return receive a lump sum payment funded with state funds. The payment amount is determined based on a per center route mile cost and is intended to offset future maintenance costs.

Participation in the program is at the discretion of the LPA's. Routes are selected based on order of submittal and the availability of funds in conjunction with the approval of the Director of Operations.

— MODERNIZATION —
(Improving safety & existing roadways & structures)

The Modernization program category is the second major component of T-WORKS and addresses the LRTP principle of safety. Projects in this program category aim to improve existing roadways and enhance safety by flattening hills, adding shoulders, straightening curves and improving intersections. Under T-WORKS a combination of engineering factors and regional priorities were applied to select projects in this program category. Many of the major projects to be undertaken in the Modernization program were selected at the start of T-WORKS and announced by the Governor of Kansas in June 2011.

The following subcategories are included in this program: Corridor Management (COR), General Safety Improvements (GSI), Highway Lighting (LTG), Interstate Roadway Geometric Improvements (IRI), Non-Interstate Roadway Geometric Improvements (RIM), Resurfacing with Improvements-

Practical Design (1RS), KCC Railroad Crossing Projects (KCC), Miscellaneous for Modernization (MPR), State Safety Projects (SAF) and Scenic Byway (SBW).

Corridor Management
(COR)

The Corridor Management set aside program was created to address the growing need for KDOT, cities, and counties to jointly manage transportation corridors, particularly in high-growth developing areas. To be eligible for these funds, a location must be designated as a planned corridor or area in a District Access Management Plan, have prepared a KDOT-approved planning instrument, and when appropriate, executed an inter-local cooperation agreement. Exceptions are made carefully and on a case-by-case basis.

Projects are solicited on a rolling basis with KDOT's participation typically being limited to the construction phase; however, in some special cases, Corridor Management funds may be used for advance right-of-way acquisition. Additionally, projects funded under the Corridor Management set aside program have a per-project maximum of \$2,000,000.

General Safety Improvements
(GSI)

This is a new subcategory established for general safety improvements at various individual locations across the state. The goal of this subcategory

through a combination of safety analysis and prediction along with KDOT personnel input is to identify and address individual locations throughout the state such as curves, intersections, or short tangent sections with a documented crash history. Additionally, this subcategory is intended to address locations that demonstrate potential safety issues that are not currently being addressed by other KDOT programs or subcategories.

Projects selection is based on the following steps:

- 1) Using initial screening tools lists of locations with potential to be improved are provided to KDOT's district personnel.
- 2) Districts then review the lists and assess their needs to produce a list of up to 15 locations for consideration. At this step, districts are encouraged to seek and utilize public input in this process.
- 3) Staff at KDOT headquarters combine the lists from all the districts and generate the appropriate crash histories and geometric data for all locations listed.
- 4) In consultation with each district, potential countermeasures are considered and locations are prioritized based on potential for safety improvement, available funds, and geographic distribution.
- 5) From the prioritized list, projects are selected and programmed.

Projects selected may include (though are not limited to) signing improvements, intersection improvements,

shoulder improvements, and high-friction surface treatments that provide cost effective solutions to reducing crashes at identified locations. In general projects in this subcategory are funded with federal safety funds at a 90 percent pro rata and 10 percent state funding, except for certain safety improvements as listed in 23 U.S.C. 120 (c) which are eligible for 100 percent federal safety funding. Pilot project selections were made in SFY 2013. Continued project selection is contingent on fund availability and at this time excess fund levels no longer exist in the safety federal group of subcategories to allow funding of further projects. Project selection has been suspended but may resume if funding becomes available in future years.

Highway Lighting (LTG)

Since lighting is beneficial to the safety and operation of the highway system, this subcategory was created in FY 2000 to address highway lighting. The Bureau of Transportation Safety and Technology using the engineering factors of the roadway's volume and nighttime crash history along with consideration of existing regional priorities in the area of proposed projects make project selections. To receive funding projects selected for this program may not be included under another KDOT program.

