PROJECT SELECTION CRITERIA

Projects contained in this STIP are generated from various levels of government (city, county, and state) and from many different governments. Consequently, they are also generated from many different processes and criteria. The criteria described below are those used by KDOT to select projects on the state highway system and city connecting links.

The Kansas Fiscal Year (FY) 2007 - 2009 Highway Projects are composed of four program categories: Substantial Maintenance; Major Modification; Priority Bridge; and System Enhancement. The 1990 - 1997 Comprehensive Highway Program established these categories. A new System Enhancement program was authorized by the Kansas Legislature for the FY 2000 - 2009 Comprehensive Transportation Program. Within each of these major categories are funding and/or project-type subcategories. The selection criteria used in developing the Program are tailored to the intent and funding constraints of each of the program components.

SUBSTANTIAL MAINTENANCE

Substantial Maintenance projects, the first major component, are intended to protect the traveling public and the public's investment in its highway system by preserving the "as built" condition as long as possible. These projects are financed with funds that are reserved (or set aside) for specific purposes.

Without proper maintenance, the cost for major repairs and/or replacement at a later date can be several times greater than the cost of timely maintenance. The Substantial Maintenance set-aside funds include Non-Interstate Resurfacing, City Connecting Link (KLINK) Resurfacing, Interstate Resurfacing, Contract Maintenance, Safety Projects, Bridge and Culvert Repair, Bridge Painting, Signing, Pavement Marking, Lighting, and Emergency Repair.

Non-Interstate Resurfacing

Approximately 1,200 to 1,400 miles of two-lane non-Interstate pavement are resurfaced or repaired annually through this set-aside program. The program's intent is to maintain non-Interstate pavements in adequate condition and keep rideability 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. PMS consists of three interconnected sub-systems:

The Pavement Management Information System (PMIS) is a data base and supporting computer programs and tools which contain network and project-level survey results, information downloaded from the planning database, and output from the Construction Priority System. Information from the planning database includes data on geometric features, traffic, and truck load information. Information is regularly transferred between these multiple data sources.

The Network Optimization System (NOS) models the highway network and determines the action for each one-mile segment of the entire system to produce the optimal statewide benefit. The system can operate in either a "desired-performance" mode or a "fixed-budget" mode. In the desired-performance mode, the system selects actions to achieve the selected performance level at the lowest cost. In the fixed-budget mode, the system selects the set of projects that produces the "best" total system performance for the fixed-budget level. A linear programming model is used to minimize the long-term expected average cost of rehabilitation, subject to certain short-term requirements. Program development is a two-part process. NOS selects "locations only" for projects to be let to contract two years following the survey year. The second process (described below) develops scopes for resurfacing projects for the year following the pavement survey.

The Project Optimization System (POS) will serve two functions. First, it is a comprehensive design system for pavement structural sections on new grades. Second, it utilizes site-specific cost and material parameters to revise tentative project scopes from the NOS. Alternative rehabilitation strategies for a single project, or for groups of projects which meet cost and performance constraints from the NOS, are further evaluated. The POS selects the strategy which minimizes the need for future maintenance.

Interstate Resurfacing

Approximately 20 center-line miles of divided Interstate roadway (40 miles of two-lane pavement) 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.

City Connecting Link "KLINK" Resurfacing

This is a Local Partnership Program. The KLINK Resurfacing set-aside program provides funding for resurfacing projects on city streets that connect two rural portions of state highway (called

City Connecting Links). These projects are funded under a 50 percent state/50 percent city funding matching arrangement for cities with greater than 10,000 population and a 75 percent state/25 percent city ratio for cities with less than 10,000 population. The maximum state share for a project is $200,000.

KDOT annually solicits requests for eligible projects. All State Highway System City Connecting Links are eligible except those on the Interstate System and fully-controlled access sections on the Freeway System. Cities requesting projects are encouraged to review the proposed projects with the KDOT District Engineer or designated representative before submitting applications. If requested funds exceed available funds, projects are prioritized and selected on the basis of pavement survey conditions.

Contract Maintenance

Maintenance activities are undertaken 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.

