



**IKSA**

A · DYNAMIC · PERSPECTIVE

**TRANSPORTATION SERVICES**

# A DYNAMIC PERSPECTIVE SINCE 1978.

Transportation systems like roadways, highways, toll facilities, bridges and water resources play a huge role in our ability to go about our everyday lives – both work and play. KSA has been designing public infrastructure for more than 38 years. At the core, we are committed to improving trip safety and quality for the traveling public. We offer a full array of transportation engineering services. Not only do we design according to the appropriate standards and specifications, we are also mindful of natural resources and minimizing our impact on the environment.

## TRANSPORTATION YOU CAN TRUST

KSA has a history of providing transportation engineering services and we look forward to re-entering this market and expanding our presence in the coming years. Our legacy projects include a host of street and road developments and improvements. We work with municipalities and state agencies for street assessments, safe street programs, capital improvement plans, street reconstruction and extension design and other street-related services. We are pre-certified in nearly two dozen Texas Department of Transportation (TxDOT) work categories. When we partner with DOTs, municipalities, counties, regional airports and transit agencies, we deliver high-quality, innovative products within budget and on schedule.

## KNOCK ON ONE DOOR

Every completed transportation project involves a host of design specialists. Under one roof, KSA can provide all the necessary components from surveying, roadway design, utility and drainage system design, traffic control coordination, sidewalk and signage design, and even landscape architecture. Our ability to offer such a comprehensive design process gives the client the option of executing their project under one contract, with one contact.