Projects are selected on an annual basis and scheduled until all available lighting funds are exhausted. Generally, projects are funded with 100 percent fed-

eral funds. (At some locations across the state, lighting is installed by the local public agency (LPA) after obtaining a highway permit. In general, when the LPA elects to install lighting, the LPA is responsible for the cost of installation, maintenance, and operation.)

**Interstate Roadway Geometric
Improvements/ Non-Interstate
Roadway Geometric Improvements
(RIM, IRI)**

Interstate and Non-Interstate Roadway Geometric Improvements projects are major highway improvements that, in addition to pavement rehabilitation or replacement, include wider shoulders or intersection improvements but do not include passing or through lanes or interchanges. Projects within these subcategories are usually funded with a combination of federal and state funds.

Roadway projects are selected using the Non-Interstate and Interstate Priority Formulas, which supply the engineering factors, along with regional priorities in the area of the proposed projects as determined through local consult meetings. The formulas used for the engineering factors were developed by KDOT and Woodward-Clyde Consultants in 1981 and have been modified since to incorporate updated technology, policy direction, and available data. Schematics of the formulas are on the following page. The majority of projects in these subcategories were selected and announced in June 2011 and are in the STIP. Due to budget constraints, several

previously programmed projects in 2017, 2018 and 2019 have been delayed until State Highway Fund revenues improve or new money sources become available to allow their continuation.

**KCC Railroad Crossing
(KCC)**

Prior to 1999, this program was administered by the Kansas Corporation Commission (KCC), since then KDOT has managed the program. This is a state funded program supplemented with railroad company funds. Eligible crossings in this program are crossings that do not meet the federal funded program eligibility requirements, but if updated would improve safety. To be considered for this program, LPAs must submit potential crossings for funding. Projects are programmed, as funds are available in the order requests are made.

**Resurfacing with Improvements
(IRS)**

Resurfacing with Improvements projects are pavement rehabilitation projects with modest shoulder improvements using practical improvement principles. These projects are evaluated and selected at the same time as the Preservation Non-Interstate Resurfacing (1RR) projects and like those projects, selections are on an annual basis. As a result of the yearly selection process, the projects in this group are only in the first year of the STIP.

Non-Interstate Priority Formula (Attributes /Adjustment Factors)											
		Adjustment Factors									
		Accident Rate (See below)	Posted Speed (See below)	Facility Type		Shoulder Type		Route Class (See below)	AADT¹ (See below)		
Attribute (Need Value)	Relative Weight	*	*	Divided	Undivided	Stabilized	Unstabilized	*	*		
Driver Exposure Attributes	No. Of Narrow Structures Per Mile	0.086	0 to 1	0 to 1					0 to 1	0 to 1	
	Shoulder Width	0.089	0 to 1	0 to 1	0.54	1.0	.0607	1.0	0 to 1	0 to 1	
	No. Of SSSD ² Per Mile	0.069	0 to 1	0 to 1					0 to 1	0 to 1	
	Lane Width	0.101	0 to 1	0 to 1	0.5	1.0			0 to 1	0 to 1	
	No. Of SHC ³ Per Mile	0.099	0 to 1	0 to 1					0 to 1	0 to 1	
	Volume/ Capacity (Maximum Default Value = 1.15)	0.091							0 to 1	0 to 1	
	Commercial Traffic (Maximum Default Value = 725)	0.065			.0376	1.0	0.519	1	0 to 1	0 to 1	
	Rideability	0.088							0 to 1	0 to 1	
	Pavement Structural Evaluation (PSE)	0.208							0 to 1	0 to 1	
	Observed Condition	0.104							0 to 1	0 to 1	
Sum of All Weights		1.00									

* Non-Interstate Priority Formula (Adjustment Factors)							
Accident Rate	Adjustment Factor	Posted Speed	Adjustment Factor	Route Class	Adjustment Factor	Capacity – Adjusted AADT⁴	Adjustment Factor
High	1.0	≥55 MPH	1.0	A	1.0	20,000	1.0
Medium	0.858			B	0.9	10,000	0.925
Low	0.734	≤55 MPH	Varies from	C	0.7	6,000	0.895
			0 to 1	D	0.5	2,000	0.865
				E	0.3	0	0.850