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) not eligible for other maintenance programs; 3) not anticipated (generally the result of weather or traffic conditions). Projects are selected on the basis of statewide need for corrective action, not on a balanced distribution between districts.

Safety Projects

This set-aside program provides for improvement of intersections or spot locations where major improvement is not required. The addition of left-turn lanes, pavement resurfacing, traffic signals, signing, and pavement marking can be cost effective in reducing crashes at these locations.

The Bureau of Traffic Engineering conducts studies on the physical and operational characteristics of high-crash locations. These studies:

1) identify the reason the particular location is being reviewed;
2) identify pertinent conditions;
3) identify concerns;
4) identify possible causes of the concerns;
5) identify possible solutions;
6) estimate cost of each possible solution;
7) rank each solution on the basis of engineering judgment;
8) consider effects on like or similar areas (uniformity factor);

9) provide benefit/cost analysis for each solution;
10) recommend action.

Once projects are identified, they are ranked in descending order by average annual net return. KDOT determines the average annual net return for each location by subtracting the average annual cost from the average annual benefit. First priority is given to the location with the highest average annual net return.

Exceptions to this order are sometimes necessary because city matching funds are unavailable, future projects encompass the selected location, approximate locations are grouped into one project, or several smaller projects are combined resulting in a total net return larger than the return for one project. Projects are scheduled until the available Safety Project funds are exhausted.

Emergency Repair

Funds are set aside annually for emergency repairs that occur as the result of accidents or disasters. Allocation of these funds is authorized by the State Transportation Engineer when accidents/ weather-related causes occur.

Bridge and Culvert Repair

The Bridge Repair and Culvert Repair set-aside programs supplement the Priority Bridge program. The program aims to restore the structural integrity of bridges and culverts. Bridge 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.

Each 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. The lists are 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 merged to create the yearly statewide repair list.

Bridge Painting

There are approximately 800 bridge structures on the Kansas State Highway System, that require periodic painting of the structural steel to slow corrosion. 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 reviewed by the Bureau of Program and Project Management to confirm that each candidate structure is not programmed for future work under any other KDOT program. Projects are then scheduled in order of priority until available funds are exhausted.

Group B: Structures having less than 10 tons of structural steel.

Each District is responsible for the painting of these structures (approximately 40 bridges statewide).

Signing

This program was established in 1996 to address necessary sign replacements on the State Highway System due to pending new federal requirements for minimum retroreflectivity of signs. This program schedules sign replacements based upon highway route mileage statewide and the total mileage of all the routes in each District for that year. This program excludes signs on any other state projects that include sign replacement for that highway route in the same year. This program also excludes any signs that were replaced within seven years of the scheduled date of the replacement project.

Pavement Marking

This set-aside program was established in FY 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 any other KDOT program. Projects are selected by the Bureau of Traffic Engineering 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.

Lighting

Because lighting is beneficial to the safety and operation of the highway system, this set-aside program was established in FY 2000. Projects are selected by the Bureau of Traffic Engineering based on the roadway's volume and night-time crash history. This program is limited to projects which are not included under any other KDOT program. Projects are scheduled until the available lighting funds are exhausted. (At other

locations, lighting may be installed by the local unit of government by obtaining a highway permit. In general, the local entity bears the cost of installation, maintenance, and operation.)

MAJOR MODIFICATION

The Major Modification program is the second major component of the FY 2007 - 2009 Highway Program. It is designed to improve the service, comfort, capacity, condition, economy, or safety of the existing system. It includes a number of set-aside programs: Economic Development; Geometric Improvement; and the federal-aid Railroad/ Highway Crossing and Safety programs. Only a portion of the Railroad/Highway Crossing and Safety funds are included in the state program because most of the projects are off the State Highway System. Two new set-aside programs, Guard Fence Upgrades and Railroad Grade Separations, were established in FY 1996 and 1998 respectively.

For the CTP, four additional new set-aside programs were established: Corridor Management; Railroad Crossing Surfacing; Local Partnership Railroad Grade Separations; and Intelligent Transportation Systems (ITS).

Non-Interstate Roadway and Associated Bridge Projects

Construction Priority System - Major Modification Interstate and Non-Interstate roadway and Priority Bridge projects are selected using the Construction Priority System. It ranks roadway sections and bridges for improvement by the seriousness of their deficiencies.

