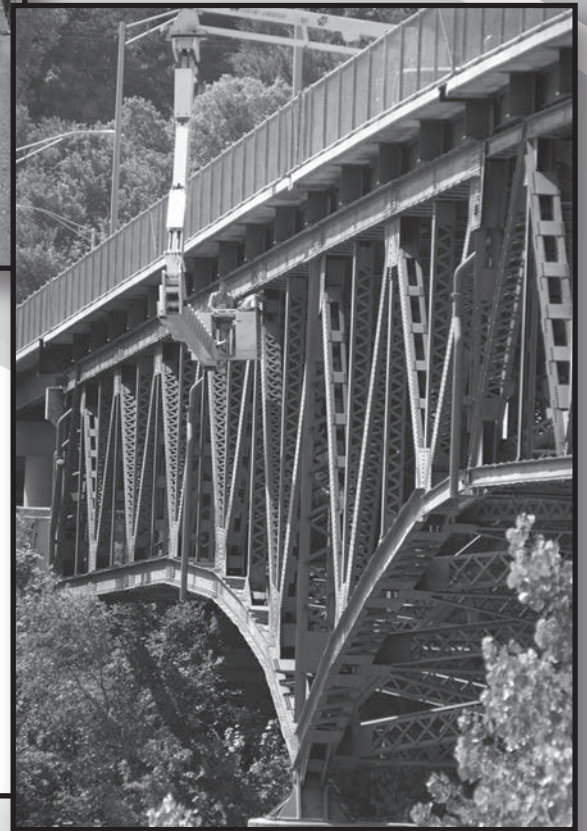


# Project Selection Criteria



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## PROJECT SELECTION CRITERIA

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Projects in the STIP are created from various levels of government (city, county, and state) using many different processes and criteria. The criteria described in this section are those used by KDOT for the projects currently programmed in FFY 2021-2024 and listed in this document in Appendix A- the Project Index. At the close of the 2020 State legislative session, the legislature passed a new transportation program the Eisenhower Legacy Transportation Program (ELTP/IKE) that is designed to be flexible and responsive to shifting needs in Kansas transportation. The new state transportation program, ELTP, is in effect from July 1, 2020, the beginning of state fiscal year (SFY) 2021 through (SFY) 2030 which ends June 30, 2030. The first focus of the new program is to bring to construction the remaining T-WORKS projects that were delayed. Work has resumed on these projects with most in the final development stage with final design, right of way acquisitions and utility relocations underway moving the projects towards letting and construction.

Along with the delayed T-WORKS projects, the ELTP continues to emphasize preservation of the existing State system with funding levels in the ELTP for projects that address existing

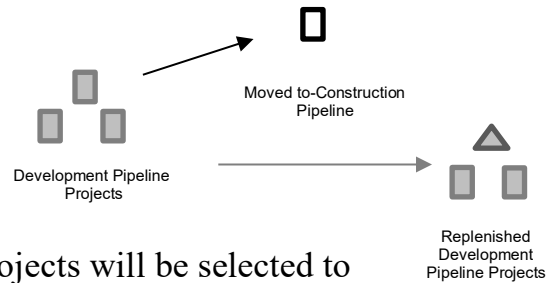
roadways and bridges infrastructure set for replacement at the rate it is used. This renewed dedication to our state system will safeguard our existing system and help move the State in a positive direction towards meeting the recently adopted federal preservation performance measures (for more information, refer to the Performance Measure narrative) Since preservation projects are usually smaller in scale and generally selected on a yearly basis, most preservation related projects only appear in the first year of the STIP project index. For this STIP document, selected preservation projects that are anticipated to let to construction through November have been captured. The remaining federally funded preservation projects remaining to be developed, will be added to the STIP through the amendment process.

Another aspect of the ELTP program is funding for projects in the Modernization and Expansion programs. Projects from these programs will be selected for construction from a POOL of development projects. Initially, 40 development pipeline projects from the Modernization and Expansion programs have been selected and announced. These projects are approved for the preliminary stages of development activities

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like surveys, early environmental and design work. Of the forty projects selected, some were amended to the FY 2020-2023 STIP via the July amendment and are already obligated while others are within Metropolitan Planning Organization (MPO) regions and steps have been taken to add these projects to the appropriate TIPS. The remaining projects have either been captured in this STIP document or will be amended to this STIP using the amendment process in place upon their creation.

While these projects are not committed for construction, they do provide a pool of projects from which KDOT may make selections to advance projects to the next stages of development. In the future when the initial stage of development is completed, some of these pool projects will be selected to continue to the final design, right of way, utility relocation stage and eventually to the construction stage. Projects will be advanced to these next stages of development to the level available revenues allow. Additionally, every two years, local consult meetings will be conducted across the state and together with our local partners new projects will be selected and added to the development pipeline. While this will result in more projects in the POOL than existing funding will allow to be constructed, this method ensures a steady supply of projects is available for advancement to construction with no lag between development to the construction phase allowing for better leverage of federal funds and a more efficient use of resources.



Projects will be selected to advance from the Pool of prospective projects based upon need and other factors, like local support. This will ensure that the projects with the greatest need and support are selected and that limited resources are used efficiently and effectively.