Interstate Priority Formula (Attributes / Adjustment Factors)							
		Adjustment Factors					
		Facility Type		Shoulder Type		Route Class (See below)	AADT¹ (See below)
Attribute (Need Value)	Relative Weight	Divided	Undivided	Stabilized	Unstabilized		
Commercial Traffic	0.140	0.376	1.0	0.519	1.0	0 to 1	0 to 1
Rideability	0.189					0 to 1	0 to 1
Pavement Structural Evaluation (PSE)	0.447					0 to 1	0 to 1
Observed Condition	0.224					0 to 1	0 to 1
Sum of All Weights	1.00						

¹ **Average Annual Daily Traffic-** The number of vehicles per day on a road -way segment averaged over one year.

This group is an extension of the 1RR group of projects (described above). The 1RR list developed from the PMS system is further analyzed by KDOT personnel and from the analysis projects are identified as candidates for minor shoulder enhancements and resurfacing. These projects become the 1RS projects for the year and like the 1RR project selection, the number of projects programmed from one year to the next varies. Currently, projects within this subcategory are state funded and will be programmed as the budget allows.

Safety Projects (SAF)

This subcategory provides for improvement of intersections or spot locations where major improvement is not required. The addition of turn lanes, traffic signals, roundabouts, pavement resurfacing, signing, and pavement marking provide cost effective solutions to reducing crashes at eligible locations. The majority of the projects in this subcategory are for improvements along the Kansas State Highway System in areas either within communities or in rural locations.

The Bureau of Transportation Safety and Technology identifies possible projects by conducting studies on the physical and operational characteristics of high-crash locations. In the past these studies were often done at the request of Local Public Authorities (LPAs). Once identified, projects were ranked in descending order by average annual net return. First priority was given to the pro-

ject with the highest average annual net return and with overlapping regional priority.

Generally, funding is expected to continue to be used for high crash locations identified by the Bureau of Transportation Safety and Technology. Whenever feasible safety projects will be combined with existing projects already selected where adding a safety feature like turn lanes to the existing project is practical. In this way the limited safety funds are stretched and used as efficiently as possible. Currently, projects in this subcategory are predominantly 100% state funded with projects selected and scheduled until the available funds are exhausted.

Kansas Byways (SBW)

Currently, in Kansas there are twelve designated byways- nine scenic, two of which are National Scenic Byways and three historic byways. These Byways were established and developed through a grant from FHWA's Scenic /Historic Byways program.

Under Map-21 the majority of the Scenic /Historic Highway program was eliminated from federal funding with only a few specified activities like construction of turnouts, overlooks or viewing areas still qualifying for federal funding. As a result of the change in federal support for this program, the Kansas Byways program is no longer

administered by KDOT. Instead the administration of this program was transferred to the Kansas Department of Wildlife, Parks and Tourism (KDWP&T). Decisions regarding this program including new projects and funding levels now reside with KDWP&T. KDOT cooperates with KDWP&T in matters concerning the scenic byways and participates in funding maintenance of the existing scenic byways for items like kiosk repair and update and informational signage repair and update.

— EXPANSION —
(Adding something new)

T-WORKS's third program category of projects is Expansion. Expansion projects add new lanes or interchanges, enhance driving by relieving congestion and improving access, enhance economic development, and substantially improve safety. The LRTP principles of economic expansion and safety are the focus of projects within this program category. Like the Modernization program many of the major expansion projects were selected and announced by the Governor of Kansas and the State Transportation Secretary in early June 2011.

KDOT's approach for selecting Expansion program projects relied on the new local consultation process, implemented under T-WORKS. This new approach used three factors, rather than relying solely upon engineering formulas like prior transportation programs. The three

factors used to select projects were engineering formulas, regional priorities and economic impacts. In addition to considering these three factors, KDOT also considered the money available through T-WORKS, the money already invested in projects (e.g. design engineering, right of way, etc), and the local funding available.

Projects in the program are grouped into the following subcategories: Advanced Acquisition of ROW (AAR), Economic Development (EDP), Interstate Capacity Improvement (IRC), Intelligent Transportation Systems (ITS), and Non-Interstate Capacity Improvement (RIC).