The system was developed by KDOT and Woodward-Clyde Consultants in 1981. The system originally consisted of two formulas – one for roads and one for bridges – that used input from KDOT's planning data base to measure the relative need for improvement of all roads and bridges. Both the roadway and the bridge formulas have since been modified by KDOT, and a third formula, for Interstate roadway rehabilitation projects, has been developed by modifying the original roadway formula to apply to Interstate roadway sections only. All three formulas are currently under review.

KDOT runs the three priority formulas annually to update priority ratings by using updated survey information. The output from the formulas, prioritized lists of roadway control sections and bridges, are used to identify logical projects. Projects with the highest relative need are programmed for improvement first within available funding and based on scheduling considerations. This process was used to select projects in the CTP Major Modification program and Priority Bridge program. These are the basic steps used to develop the multiyear program:

1) develop funding estimates;
2) identify and prioritize projects, deter-

mine improvement scopes, and prepare cost estimates;
3) earmark set-aside funds;
4) balance project costs and funding by fund class and obligation limit within each fiscal year;
5) prepare summary of project costs and funding by fund class and fiscal year, and;
6) review of draft program, cost, and funding summary data by Program Review Committee.

Non-Interstate Projects - Roadway work in this category includes reconstruction/heavy rehabilitation of pavement, widening traffic lanes, adding or widening shoulders, and improving alignment (i.e., eliminating steep hills or sharp curves). Associated bridge work includes widening narrow bridges, replacing obsolete bridges, and modernizing bridge rails for bridges within the limits of each project. Non-Interstate roadway projects were prioritized using the Non-Interstate Roadway Priority Formula. A schematic of the formula is shown on the following page.

Interstate Roadway and Associated Bridge Projects

Roadway work in this category includes resurfacing, restoring, rehabilitating, and reconstructing pavement on the Interstate System. A separate priority formula was developed for Interstate roadway rehabilitation by KDOT in January 1988. A schematic of the formula is shown on the following page.

The Interstate Roadway Formula was reviewed prior to selecting projects for FY 1998. As a result of this review, use of the formula was suspended due to data-related issues and the need for the formula to more accurately reflect the structural condition of Interstate pavements. KDOT is in the process of reviewing both current data used in the formula and computer procedures for new data that evaluate pavement by pavement layer type, thickness, age, and axle loadings. For FY 2007 - 2009, Interstate Roadway projects were selected based on the age of the underlying pavement, pavement deterioration requiring frequent and repeated Substantial Maintenance projects, and system rehabilitation continuity.

Economic Development

Economic Development projects are highway and bridge construction projects intended to enhance the economic development of the State of Kansas. This is a Local Partnership Program in which a project's cost is shared by the state and a local unit of government. Local support must be at least 25 percent of a project's total cost. Eligible projects must have the potential to significantly enhance the income, employment, sales receipts, and land values in the surrounding area.

KDOT annually solicits requests for eligible projects. Applicants are encouraged to review proposed projects with

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[1] (See below)
Attribute (Need Value)	Relative Weight	*	*	Divided	Undivided	Stabilized	Unsta-bilized	*	*
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	0.607	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			0.376	1.0	0.519	1.0	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	**1.000**								

* Non-Interstate Priority Formula (ADJUSTMENT FACTORS)

Accident Rate	Adjustment Factor	Posted Speed	Adjustment Factor	Route Class	Adjustment Factor	Capacity -Adjusted AADT[4]	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	AADT[1]
Attribute (Need Value)	Relative Weight	Divided	Undivided	Stabilized	Unstabilized	(See below)	(See below)
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	**1.000**						

[1] **Average Annual Daily Traffic** – The number of vehicles per day on a roadway segment averaged over one year.

the KDOT District Engineer or a designated representative prior to the submission of an application. Upon submission, KDOT's Bureau of Program and Project Management reviews the proposed project scope and estimate. All projects are then assembled in a single package and presented to the Kansas Highway Advisory Commission. Staff from KDOT and the Kansas Department of Commerce and Housing assist the Highway Advisory Commission by evaluating the projects. The Highway Advisory Commission recommends a set of projects to the Secretary of Transportation who makes the final selection.