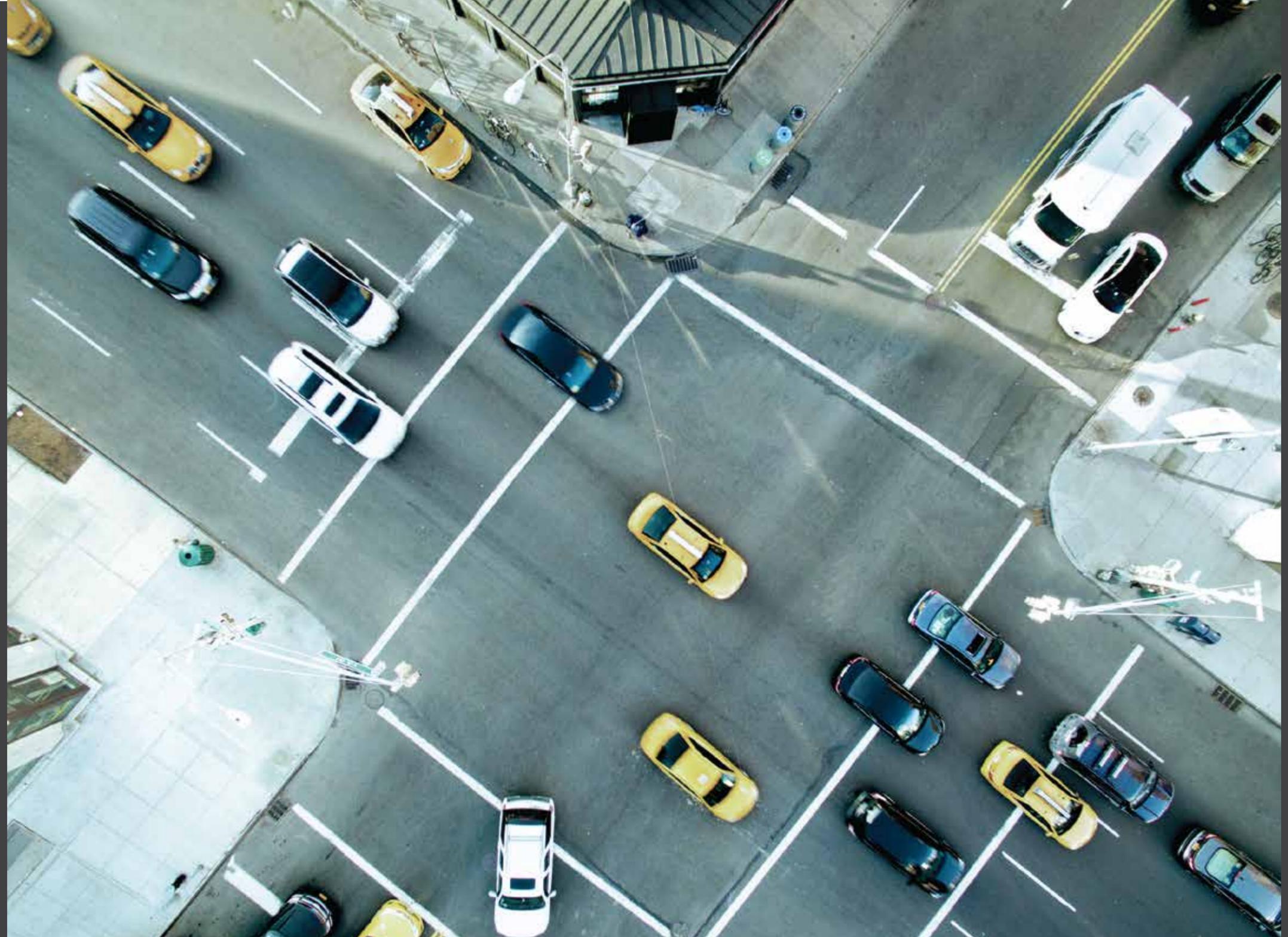
## TECHNOLOGY AND SOFTWARE

Trending topics and technologies like autonomous vehicles and drones come complete with a mix of promise and concern. KSA's Transportation Services group is interested in how the transportation industry can utilize these new tools to minimize human error and usher in a new era of safety and convenience.

We design using 3D software to show our clients real pictures of their problems and our solutions. This technology also communicates seamlessly with internal and external disciplines to manage projects with ease. We also have geographic information systems (GIS) specialists who work with geo-databases to capture, store, manipulate, analyze and present information. We apply that technology to transportation systems to identify and help manage natural resources, avoid utility conflicts and maintain or achieve environmental compliance.