Advanced Acquisition of ROW
(AAR)

Advanced Acquisition of ROW projects are the use of State of Kansas funds to acquire ROW for highways planned to be converted to urban freeways. There are several benefits from AAR projects:

- 1) Reduces acquisition and transportation infrastructure cost by purchasing before development takes place,
- 2) Reduces delay in roadway projects and disruption to communities,
- 3) Promotes orderly urban growth,
- 4) Creates good will and support for KDOT from communities,
- 5) Promotes voluntary transactions, thus reducing eminent domain costs (monetary and public relations),
- 6) Alleviates hardship to property owners and local governments by addressing the uncertainty about the

impact of proposed long-range projects on the owner's ability to sell or develop property.

KDOT currently requires a one-third match from local communities wishing to use AAR funds to acquire properties. However, a reduced match may be negotiated for communities without the resources to pay the full one-third match or when communities are able to demonstrate that the acquisition has limited benefit to the community. Projects for this subcategory are developed on an as needed basis often in response to proposed private developments and as funding allows.

Economic Development (EDP)

Economic development projects are projects that help spur financial growth. A key priority identified in the LRTP, local consultation meetings and T-WORKS was the need for transportation projects to be linked to the state's economic priorities. To assess the potential impact of proposed economic development projects, KDOT utilizes a computer modeling package- the Transportation Economic Development Impact System (TREDIS). TREDIS estimates the increase in jobs, income, and economic output for a region due to a transportation improvement. In addition to scoring well in the TREDIS analysis, desirable projects are those that align with regional priorities of an area, have the recommendation of KDOT staff and the endorsement of an external Economic Advisory Panel.

To increase flexibility during the 10-year period of T-WORKS, proposed economic development projects will be reviewed and selected on an ongoing basis. In this way a source of funding will be available over the next ten-years as desirable opportunities arise. Generally, these projects are funded using a combination of state and local funding.

Interstate Capacity Improvement & Non-Interstate Capacity Improvement (RIC & IRC)

Interstate and Non-Interstate Capacity Improvement projects are major highway improvements that include passing or additional through lanes or interchanges in addition to pavement rehabilitation or replacement and geometric improvements. Projects in these categories are selected using the updated project selection process launched by KDOT at the start of the T-WORKS program. Refer to the section "Project Selection Pilot" at the beginning of the Project Selection Criteria for a detailed discussion of project selection. Projects in these two subcategories include projects that prior to T-WORKS were in the System Enhancement Bypass, System Enhancement Corridor Improvement and System Enhancement Interchange- Separations Improvement subcategories. Subcategory RIC & IRC projects are usually funded using a combination of federal and state funds. Many of the major projects within these subcategories were selected and programmed in June 2011. A few additional projects may be developed periodically throughout T-WORKS.

Intelligent Transportation Systems (ITS)

The Intelligent Transportation Systems (ITS) program was established to meet the funding needs of ITS/ technology-related projects in Kansas. The funding is available to apply technology such as advanced sensor, computer, electronics, and communications and management strategies to increase the safety and efficiency of the transportation system. The funding is available to both state and local agencies and is not necessarily limited to agencies that are transportation oriented. ITS applications are widespread with applicants from urban areas, rural areas, transit, and commercial vehicle operation and funding consideration is given to all areas.

The Bureau of Transportation Planning, along with the ITS Steering Committee, establishes project rankings based upon:

- 1) project support and integration risks;
- 2) telecommunication considerations;
- 3) design considerations and factors of success;
- 4) funding sources and evaluation consideration;
- 5) cost effectiveness and benefits;
- 6) local funding match percentage;
- 7) economic impact of project;
- 8) commonality with regional priorities in the area of the proposed project.

Projects are solicited annually as funding is available and selected based upon the criteria outlined above. ITS pro-

jects are generally funded with a combination of state and local funds. ITS projects have been selected for SFY 2017. However, due to continued budget constraints annual selection is on a year to year basis and may be delayed as necessary.