Along with addressing prior projects and the established Core programs in the ELTP new categories were created to address newly identified needs that emerged from the local consult dialogues through meetings held in the summer and fall of 2019. New categories were established under the ELTP to address emerging concerns like expanding the emphasis on safety through preservation plus, rural broadband expansion, providing for transportation technology and providing safer new drivers through the Driver's Education Scholarship Fund. At the time the STIP document was prepared, the details of these beneficial new categories and how and where each will be implemented within the KDOT's program structure has not been fully established. It is possible that most of the projects for these new subcategories will not be captured by the STIP document and its list of projects as the new subcategories are not directly road related and will not come under the province of this document and the United States Code (USC)

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Title 23. Additionally, most of these subcategories will not be federally fund eligible. When the provisions of each of these new subcategories has been established, those that are a part of the core program and covered by this document, will be added to this discussion through the amendment process.

Finally, the ELTP continues to provide provisions for other transportation modes in the state including rail, air and transit. While other modes are very valuable and bring many benefits to Kansans, with the exception of transit, they are not part of the requirements codified in the USC Title 23 which is the role of this STIP to address. Of the other modes, only transit is covered under USC Title 23. Transit information in this document is provided in a Transit narrative and information is provided to the level required by this code and by the Federal Transit Administration (FTA).

Even with the passage of the ELTP, KDOT recognizes that many of the funding streams for the highway program, are not guaranteed for only highway use. Some of the revenue streams that KDOT relies on for the State highways and the new transportation program are at the discretion of the Legislature- specifically the Sales & Compensating taxes. In the prior program, T-WORKS, reductions in this source and in the total funding available to KDOT impacted the program that KDOT was able to deliver and the condition that State Highways were able to be maintained. Under the new program, the

ELTP, these uncertainties in funding remain as the distribution of the Sales & Compensating taxes remain at the discretion of the legislature. However, the 2020 legislature session moved in a positive direction by enacting the ELTP and by providing funding from multiple sources- dedicated funding, funding that is at the discretion of the legislature and through additional bonding. While bonding is anticipated for a portion of the ELTP, it is not anticipated to be implemented in the years of this STIP and is, therefore, not estimated in the Cash Flow included in the Finance narrative section of this document.

Although funding streams using only dedicated sources was not secured for the ELTP, the manner in which types of projects are funded has been modified from past transportation programs in an effort to reduce the impact of uncertain funding and minimize decline in the existing transportation system. In the ELTP, KDOT will use “protected” sources of funding like the gas tax and federal funding for ongoing preservation of the current system and revenues from less secure sources like the Sales & Compensating taxes to fund the higher profile projects from program categories like Modernization and Expansion. While projects from these two program categories may contribute to the health of the system, they are not critical to preserving the health. Additionally, under the new transportation program KDOT will leverage partnerships with local communities to help maintain the transportation system.

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While the approval of the Eisenhower Legacy Transportation Program (ELTP/IKE) at the state level is a great benefit to transportation in Kansas, at the federal level funding is uncertain as the federal transportation program, the FAST Act, officially expires in September 2020 with the end of the federal fiscal year. While a new program is in development at the federal level, the program has not yet been enacted. As a result, the magnitude of the next state program will be affected by the potential delay in federal funding. Some adjustments in how projects are managed and funded may need to be taken with an increased use of the Advance Construction mechanism to allow projects to proceed while waiting for a transportation program at the federal level to be enacted. Along with this uncertainty is the strain that the COVID-19 pandemic is placing on State and Federal resources. These uncertainties in resources make planning more difficult.

Until a new federal transportation program is in place alongside the state program and the economic impacts from COVID-19 are known, KDOT will continue the development of pipeline projects with the expectation that funding levels at the State and Federal level will be available when the projects are ready, or nearly ready, for the construction phases with the understanding that the number of projects continued to construction may potentially be curtailed by these uncertainties. For planning purposes with consideration of these uncertainties, this STIP document has been developed estimating federal funding at

2020 levels, the last year of the FAST Act, for the entire four years of this STIP. Combined state and anticipated federal sources of revenue allow for continued pool development projects with some projects letting to construction as available revenues allow.

To facilitate program management under the ELTP, KDOT categorizes road and bridge construction projects into four broad groups or core programs: Preservation, Modernization, Expansion and Local Construction. Under the ELTP, the Preservation program projects will continue to be selected on an annual basis through a yearly review process and federally funded projects from the Preservation program not captured in the initial STIP document will be amended using the amendment process in place. Projects from the Modernization and Expansion programs will progress through a development pipeline. Forty projects for this pipeline have been announced and are approved for the development stage. Additionally, projects will be added to the development pipeline through the local consult process on a two-year schedule. Each year some projects will be advanced from the POOL of development projects to construction (letting) for the upcoming 2-year period as the budget allows. Through this rolling 2-year approach, KDOT maintains increased flexibility to respond to economic pressures or opportunities as they arise by selecting projects to advance to construction as funding allows while maintaining a pool of projects ready to advance if the

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opportunity arises. Maintaining this pool of development projects increases efficiency and ensures that there is very little lag time between funds becoming available and a project moving to letting for construction.