Geometric Improvement

This is a Local Partnership Program. Funds are set aside annually to assist cities in funding geometric improvements on City Connecting Links (city streets which connect two portions of rural state highway). Geometric improvements are designed to widen pavements, add or widen shoulders, and add needed turning, acceleration, and deceleration lanes. The minimum local funding can range from 0 percent to 25 percent of the project cost, depending on the size of the city. The maximum state share ranges from $700,000 to $950,000.

KDOT annually solicits requests for eligible projects. Cities are encouraged to review proposed projects with the KDOT District Engineer or a designated representative before submitting the application. Upon submission, KDOT's Bureau of Program and Project Management reviews the proposed project scope and estimate. All projects are then assembled in a single package and presented to the Highway Advisory Commission. KDOT staff assists by providing project-related information and design criteria. The Highway Advisory Commission recommends a set of projects to the Secretary of Transportation who makes the final selection.

Safety Funds

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted on August 10, 2005. It establishes a new core Highway Safety Improvement Program (HSIP) that is intended to make significant progress in reducing highway fatalities. The HSIP requires States to develop and implement a strategic highway safety plan and submit annual reports to the Secretary that describe at least 5 percent of their hazardous locations, progress in implementing highway safety improvement projects, and their effectiveness in reducing fatalities and injuries. Other programs target specific areas of concern; such as work zone safety, older drivers, high-risk rural roads, and safe routes to school.

Railroad/Highway Crossing

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 factor. A schematic of the formula is shown below.

Priority Formula For Railroad Crossings

Hazard Index = AADT x T x W

AADT = Average Annual Daily Traffic
T = Average Trains per day
W = 0.1 for gates
W = 0.6 for flashing lights
W = 1.0 for cross bucks

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 these crossings is conducted to verify crossing inventory information.

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 a commitment from local government, railroads, 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.

Federal Safety Projects

These federal-aid projects provide safety improvements on all federal-aid systems. Federal Safety funds provide 90 percent of these projects' construction and construction engineering costs, except that certain safety improvements as

listed in 23 U.S.C. 120 (c) are eligible for 100 percent funding. The Bureau of Traffic Engineering administers the majority of the Safety program. The Bureau of Local Projects administers a small portion of the program for projects on county roads and cities under 5,000 population.

Four categories of roadway systems have been established for location analysis and funding to ensure that all roadway systems can benefit from federal-aid safety improvements. Each category is allotted a portion of the total amount of Safety funds available at the beginning of each federal fiscal year.

Jurisdiction Location	Population	Funding Split
N Metropolitan	Kansas City/Wichita	38 percent
U Urban	Over 5,000	30 percent
K Rural State Hwys.	Less than 5,000	20 percent
C County Rds. and other Roadways	Less than 5,000	12 percent

(These figures are not intended to be rigid. The percentages may vary by a few points in any given year. In addition, funds that cannot be utilized in one category may be transferred to another category.)

Identification of High Accident Locations - For Jurisdictions N and U, cities are requested to submit two years of crash data for up to five high-crash locations on federal-aid routes within their areas. High-crash locations are determined and ranked by descending equivalent-property-damage-only (EPDO) accident rate. The top 50 (approximately) are considered high-crash locations warranting further analysis. Projects in these categories are financed with federal-aid and local matching funds.

For Jurisdiction K, to determine if a location is a high-frequency crash location, a comparison is made between the actual crash rate and the statewide average rate for similar highways. The Bureau of Traffic Engineering conducts county-wide road safety audits. From these audits and from traffic studies, high-crash locations are established. High-crash locations are ranked in descending EPDO crash rate order. The top ten are considered high-crash locations warranting further analysis. Projects in jurisdiction K on the rural State Highway System are financed with federal-aid and state funds.

Jurisdiction C projects are financed with federal-aid and local matching funds rather than state funds. These projects are selected by local units of government and are subject to Federal Highway Administration approval. They are administered by the Bureau of Local Projects.