— LOCAL CONSTRUCTION— (City and county road improvements)

The fourth program category in T-WORKS is Local Construction. Local Construction projects involve improvements on city or county roads. The work encompassed by this program is varied in nature with some projects being safety-oriented, while others focus on maintaining existing roadways, and still others are smaller, expansion-type projects. The funding within this program of projects is also varied, coming from a combination of state and/or local and/or federal sources. The LRTP principles of safety and preservation are the focus of projects within this program category.

Like the other programs already described, the Local Construction program is grouped into subcategories of similar work type. The subcategories are: HSIP Safety Projects-off system (HAZ), HSIP Safety Projects-on system (HES), KLINK resurfacing projects (K1R), Geometric Improvements for KLINKs (K3R), Local Bridge Transfer (LBT), Local Fund Transfer (LFT), Local Administered projects (LOC), KDOT Administered projects (RES), HSIP Railroad Crossing Protection-on system (RRX), HSIP Railroad Crossing Protection-off

system (RXR), Safe Routes to Schools projects (SRT) and Transportation Enhancement (TEX) projects. Each of these subcategories is described in more detail on the following pages.

City Connecting Link (KLINK) Resurfacing (K1R)

The KLINK Resurfacing Program is a portion of the Kansas Department of Transportation's (KDOT) Local Partnership Program which is intended to improve the roadway surfacing of City ConnectingLinks of the State Highway System. All cities with City Connecting Links of the State Highway System within city limits are eligible for KLINK resurfacing improvements. All City Connecting Links of the State Highway System areeligible except those on the Interstate System and fully controlled access sections on the Freeway System.

The Bureau of Local Projects (BLP) solicits applications for KLINK resurfacing projects for each year in which funding is available.KDOT solicits requests for eligible projects by mailing applications to all eligible cities in the state. Cities requesting projects are encouraged to review the proposed projects with the KDOT District or Area Engineer or designated representative in their area before submitting their applications. Governmental bodies within urbanized areas (with populations greater than 50,000) should also submit copies of their applications to their Metropolitan Planning Organization's (MPO's). If project

applications exceed available funds, projects are prioritized and selected based on pavement survey conditions.

For KLINK projects, KDOT participates in the cost of construction and construction engineering at the rate of 75 percent for cities with a population of less than 10,000 or 50 percent for cities with a population of 10,000 or greater, not to exceed \$300,000 of state funds. A request for SFY 2018 applications is currently underway with final selections anticipated in the fall. The Secretary will announce the approved projects after selections are made.

Federal Safety Projects (HAZ & HES)

These federal-aid projects provide safety improvements on all federal-aid systems. The construction and construction engineering costs of projects in these two subcategories are generally funded with federal safety funds at a 90 percent federal pro rata with 10 percent local or state matching funds, except for certain safety improvements as listed in 23 U.S.C. 120 (c) which are eligible for 100 percent federal funding. The majority of the safety funding is administered by the Bureau of Transportation Safety and Technology and is applied to projects in communities with a population of 5,000 or greater. However, a small portion of funding is reserved for projects on county roads and in cities under a population of 5,000. These projects are administered by the Bureau of Local Projects.

For projects administered by the Bureau of Transportation Safety and Technology, cities are requested to submit four high-crash locations on federal-aid routes within their areas every two years. High-crash locations are those that have 10 or more crashes in a 3 year period. Along with the high-crash locations, cities must also submit their scope of improvement and all necessary supporting data like crash reports and volume counts.

To select projects from the requests received KDOT evaluates the submittals using the following criterion:

- 1) Verify crash history meets minimum requirement- submittals that do not meet the requirement are placed on hold.
- 2) Crash analysis is performed to determine if the proposed scope will effectively address the existing crash pattern. The scope may be modified if the crash pattern data indicates change is warranted. Also, in this step a crash rate and equivalent-property-damage-only accident (EPDO) rate are developed. These ratings are used as tools to rank and prioritize the project submittals received.
- 3) A benefit cost ratio is developed for each project that proceeds from step 1. Benefit cost is a function of reduction factors and crash costs. Benefit cost is another tool used to rank and prioritize projects.