For projects in this STIP the 2-year rolling selection process means that many of the projects in the first two years of the STIP have been selected and programmed for construction while many of the projects in the latter two years are yet to be selected and are in the design development pipeline. The FFY 2021-2024 projects listed in this STIP in Appendix A are those projects that have been evaluated and programmed to proceed in one or more phases of work and are anticipated to obligate in one or more of the years of the STIP. However, not all of the projects listed are approved for construction at this time. Additionally, projects with federal funding that have an annual selection process, such as railroad crossing and 1R projects, are partially represented in the STIP document because of timing differences between the development period of the STIP and the project selection period. Projects with federal funds that meet the criteria of USC Title 23 or projects that are regionally significant that move into or are selected and developed after the preparation of the STIP document will be added to the STIP through amendment as described in the “STIP Revision Procedures” (<http://www.ksdot.org/Assets/wwwksdotorg/2010-Approved-STIP-Revision-Procedures.pdf>).

In addition to the ELTP program and the requirements of the federal transportation interim acts, the STIP program is guided by the following three principles of the Long-Range Transportation Plan (LRTP) adopted by Kansas in 2008-preserving the transportation system, making travel safer, and supporting economic growth. These principles were developed in cooperation with hundreds of transportation stakeholders during an 18-month consultation process. In addition to setting the agency’s areas of focus the LRTP outlines new and current infrastructure needs. To augment the LRTP and as directed by FHWA as part of their newly adopted performance-based data driven approach to asset management and funding allocation, Kansas developed a Transportation Asset Management Plan (TAMP) in 2018. The TAMP assesses current infrastructure and the funding level and work effort required to maintain the current infrastructure in acceptable condition. Based on information gleaned from the TAMP, the agency, stakeholders and legislature worked together to ensure that as one of its key goals the newly enacted ELTP provides funding levels for replacement of infrastructure at the rate that infrastructure is used to ensure that the current State system is maintained in acceptable condition. Together, the LRTP and TAMP assist KDOT in their management decisions providing the framework for KDOT’s day-to-day decision-making processes and are embodied by the ELTP, and the projects selected and programmed in this STIP.

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## — PROJECT SELECTION— (An Expanded Process)

The ELTP continues the project selection method established under T-WORKS with engineering factors playing a key role supplemented with economic impact evaluation and/or local input in some KDOT programs. 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 relied primarily upon priority formulas or other data-driven processes to select projects for inclusion in transportation programs. While this system worked well to select preservation-type projects, it was not as effective for selecting projects from the modernization and expansion programs. Additionally, since only engineering factors were considered in the priority formulas, other considerations that stakeholders and Kansans felt were important

were not factored into the selection process. Since T-WORKS and continuing in the ELTP, economic impact evaluation and/or local input are used along with engineering factors in project selections for Modernization and Expansion. Below is a chart showing the project selection criteria for the Core programs with the factor weights applied for scoring and selecting projects.

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

Evaluation of potential economic impact relies on computer modeling that estimates the increase in jobs, income and economic output for a region due to a transportation improvement. The state LRTP, MPO plans, Safety plans, local entity plans, local consult meetings and the TAMP are all tools used by KDOT to determine regional priorities and economic impacts. By employing the project selection criteria, KDOT will ensure that selected projects meet the LRTP guiding principles, the TAMP guidelines and meet the requirements of the ELTP legislation. Together these tools aid KDOT in maintaining existing infrastructure at acceptable levels and in making sound decisions about future infrastructure needs and enable project selections that meet both goals.

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The fourth core program, the Local Construction program, is concerned with roads at the local level in counties and cities across the State and has a selection process of its own. These “local” projects are selected and developed by local public authorities (LPAs). The process is coordinated at KDOT by the Bureau of Local Projects (BLP) and is discussed in greater detail in the Local Construction Program located later in this narrative section.

**— PRESERVATION —**  
(Taking care of what we have)

The first core program category in the ELTP 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 future date will be significantly greater than the cost of timely maintenance. Projects within this category address maintenance of the existing system and relate to the first principle of the LRTP and are the focus of the TAMP. As a step towards safeguarding the investment already made in existing infrastructure, the newly enacted ELTP provides for funding levels for the replacement of infrastructure at the rate it is used.

Projects within the Preservation program are further divided into subcategories, that 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 (1RR), Signing (SOS), Pavement Marking (PMR), Railroad Crossing Surfacing (RRS), 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 the Preservation program rely entirely on engineering factors and selections in most subcategories are made annually. New to this program is the Preservation Plus subcategory created in the newly enacted ELTP. At the time this document was prepared, the details of this new subcategory were not finalized. The information concerning Preservation Plus will be updated when available and will be added to this document through the amendment process.

**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



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work includes overlaying concrete decks; re-placing or resetting expansion joints; resetting bearing devices; repairing abutments, piers, or girders; and repairing damage from external sources. Currently, all projects within Culvert Repair (BCR) are state funded and selection is on an annual basis. Projects in the Bridge Repair (BSR) subcategory are funded either solely with state funds or when qualifying with a combination of federal and state funds. Like Culvert Repairs, Bridge Repair projects are selected on an annual basis. The work performed in projects in these subcategories assist KDOT in attainment of the federal bridge infrastructure performance targets. Those bridge repair projects funded with federal funding programmed after the development of this STIP document will be amended using the procedures in place.

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 Materials 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 Division of Program and Project Management for review to confirm that the candidate struc-

tures 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. Projects in this subcategory aid in reaching the federal bridge infrastructure targets.

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 Division 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 and aid in the attainment of the federal bridge infrastructure performance targets.