Prioritization - The identified high-crash locations are prioritized on the basis of the average annual net return for each location. The average annual net return is a dollar amount found by subtracting the average annual costs from average annual benefits. First priority is given to the location with the highest average annual net return. Remaining projects are scheduled in descending order until funds are exhausted. Exceptions to this might be caused by the unavailability of city

matching funds, future projects that may encompass the selected location, a grouping of proximate locations into one project, or combining several smaller projects for a total net return larger than one project.

Railroad Grade Separations

This program was established in FY 1998 to replace state highway railroad at-grade crossings with grade separation structures. To be eligible for this program crossings must be:

1) a rural or City Connecting Link state highway crossing;
2) main line railroad traffic, excluding industrial spur tracks, and;
3) route classification must be "B" or "C" or be on the National Highway System (NHS).

Eligible at-grade crossings are prioritized using KDOT's priority formula hazard index. This is the ranking formula also used for the Major Modification Railroad/Highway Crossing projects. The formula is based on railroad and highway operational characteristics. Projects are funded with a combination of federal, state, railroad company, and local monies.

Guard Fence Upgrades

This program was established in FY 1996 to address guard fence upgrades on Interstate and selected high-priority corridors where guard fence is not a part of any other Major Modification or Priority Bridge project. This set-aside fund is necessary due to federal requirements.

It is anticipated that the program will require several years to be completed. Locations of individual sites for the program are determined and grouped into projects according to proximity. Prioritization is based on traffic exposure with locations having the highest traffic volumes being scheduled for construction in the earlier years followed in subsequent years by routes with lower volumes.

Corridor Management

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. This fund is divided into two subcategories with two-thirds going to a project subcategory and one-third to a contingency subcategory. To be eligible for either category of funds, a corridor must be designated in the district plan, there must be a partnering agreement between the Secretary, city, and county, and there must be a binding corridor master plan in place.

The contingency subcategory of funds is designed to address rapidly developing areas or sites where transportation infra-

structure changes must be made to better accommodate changes in demand. This fund requires a minimum 50 percent local match for state monies. There is also a per-project maximum of $200,000.

The project subcategory of funds is designed to assist newly developing areas in meeting the master plan or to retrofit established areas to master plan standards. Projects are solicited annually and require a minimum 33 percent local match for state monies. There is a per-project maximum of $250,000.

In addition, Corridor Management funds may be used for advance right-of-way acquisition in some special cases.

Railroad Crossing Surfacing

This program was established in FY 2000. Projects under this program will be for at-grade highway/railroad crossing approach and surface upgrades. Eligible crossings will be rural State Highway System crossings and State Highway System City Connecting Link crossings in cities up to 2,500 population.

Projects will be selected from applications for crossing surface improvement projects submitted by railroad companies and Districts. Project scopes will include all necessary materials and activities required for long-term crossing surface and approach improvements. These projects will be funded with 50 percent state and 50 percent railroad company monies.

Local Partnership Railroad Grade Separation

This is a new program established for the CTP. The Local Partnership Railroad Grade Separation Program addresses highway/railroad at-grade crossings off the State Highway System and crossings on the State Highway System, which are on lower priority routes (Route Class "D" and "E"). Project applications will be solicited from local units of government. The project sponsor will be responsible for providing 10 to 20 percent of the project funds, depending on the population of the city or county. Funds provided by the railroad company will be counted as part of the local match funds; the project sponsor will be responsible for negotiating with the railroad.

Projects will be selected based on KDOT's priority formula hazard index. This is the ranking formula also used for the Major Modification Railroad/Highway Crossing projects. The formula is based on the railroad and highway operational characteristics. Additional selection consideration will be given to projects with relatively higher rates of local and railroad match funding in order to leverage state dollars. The project selection process will also give consideration to the overall positive effects on communities.

Intelligent Transportation Systems (ITS)

The ITS set-aside 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 has applications in urban areas, rural areas, transit, and commercial vehicle operations, and consideration for funding will be given to all of these areas.

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

1) project support and integration risks;
2) telecommunications considerations;
3) design considerations and factors of success;
4) funding sources and evaluation consideration;
5) cost effectiveness and benefits; and,
6) local funding match percentage.