Project submittals are then ranked based upon the crash rates, EPDO rates,

and benefit cost analysis information. Selections are generally made based upon a combination of project ranking and engineering judgment and projects are selected until the available funding is exhausted. Projects selected in this subcategory may be financed with federal and local and/or state funds. However, since 2008 there has been a sharp decline in LPA interest and requests for projects given the economic downturn. As a result when available funding exceeds the number of submittals received, KDOT utilizes the remaining funding in the following ways:

- 1) By pursuing locations KDOT has identified as needing improvement and then providing a state match to the federal funding
- 2) By adding more funding to selected projects as appropriate
- 3) By reevaluating submitted projects with less than 10 crashes in a 3 year period to determine if the crash numbers have increased to the minimum requirement since the last evaluation.

For locations on county roads and other roadways that are administered in KDOT by the Bureau of Local Projects (BLP), projects are selected by LPAs and are submitted to the BLP and the Federal Highway Administration for review and approval. These projects are financed with federal and local funds and projects are selected until available funding is exhausted.

Geometric Improvement (K3R)

The Geometric Improvement (GI) Program is a highway-constructing program intended to improve geometric deficiencies on City Connecting Links (KLINK's). BLP will solicit application for GI projects for each year in which funding is available. A City Connecting Link is a routing within the city limits of a city that connects a state highway through a city; or connects a state highway to a City Connecting Link or another state highway; is a state highway which terminates within such city; connects a state highway with a road or highway under the jurisdiction of the Kansas Turnpike Authority; or begins and ends within a city's limits and is designated as part of the national highway system of Interstate and Defense Highways. Geometric improvements are designed to widen pavements, add or widen shoulders or add needed turning, acceleration, and deceleration lanes.

KDOT participates in funding for projects selected as City Connecting Link Geometric Improvement Projects. The percentage of KDOT project participation is dependent upon the sponsor city population with greater KDOT participation for smaller city populations. (KDOT participation ranges from 75% to 100% of participating project costs.) However, the maximum state participation toward a single project is limited to \$1,000,000.

Projects are solicited and reviewed by KDOT's Bureau of Local Projects.

Before an application is submitted, cities are encouraged to review the proposed projects with the KDOT District or Area Engineer. Governmental bodies within urbanized area (populations greater than 50,000) should also submit copies of their applications to their Metropolitan Planning Organization (MPO). After submission of the application, BLP will review the proposed project's scope and estimated cost.

The solicitation for SFY 2019 projects is currently underway with final selections anticipated to be made in the fall. The Secretary will announce the approved projects once the selection has been made.

Local Bridge Improvements (LBT)

The Local Bridge Improvement (LBT) Program is a new program initiated in 2014 that provides funds to local public authorities (LPA) for the rehabilitation or replacement of deficient locally-owned bridges. The focus of this program is to reduce the number of deficient bridges in the state in a cost effective manner. This program targets bridges with span length of 50 feet or less, which comprise more than half of all deficient bridges in the state. The Bureau of Local Projects (BLP) will solicit application for LBT projects for each year in which funding is available with the first solicitation occurring in 2014. Eligible bridges will be on very low-volume roads, have a span of 50 feet or less and be classified as structurally deficient or functionally obsolete. Longer bridges on higher volume roads

are eligible, but are limited to the same state funding amounts.

KDOT has currently created a one-time set aside of \$10 million for this program. A decision whether to continue the program and provide additional funds will be made at a future date. Projects will be funded with state and local funding with the local share set at a 10-percent match of any state funds expended on a project. The maximum amount of state dollars that will be provided for an individual project is \$120,000. If the LPA agrees to close and remove another bridge on their system, the maximum state dollars will be increased to \$160,000.