Bridge projects are selected using the Bridge Priority Formula- a schematic is provided below this discussion. The formula was developed by KDOT and Woodward-Clyde Consultants in 1981 and has been revised since then to incorporate updated technology, policy direction, other available data and district/local input. Bridge conditions are determined using this formula and those bridge projects with higher relative ratings are moved to the top of the priority list to be addressed first within available funding and scheduling considerations.

<b>Bridge Priority Formula</b>		
<b>(Attributes / Adjustment Factors)</b>		
		<b>Adjustment Factors</b>
<b>Attribute (Need Value)</b>	<b>Rel. Weight</b>	<b>AADT<sup>1</sup></b>
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
<b>Sum of All Weights</b>	<b>1.00</b>	
<small><sup>1</sup> Average Annual Daily Traffic- The number of vehicles per day on a roadway segment averaged over one.</small>		

**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 is not 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 funded either solely with state funds or when qualifying with a combination of federal and state funds and aid in the attainment of the federal bridge infrastructure performance targets.

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

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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 Division 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 is programmed within the limits of available funding.

### **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 and aid in the attainment of the federal road infrastructure performance targets.

Selection is based on priority as seen from a statewide perspective. Basic criteria for contract maintenance projects are: 1) inability to perform necessary actions 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 within the limits of available funding.

### **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 involve pavement rehabilitation or replacement without the widening of shoulders, the addition of 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.

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These two subcategories assist in attainment of both road and bridge infrastructure federal performance targets. (Bridge targets are aided because projects in these subcategories while driven by road conditions primarily, perform work on associated bridges in the given area.) Projects programmed in these subcategories after the development of this STIP document will be added using the amendment procedures in place.

### **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. Resurfacing aids in maintaining road condition and as such helps in the attainment of the federal road infrastructure performance targets. ~~This~~ Generally, projects in this subcategory are state funded but occasionally projects qualify for federal funding and are programmed with a combination of federal and state funds.

### **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. For KDOT as identified in the ELTP, preservation of our road system is a priority and as such a significant portion of the available 2021 funding is focused on this subcategory. Projects in this subcategory are funded with a combination of federal and state funds, except for projects that do not meet eligibility requirements for federal funding. These projects are then funded with state funds only. Federally funded projects in this subcategory that are programmed after the development of this STIP document will be amended using the procedures in

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place. Resurfacing aids in maintaining road condition and as such helps in the attainment of the federal road infrastructure performance targets.

### **Pavement Marking (PMR)**

This subcategory was established in 1996 to address pavement marking necessary from a then newly passed federal requirement 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 in this subcategory are generally funded with 100 percent Highway Safety Improvement Program (HSIP) federal funds and selected annually. PMR projects help to address the Strategic Highway Safety Plan (SHSP) goal of decreasing roadway departures and are referenced specifically in the SHSP, Appendix A. By helping to lower roadway departures, this subcategory of projects contributes to KDOT's effort to improve overall roadway safety

and to meet the newly established federal safety performance measure targets. (For more information about performance measures refer to the performance measure narrative section of this document.)

### **Railroad Crossing Surfacing (RRS)**

The Railroad 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 and the projects achieved in this subcategory support improved roadway safety and aid in reaching the federal safety performance targets.

### **Signing (SOS)**

Established in 1996, this subcategory addresses necessary sign replacements on the State Highway System in

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response to a then, new federal requirement 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 signs that were replaced within seven years of the scheduled date of the replacement project. If project selection occurs after the STIP preparation period, new projects will be amended to the STIP using the amendment procedures in place.

Projects are selected annually and are generally funded with 100 percent HSIP federal funds. The signing projects contribute to the SHSP goals of reduction in roadway departures and increased intersection safety and are referenced specifically in the SHSP, Appendix A. The SOS subcategory of projects contribute to increased overall roadway safety and help in KDOT's effort to meet the newly established federal safety performance measure targets.

### **Signing & Lighting Repair & Replacement (SLR)**

This subcategory was 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.

Structure inspections are performed every four years with the most recent inspection performed in SFY 2017 and the next inspection anticipated to occur in SFY 2021. 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 the allotted funds allow. By aiding intersection safety, projects in this subcategory contribute to KDOT's effort to improve overall roadway safety in Kansas and to meeting the federal safety performance measure targets.

### **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 transfer results in state route reduction, thereby reducing state maintenance costs. Candidates for the SRR program include stub routes, spur routes and busi-

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ness 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 condition 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 ELTP 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 the ELTP a combination of engineering factors and regional priorities were applied to select projects for this program category. Fourteen Modernization projects were announced in June 2020 for the ELTP. The projects are authorized for the PE work phase only and are design pipeline projects that are not currently authorized for construction. In the next 2-years, some projects from this design Pool will be selected and advanced to the

construction development phase. Projects will be selected based on need, local support and available funding. There is not a specified list of Modernization projects to be constructed during the ELTP and the number of Modernization projects that go forward will vary from year to year.

Projects in the Modernization program do improve overall roadway condition and thus contribute to the safety of roads and aid in KDOT's attainment of their newly established federal safety performance and road and bridge infrastructure condition targets.