Projects will be solicited annually and selected based on the criteria listed above.

PRIORITY BRIDGE

The Priority Bridge program, the third category of the FY 2007 - 2009 Highway Program, is designed to replace or rehabilitate substandard bridges. Substandard bridges are those in a deteriorated condition or with deficiencies in load-carrying capacity, width, or traffic service. Special consideration is given to replacing one-lane bridges (bridges with roadway width less than 20 feet), restricted vertical clearance bridges, and cribbed bridges (bridges with temporary structural supports to keep them in use).

Priority Bridge projects are selected using the Bridge Priority Formula. The formula was developed by KDOT and Woodward-Clyde Consultants in 1981. It was modified by KDOT in July 1987 and again in September 1988. Bridges with the highest relative need are programmed for improvement first within available funding and based on scheduling considerations. A schematic of the formula appears below.

Bridge Priority Formula

(ATTRIBUTES / ADJUSTMENT FACTORS)

Attribute (Need Value)	Rel. Weight	Adjustment Factors AADT[1] (See p 14)
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	**1.000**	

[1] **Average Annual Daily Traffic** – The number of vehicles per day on a roadway segment averaged over one

Bridge Deck Replacement and Culvert-Bridge

Both of these categories expand the Priority Bridge program. The Culvert-Bridge program addresses culverts that are beyond the scope of a Substantial Maintenance project, but do not qualify for the Priority Bridge Replacement/ Rehabilitation program. The Bridge Deck Replacement program addresses bridges where the bridge superstructure and substructure are in satisfactory condition, but the bridge deck has deteriorated to the point where a Substantial Maintenance project would not be adequate.

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.

SYSTEM ENHANCEMENT PROGRAM

The System Enhancement Program is the Comprehensive Transportation Program's fourth category. System Enhancement projects relieve congestion, improve access, enhance economic development or substantially improve safety. There are three basic types of projects in this program: Corridor Improvement, Interchange/Separation Improvements and Bypass Construction. Candidate projects for this program are solicited from local units of government on a one-time basis with the selection made by the Secretary of Transportation in August 2000.

The System Enhancement Program was created during the Comprehensive Highway Program (CHP: Fiscal Years 1989-1997) and continued through the Comprehensive Transportation Program (CTP: Fiscal Years 2000-2009). With the exception of a couple carryover projects, this program has no new projects planned to be developed through Fiscal Year 2011.

Corridor Improvement

These improvements are projects that substantially improve the capacity and serviceability of significant segments of the State Highway System.

All Corridor Improvement projects must be either on the currently approved State Highway System or must be a logical addition as determined by KDOT. Projects also must substantially improve the route's capacity and serviceability.

Interchanges/Separation Improvement

These are projects that add new interchanges, improve existing interchanges or build separation structures, which reduce congestion on the Interstate or State Highway System. All Interchange/Separation additions or improvements must be on the State Highway System.

Bypass Construction

Projects in this category provide bypasses around cities. All Bypass Construction projects must be either on the current approved State Highway System or must be a logical addition as determined by KDOT.

TRANSPORTATION ENHANCEMENT PROGRAM

Federal statute requires that a minimum of 10 percent of the state's Federal Surface Transportation Program funding be set aside for Transportation Enhancement projects. These projects fall into three categories: historic, scenic and environmental, and pedestrian and bicycle facilities and must be directly related to a surface transportation system. This program is funded based on an 80 percent federal/20 percent local match. Applications are solicited from cities and counties and evaluated and selected based on the criteria of the program.

LOCAL CONSTRUCTION PROJECTS

Local governmental agencies select their projects using a number of criteria. These projects are often proposed because of safety concerns, the need to maintain existing facilities or structures, and community needs fueled by growth, or at the insistence of the public. Bridge inspection data and other management systems are available to them to assist in the selection process. KDOT provides local agencies with the amount of federal funds available for projects, based on the amount in the five-year plan.

A list of proposed projects is prepared by the local agencies, and public input is solicited. After they have been approved, the proposed projects are prioritized and submitted to KDOT's Bureau of Local Projects with proof of public involvement. The projects are programmed based on the amount of funds available.