The program is competitive and projects are selected through an application process. Once a project is selected for funding, KDOT and the LPA will enter into an agreement for the project. All project development and administration is the responsibility of the LPA. Projects must be let to contract. After the announcement of funded projects, the LPA must advance the project through letting within 24 months. For further information about the LBT program, contact the KDOT Bureau of Local Projects at 785-296-3861. Or visit KDOT's BLP website at <http://www.ksdot.org/bureaus/burLocalProj/default.asp>

**Local Construction
Locally and State Administered
(LOC,RES, LFT)**

The projects in these subcategories

are varied and may have elements of each of the three state programs-preservation, modernization and expansion, but all are performed on city and county roads. Local construction projects are divided into three subcategories: LOC, for those projects administered by the LPA with federal funding; RES, for those projects with federal funding administered by KDOT on behalf of the LPA and LFT for those projects developed without federal funding using instead the Federal Fund Exchange Program where the LPA has exchanged federal dollars for state dollars to administer local transportation projects.

In order for LPAs to qualify for LOC subcategory funding and the administration of their own federally funded non-National Highway System (Non-NHS) projects, they must meet minimum requirements established by FHWA and KDOT. These requirements are intended to ensure that projects are developed in accordance with all applicable laws, regulations, criteria, and accepted engineering practices.

KDOT administered projects, which are grouped into subcategory RES, are similar in nature to locally administered projects with the key difference being that the State lets the project to construction and oversees the work on behalf of the LPAs. Local construction projects in the LOC and RES subcategories are funded with a combination of federal and local funding with a usual funding ratio of 80 percent federal funds and 20 percent local funds. Since the LOC and RES subcategory of projects are federally funded,

these projects are listed in the STIP or in the applicable TIP when an MPO area is involved.

Projects in the third subcategory, LFT, are funded with local and state funds, with the state funds coming from an exchange of LPA federal obligation for the state funds. While the LFT subcategory is included in this discussion, the subcategory is not part of KDOT's Local Construction program and does not use federal funds. As a result, LFT projects are not included in the STIP. LFT subcategory projects are referenced in this document to explain the recent decrease in the number of RES and LOC projects undertaken and the corresponding decrease in LPA projects present in the STIP. Most LPAs have elected to use the LFT program to fund the repairs on city and county roads. For more information concerning the Federal Fund Exchange Program, refer to the Program Finance section of this narrative or visit KDOT's website at <http://www.ksdot.org/bureaus/burLocalPr oj/default.asp>

Regardless of the funding used for repairs, LPAs select all of their projects in a similar manner using a number of criteria. Projects are often proposed because of safety concerns, the need to maintain existing facilities or structures, and community needs fueled by growth and other factors. To assist in their selection process, KDOT bridge inspection data and other management systems are available to locals to use in their decision-making processes.

The LPA is responsible for public involvement in the selection/prioritization process of projects with the public involvement for each project being determined by the complexity of the project scope. At a minimum, public involvement should include a public notice indicating when a governing body will be making a decision on reviewing needs, selecting projects and setting priorities for federal aid projects. As each project selected develops, additional public involvement may be warranted. The public involvement in the project development process will be in accordance with KDOT's publication "Sharing the Future, Public Involvement in the Kansas Transportation System".

After the selection and prioritization process is completed, projects are listed by priority and programmed based upon the availability of funds. For federally funded projects, these lists are the local entities' portion of the STIP and identify their prioritized road or bridge construction projects. These projects are incorporated into the STIP or TIPs as appropriate. With the passage of the FAST Act, all federally funded projects in these subcategories will continue to be selected as the act provides secure funding for the years of this STIP.

Railroad/Highway Crossing Protection (RRX & RXR)

This federal-aid program funds protective device installation and hazard elimination at railroad/highway grade crossings on public roads. Federal-aid

finances up to 100 percent of the cost of these projects. In accordance with Section 130 of the 1973 Federal-aid Highway Act, KDOT has established a state rail crossing inventory and formula to prioritize all 6,200 at-grade public crossings in Kansas.

The priority formula “hazard index” is used to rate the relative hazard potential for all crossings and is based on highway traffic, train traffic, and a warning device factors. Each year a number of the highest ranked crossings that have not been addressed in prior programs are selected for review. A preliminary review of the crossings is conducted to verify crossing inventory information.