The subcategories included in this program are: Corridor Management (COR), General Safety Improvements (GSI), Guardrail Improvements (GFU), Highway Lighting (LTG), Innovative Connected Technologies (ICT), Interstate Roadway Geometric Improvements (IRE), Non-Interstate Roadway Geometric Improvements (RIM), Resurfacing with Improvements-Practical Design (IRS), KCC Railroad Crossing Projects (KCC), Miscellaneous for Modernization (MPR), Scenic Byway (SBW), State Safety Projects (SAF), and the Strategic Safety Improvement Program (SSI).

**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 de-

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veloping 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 inner-local cooperation agreement. Exceptions are made carefully and on-a- case-by-case basis. Projects in this subcategory help the State of Kansas in attaining their safety performance measure targets.

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 M.

### **General Safety Improvements (GSI)**

This subcategory was 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.

Selected projects 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, funding for this subcategory is with the HSIP federal safety funds at a 90 percent federal and 10 percent state funding pro rata for most projects, except for certain safety improvements as listed in 23 U.S.C. 120 (c) which are eligible for 100 percent federal safety funding.

Projects in this subcategory are developed as the opportunity arises and are programmed intermittently. These projects when undertaken often contribute to the SHSP goals of reduction in roadway departures and/ or increased intersection safety and are referenced specifically in the SHSP, Appendix A. The GSI subcategory of projects contribute to increased overall roadway safety and help in KDOT’s effort to meet the newly established federal safety performance measure targets.

### **Guardrail Improvements (GFU)**

This subcategory was re-established in FY 2020, for the purpose of addressing blunt end guardrail removal or replacement on the National Highway System (NHS) in Kansas. Blunt end guardrails on the NHS are anticipated to be removed or replaced over a period of six years. Generally, projects will be



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funded with federal funds and will contribute to increased overall roadway safety and help KDOT's effort to meet their established federal safety performance measure targets.

### **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, nighttime crash history along with the existing regional priorities in the area of the proposed project to 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 are usually funded with 100 percent HSIP federal funds. Lighting projects help to address the Strategic Highway Safety Plan (SHSP) goal of improving intersection safety and are referenced specifically in the SHSP, Appendix A. By aiding intersection safety, projects in this subcategory contribute to KDOT's effort to improve overall roadway safety in Kansas and to meeting the newly established federal safety performance measure targets.

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.

### **Innovative Connected Technologies (ICT)**

Innovative Connected Technologies (ICT) is a forward-looking subcategory created for the study, evaluation and integration of newly emerging technologies that affect or will affect Kansas roadways in the future. Projects in this subcategory will be varied with most selections focused on the modernization of the State Highway System (SHS) for the adaptation of the system to the vehicles traveling on them.

Part of the SHS adaptation will be accomplished through projects that deploy Connected Vehicle Infrastructure (CVI) along our State Highway System. CVI prepares roadways for deployment of technologies like Vehicle-to-X (V2X) that allow vehicles to communicate with their surroundings and the Internet of Things (IoT) that allow for the internet connectivity capabilities of objects like roads, traffic signals, and signs. This interconnectivity will allow these objects to interact with other connected devices. Other projects in this subcategory will be research oriented for the evaluation of current and future technologies to assess integration, capabilities, and limitations. These research projects may be performed in-house, be awarded to consultants or be projects managed and developed by University staff depending on

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which choice is the best fit to meet the needs and scope of the project.

Funding for this program is currently with state funds and \$3M per year has been designated in the ELTP to be available for projects in this subcategory. Applications for project considerations will be available in the summer of 2020.

As this program subcategory continues to evolve it is anticipated that there will be multiple funding sources that may include federal, state, local and even private sources. Additionally, where appropriate, funds from this subcategory may be applied jointly with another subcategory where the goals of both align and cost benefits are attained by the combined scope. Since this is a new subcategory, immediate impact of the projects from this subcategory on performance measures will be limited. However, future projects from this subcategory should contribute to KDOT's effort to improve overall roadway safety and to improve roads and bridges in Kansas contributing to KDOT's attainment of the newly established federal safety performance measure targets and infrastructure targets for roads and bridges.

**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. The work accomplished in the projects from this subcategory impact KDOT's attainment both safety and road and bridge infrastructure performance targets.

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 formula combines road attributes with weighting factors and adjustment factors to determine a needs-based score for each section of pavement evaluated. A high score in this evaluation is a factor that contributes to a section of pavement being selected for pavement rehabilitation or replacement. Projects for construction from these subcategories will be selected on a rolling 2-year basis and will be advanced from the development pipeline. Some projects from these subcategories were part of the first 40 ELTP announced design pipeline projects.

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)	AADT <sup>1</sup> (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 <sup>2</sup> 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 <sup>3</sup> 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	
<b>Sum of All Weights</b>	<b>1.00</b>									

* Non-Interstate Priority Formula (Adjustment Factors)							
Accident Rate	Adjustment Factor	Posted Speed	Adjustment Factor	Route Class	Adjustment Factor	Capacity – Adjusted AADT <sup>4</sup>	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)	AADT <sup>1</sup> (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
<b>Sum of All Weights</b>	<b>1.00</b>						

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

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### **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 and as such help in attainment of the safety performance target. To be considered for this program, LPAs must submit potential crossings for funding. Projects are programmed in the order requests are made.

### **Miscellaneous for Modernization (MPR)**

This subcategory is reserved for atypical modernization projects that occasionally arise. The scopes of work for projects in this subcategory do not fit into the standard modernization subcategories. However, the scope of work is related to the modernization program and the desire is to reflect this by using the modernization program funding. These projects are predominantly state funded and since the projects are non-routine in nature, they are programmed on a need only basis. Projects from this group aid in reaching the safety performance measure targets.

### **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. Since these projects are selected on a yearly basis, the projects in this group are only in the first year of the STIP.

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 IRS projects for the year and like the 1RR project selection, the number of projects programmed from one year to the next fluctuates. Currently, projects within this subcategory are state funded and are programmed on a need basis. Projects in this subcategory help the State of Kansas move towards the recently established road infrastructure and safety performance measure targets.

### **Safety (SAF)**

This subcategory provides for improvement of intersections or spot locations where major improvement is not required. The addition of turn lanes traffic

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signals, roundabouts, pavement resurfacing, signing, and pavement marking provide cost effective solutions to reducing crashes at eligible locations. Most 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 (BTS&T) identifies possible projects by conducting studies on the physical and operational characteristics of high-crash locations. Identified, projects are ranked in descending order by average annual net return and priority is given to the project 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 BTS&T. 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 usually state funded. However, occasionally projects are eligible for federal HSIP funding. Safety projects included in this subcategory assist KDOT in meeting their newly established federal safety performance measure targets.

### **Strategic Safety Improvement Program (SSI)**

Newly created in state fiscal year

2020 and continued in the ELTP, this program focuses on larger projects that when addressed, enhance safety in a strategic and cost-effective manner. This subcategory differs from the safety subcategory in that the projects are generally larger scale and include all regions of the state, both, urban and rural. Possible projects would include studies of corridors and intersections for the most cost-effective improvement, addition of passing lanes, addition of turning lanes and larger scale intersection improvements. The ELTP has designated that \$10M per year be applied to projects in this subcategory with the intent that the subcategory provides an additional flexible source for response to safety needs throughout the state.

Projects in this subcategory, when eligible, will be funded with HSIP federal funding and state funding. Those projects that do not qualify for HSIP federal funds will be funded with state funds only or with a combination of state and local funds. Safety projects included in this subcategory assist KDOT in meeting their newly established federal safety performance measure targets.

### **Scenic 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.

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Under Map-21 most of the Scenic/Historic Highway program was eliminated from eligibility for 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, KDOT has turned over administration of the Kansas Byways program 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)

The third program category of projects is Expansion. Projects in this program 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 to a lesser degree safety are the focus of projects within this program category. Projects in this program support KDOT's performance measures related to safety, road and bridge infrastructure. Under the ELTP a combination of engineering factors, economic impact, and regional priorities were applied to select projects in this program category.

The first ELTP project selection announced in June 2020 included 26 projects from the Expansion category. These projects are design pipeline projects, amended to the previous STIP and currently authorized for the PE work phase only. Over the next 2-years, some projects from this design pool of projects will be selected and advanced to construction. Projects will be selected based on need, local support and available funding. Unlike previous transportation programs, there is not a specified list of Expansion projects to be constructed during the ELTP and the number of Expansion projects that go forward will vary from year to year. This approach allows the state to remain flexible and responsive to shifting transportation needs and changes in the economic environment.

Projects in the program are grouped into the following subcategories: Advanced Acquisition of ROW (AAR), Cost Share Program (CSP), 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 free-ways. There are several benefits from AAR projects:

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- 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.

Projects are generally funded with a combination of State and local funds with KDOT currently requiring 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 from this subcategory are developed on a need basis often in response to proposed private developments.

### **Cost Share Program (CSP)**

The Cost Share program is a new program developed in 2020 in that is continuing in the ELTP whose purpose is to

increase job growth and retention in the state. There is broad eligibility within this program within scope and mode. Possible projects may address an important transportation need like safety, access improvement, congestion relief, and/or improvement of a current roadway condition. Likewise, projects in this program are not limited to roadway improvements only. This is a multimodal program that accepts projects from all modes including on or off the state roadway system, rail, airports, public transit and bicycle/pedestrian projects. Since this is a multi-modal program not all of the projects achieved under this subcategory will be included in the STIP index of projects. Only those projects related to roadways and bridges are captured. Projects related to other modes will be reported under their respective reporting mechanisms.

Through this program KDOT will provide financial assistance to local entities for construction projects that improve safety through the leveraging of state funds to increase the total transportation investment and aid improvement of the transportation system in both rural and urban areas throughout the state. The next call for projects for consideration is planned for the summer of 2020. Eligible projects will include investments that provide transportation benefits and are not eligible for other KDOT programs. A minimum of 15% non-state cash match is required for a project to be considered. Generally, projects will be administered by Local Public Authorities (LPA), although non-governmental projects will be considered, and projects will be funded

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with a combination of local and state funds or private and state funds or a combination of all three. For program details, see the KDOT website

<https://www.ksdot.org/Assets/wwwksdotorg/LocalConsult/Cost%20ShareSummary081419.pdf>

### **Economic Development (EDP)**

Economic development projects are projects that help spur financial growth. A key priority identified in the LRTP and in the recent local consult meetings is the continuing need for the ELTP and the projects within to be linked to the state's economic priorities. While it is a focus for all programs to reflect the state economic priorities, this subcategory is designed to aid specific projects that will assist communities in spurring financial growth in their areas. In evaluating the potential impact of proposed economic development projects, KDOT utilizes a scoring system that looks at economic impact, cost per job ratio and benefits to the Kansas economy. In addition to scoring well, desirable projects are those that align with regional priorities of an area, have the recommendation of KDOT staff and the endorsement of external partners.