**Priority Formula For
Railroad Crossings**

$$\text{Hazard Index} = \text{AADT} \times \text{T} \times \text{W}$$

Where

AADT = Average Annual Daily Traffic

T = Average Trains per day

W = 0.1 for gates, 0.6 for flashing lights & 1.0 for cross bucks

Crossings from this list that pass the preliminary review are scheduled for on-site diagnostic reviews. The diagnostic review team consists of KDOT, railroad, and local government staff. This team makes recommendations for each crossing as to type of warning system, crossing surface work, approach roadway improvements, drainage improvements, and brush and timber clearing. A rough

cost estimate of the recommendations is developed for each crossing.

The on-site review is sent to the local government officials who have maintenance responsibilities for the highway or roadway. When crossing projects receive funding commitments from local government, railroad, and the State, a project implementation procedure is started that leads to improvements at the crossing. With the implementation of prior federal transportation acts, KDOT now utilizes 100 percent federal funding for these railroad/highway crossing safety projects.

In conjunction with the United States Department of Transportation’s national highway/railroad crossing safety initiatives, KDOT is also addressing railroad corridor highway/railroad crossing safety projects. For corridor project approval there must be a reasonable number of highway/railroad crossing closures. The highest priority highway /railroad crossings in the corridor are improved with active flashing light and gate signal systems. Projects in these two subcategories are reviewed and selected on an annual basis. Currently, projects for 2017 have been selected and programmed. However, a few additional projects may still be programmed throughout the year and these projects, if any, will be amended to the STIP as programmed.

**Safe Routes to Schools
(SRT)**

The federal funding changes im-

plemented under MAP-21 where the SRTS (Safe Route to Schools) program along with several other stand-alone programs were merged into the Transportation Alternative program (TA) is continued in the FAST Act. However, in the FAST Act the TA program itself has been merged into the STBG program as a set-aside. All TA funded projects regardless of project type are funded at an 80 percent federal fund and 20 percent local match ratio with the federal share being capped.

The focus of the SRTS has not changed with the merger into the TA set-aside. The primary purpose for projects in this subcategory is to increase the number of school children who walk or bike to school. SRTS provides reimbursements to local public authorities and school districts for projects or activities that will make walking and bicycling to school safe, enjoyable, and routine. In this subcategory, projects are selected by soliciting applications and then selecting projects from the applications submitted. To qualify for consideration applications must meet one of the following three criteria:

- 1) Project provides for plan development of safe routes to schools, with possible future funding to implement the plan. A SRTS Plan is prerequisite for future infrastructure funding consideration.
- 2) Project provides for infrastructure such as improvements to pedestrian and bicycle crossings, sidewalks, traffic calming, on- and off-street

bicycle facilities, secure bicycle parking, and traffic diversions.

- 3) Project provides for non-infrastructure activities above and beyond those activities covered in the other two.

With the passage of the federal program the FAST Act, applications will be solicited from local public authorities and school districts in the fall of 2016. Potential projects and activities will be evaluated throughout the winter and selected in the spring of 2017 (SFY 2017). Projects programmed from this selection will be amended to the FFY 2017-2020 STIP at that time.

Transportation Enhancement (TEX)

The federal funding changes implemented under MAP-21 to this program remain intact with the FAST Act. Transportation Enhancement (TE) remains merged into the Transportation Alternative (TA) program. However, in the FAST Act the TA program itself has been merged into the STBG program as a set-aside. Projects in this subcategory must correspond with one of the following criteria:

- 1) Project provides environmental mitigation related to storm-water management or reduction in wildlife mortality from vehicles,
- 2) Project provides construction of pedestrian and bicycle facilities,

-
- 3) Project provides conversion and use of abandoned railroad corridors for trails,
 - 4) Project provides construction of turnouts, overlooks and viewing areas, (formerly part of the now discontinued federal Scenic Byways program)
 - 5) Project provides community improvement activities including inventory, control or removal of outdoor advertising; historic preservation and rehabilitation of historic transportation facilities; vegetation management practices and archaeological activities relating to impacts from the execution of a transportation project.

As part of the TA set aside program projects in this subcategory are funded based on an 80 percent federal/20 percent local match and applicants need to be able to demonstrate their financial ability to meet their obligation. The federal funds awarded are capped for each project selected. Projects selected that do not meet the deadline for entry into the STIP document will be amended to the STIP using the amendment process in place.