To increase flexibility during the 10-year period of the ELTP and beyond, proposed economic development projects will be reviewed and selected on an ongoing basis. In this way, a source of funding will be available 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 in the previous program, T-WORKS, and continued in the ELTP and discussed previously. The work accomplished in the projects from this subcategory impact KDOT's attainment of the safety, road and bridge infrastructure performance targets.

Given the scope of projects and significant capital required for projects in the RIC & IRC subcategories, projects are usually funded using a combination of federal and state funds. Projects from these subcategories will be generated from the development pipeline. Project selections will be made on a need basis as revenues allow with preference given to those projects that have local support. There is not a specified list of Expansion projects to be constructed during the ELTP and the number of RIC/IRC projects that go forward will vary from year to year. As projects progress through the development pipeline from initial design, to right of acquisition, utilities, final de-



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sign and eventually some projects to construction, the approved phases of work will be amended to the STIP using the amendment process in place.

### **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. As such, the projects develop under this subcategory assist KDOT in reaching their safety performance targets. 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 operations 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 and selected based upon the criteria outlined above. ITS projects are usually funded with a combination of state and local funds.

### **— LOCAL CONSTRUCTION— (City and county road improvements)**

The fourth program category in the ELTP 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. In general, the projects in this program are predominantly on local (non-NHS roadways), and as such most of the work completed in this program does not contribute towards attainment of the federal performance measures and targets. The exceptions are the federal safety projects covered by the HAZ and HES subcategories, and the High-Risk Rural Road projects covered under the RES subcategory and the Railroad/Highway Crossing Protection projects managed under the RXX and RRX subcategories. These subcategories and the projects within assist KDOT in reaching the federal safety targets. While the remaining subcategories within this

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program do not aid in meeting the federal performance targets, the work encompassed is vital to maintaining the roadways and bridges throughout the State in a safer condition and better state of repair and are therefore of great benefit. 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-Surface Preservation (K1R), KLINK Pavement Restoration (K2R), KLINK Geometric Improvements (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. These subcategories are described in more detail on the following pages.

### **City Connecting Link Improvement Program (CCLIP)**

#### **KLINK- Surface Preservation, Pavement Restoration and Geometric Improvement (K1R, K2R, K3R)**

The City Connecting Link Improvement Program (CCLIP) provides

funds for the repair or improvement of any route of the State Highway System located within the corporate limits of a city. All city connecting links except those on the Interstate System or on fully controlled access sections of the Freeway system are eligible to participate in this program. The CCLIP program is comprised of three subcategories each addressing specific types of work.

The first of these subcategories is the KLINK Surface Preservation program (K1R) which focuses on the preservation and or improvement of the driving surface of City Connecting Links on the State Highway System. Projects in this subcategory focus on overlaying, pavement patching, sealing or other surface type maintenance work. Additional work like, bridge improvements, curb and gutter repair or replacement, drainage improvements, construction or improvement of sidewalks beyond the ADA ramps, or geometric improvements may be included in a project but shall not be eligible for program funding. Projects in this subcategory are funded with a combination of state and city funds with only the construction and construction engineering phases eligible for State participation. The maximum State participation for a project in this subcategory is set at \$300,000. The city required match is determined based upon population.

The second subcategory in the program is the newly created KLINK Pavement Restoration (K2R). The goal of this subcategory is to address deficiencies in road surface that are extensive or severe

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in nature that require measures and funding that exceed the scope of the K1R subcategory. Projects within this group may involve a full- depth pavement replacement or extensive rehabilitation. Other related qualifying work includes curb and gutter replacements or repair and storm sewer repairs to list just a few. In general, projects in this subcategory focus on the restoration of the roadway condition without modification. Projects may be funded with a combination of city, state and federal funding with federal funding utilized in the construction and construction engineering phases only. The maximum State participation for a pavement restoration project is set at \$1,000,000 and city matching share is determined by population.

KLINK Geometric Improvement (K3R) is the third and final subcategory in the CCLIP program. Projects in this subcategory are intended to address safety and capacity issues of a roadway. Typical projects include, but are not limited to, intersection improvements, addition or extension of turn lanes, lane widening, and sight distance improvements. Projects may be funded with a combination of city, state and federal funding with federal funding utilized in the construction and construction engineering phases only. Like the K2R subcategory, the maximum State participation is set at \$1,000,000 per project and city matching share is determined by population.

KDOT's Bureau of Local Projects (BLP) solicits projects for the CCLIP program from eligible cities. Projects are

evaluated (including a site visit to each proposed project site); selections are made; and projects are then programmed. Depending on the timing of project selections, projects programmed will be in the STIP project listings (Appendixes A-C) or will be added to the STIP document through the amendment process. For more information about the CCLIP program, contact the KDOT Bureau of Local Projects at 785-296-3861. Or visit KDOT's BLP webpage at <http://www.ksdot.org/bureaus/bur-localproj/default.asp>.

### **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 (HSIP) 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. Most of the safety funding is administered by the Bureau of Transportation Safety and Technology (BST&T) and is applied to projects in communities with a population of 5,000 or greater. The Bureau of Local Projects administers safety projects on country roads and in cities with a population under 5,000. By contributing to the reduction in road-way departures and intersection safety, both subcategories are part of KDOT's effort to improve overall

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roadway safety in Kansas and are referenced specifically in the Strategic Highway Safety Plan (SHSP), Appendix A. Jointly these two subcategories help to meet the newly established federal safety performance measure targets.

For projects administered by the BTS&T, 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 BLP, projects are selected

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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.

### **Local Bridge Improvements (LBT)**

The Local Bridge Improvement (LBT) Program was initiated in 2014 and 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. Eligible bridges are on very low-volume roads, have a span of 50 feet or less and shall be classified as structurally deficient or functionally obsolete. Longer bridges or bridges on higher volume roads are, also, eligible, but are limited to the same state funding amounts. At origination, this program was funded for only the initial year.

However, funding was then revived in SFY 20 and will continue in the ELTP program so more rural bridges may continue to be addressed. The goal of projects in this subcategory is to increase the state of repair of rural bridges across the State of Kansas. In the ELTP, \$5M of funding per year of the ten-year program is available to address these bridges. The maximum state participation per individual project is \$150,000, unless the LPA agrees to close and remove a second deficient bridge on their system, then the

maximum state dollars is increased to \$200,000.

The program is competitive with projects selected through an application process with a call for applications planned of the summer of 2021. Once a project is selected for funding, KDOT and the LPA will enter into an agreement for the project. All project development and administration are the responsibility of the LPA. Projects must be let to contract. After project selections are announced and funding is awarded, 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/bur-LocalProj/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

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administer local transportation projects.

To qualify for LOC subcategory funding and the administration of their own federally funded non-National Highway System (Non-NHS) projects, LPAs must first 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. A discussion of the LFT subcategory projects is

included in this narrative to explain the 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/bur-LocalProj/default.asp>

Also, included in this program is a subset of projects funded with HSIP funding for High Risk Rural Roads (HRRR). Under past federal transportation acts, funds for high risk rural roads were reserved for these roads but this funding was not continued in the FAST Act and is expected to be treated similarly in the next program as well. However, safety on Kansas rural roads is a concern that KDOT elects to continue to address. These funds are intended for roads with a history of crashes higher than the statewide average. Projects are intended to address roadway departures and intersection safety and are generally funded with HSIP funds at a 90% federal share and a 10 % local share, although the funding pro rata may vary. These projects are referenced specifically in the Strategic Highway Safety Plan (SHSP) Local Roads section (<https://www.ksdot.org/Assets/wwwksdotorg/bureaus/burTrafficSaf/reports/LocalRoadsSHSP.pdf> ). The high-risk rural road projects contribute to KDOT's effort to improve overall roadway safety in Kansas and aid in

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KDOT's efforts to meet the newly established federal safety performance measure targets.

Regardless of the funding used for repairs, LPAs select all projects in a similar manner using the same set of criteria for all selections. 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 make decisions about 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 programmed. For federally funded projects, these lists are the local entities' portion of the STIP and identify their priori-

tized road or bridge construction projects. These projects are incorporated into the STIP or TIPs as appropriate.

### **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 HSIP funding 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 the following three factors- highway traffic, train traffic and a warning device. Annually a few 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

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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.

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 approval of corridor project, there must be a reasonable number of highway/ railroads 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 2021 have been selected and programmed and the selection and programming of 2022 projects is underway.

Projects in these subcategories help to address the Strategic Highway Safety Plan (SHSP) goal of decreasing roadway departures and are referenced specifically in the SHSP, Appendix A. These projects contribute to KDOT's effort to increase overall road safety in Kansas and to meet the newly established federal safety performance measure targets.

### **Safe Routes to School (SRT)**

Although, the FAST Act has ended for planning purposes the Safe Routes to School (SRTS) program will continue to be treated in the same manner it was under the FAST Act and will remain merged with Transportation Alternative program (TA). Likewise, the TA program will continue to be treated as a set aside program of STBG program as was established in the Fast Act. 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.

For planning purposes until a new federal program is in place, the focus of the SRTS is expected to continue to be increasing 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 through a competi-



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tive selection process. To qualify for consideration, applications must meet one of the following three criteria:

- 1) Project provides for plan development of safe routes to school programs, 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.

Local public authorities, individual schools and school districts are sent request for projects when funding is available for the SRTS program, submissions are evaluated, and selections made. The selected projects are then added to the STIP document or amended using the amendment process in place depending on the timing of the selections. A call for projects is currently underway for the SRTS subcategory. More information about the SRTS subcategory and the Transportation Alternatives program is available at the following link:

<https://www.ksdot.org/bureaus/burtransport/TransAlt.asp>

## **Transportation Enhancement (TEX)**

Although, the FAST Act has ended for planning purposes the federal Transportation Enhancement (TE) program will continue to be treated as part of the Transportation Alternative (TA) program which itself continues as a set aside of the federal STBG program. Projects in the TEX 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 subcate-

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gory are funded based on an 80 percent federal/20 percent local match and projects are selected through an application process. Eligible projects 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. More information about the Transportation Enhancement and TA Program is available at <https://www.ksdot.org/bureaus/bur-transplan/TransAlt.asp>