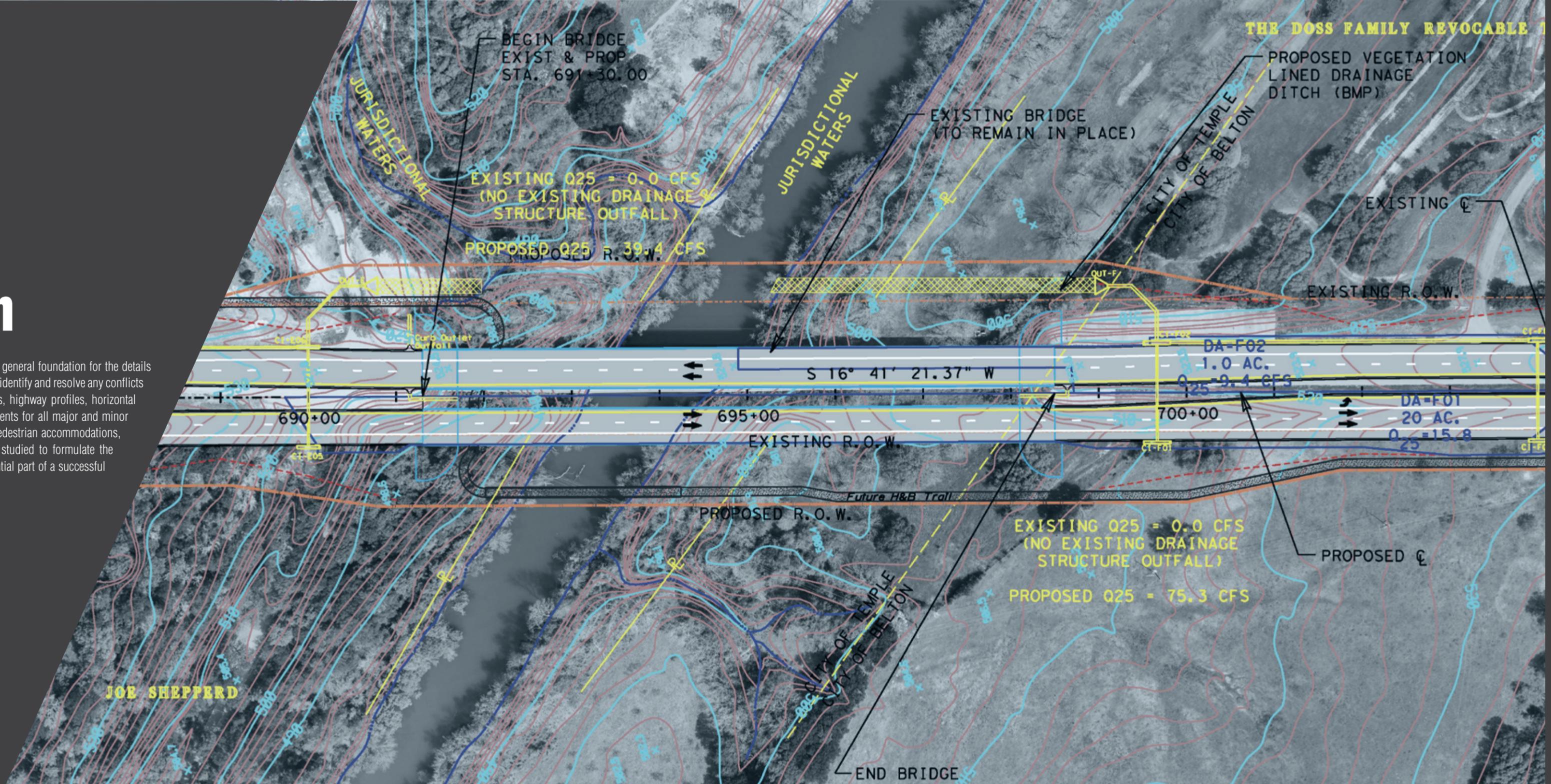
## ABOUT KSA

KSA is an industry leader providing a broad range of consulting, management, engineering, architecture, landscape architecture, planning, surveying, economic development and construction administrative services. Founded in 1978, KSA is dedicated to making life better in the communities we serve.



# Schematic Design

The crucial first step of a multi-step highway project, schematic designs lay the general foundation for the details that follow in later phases of the project. During the schematic design process, we identify and resolve any conflicts found in the relationship between drainage, structures, environmental elements, highway profiles, horizontal alignments, utilities and ramps. KSA designs the horizontal and vertical alignments for all major and minor roads. In an effort to blend the new project with the surrounding community, pedestrian accommodations, cycling paths, traffic patterns, landscape aesthetics and local businesses are studied to formulate the project's basic framework. The development of the schematic design is an essential part of a successful highway project.



# Roadway Design

KSA's transportation engineering services include the planning, design and construction administration of roads. In addition to meeting design standards and specifications, KSA's roadways match the aesthetic of the communities it serves – like it's always been there. With sound engineering practices and good judgment, we design roads that are easy-to-navigate and pleasing to the eye.

Whether it is a highway extension, widening or simply reconfiguring ramps, KSA brings focused expertise to the project along with diverse experience. We understand how roadway designs tie into nearby features like landscaping, lighting, utilities, sidewalks, parks and other roadways, for example. We can seamlessly coordinate with other consultants and we have the ability to provide many of these related services in-house. KSA has a collaborative process that helps us bring creative solutions to improve both safety and mobility.

# Hydrology and Hydraulics

Because of the unpredictability of rainfall, hydraulics is imperative; particularly concerning the design of bridges located over bodies of water. KSA uses hydraulics in the careful design of bridges, allowing them to maintain a secure distance above fluctuating water surface elevations. Our professional services include the design of closed storm drainage systems, open channel design, stormwater detention and culvert design. Using advanced hydrologic and hydraulic modeling software, we can model and analyze existing water conditions and design transportation systems that best serve the needs of the area.

Experience with major drainage projects enables KSA to design and implement drainage solutions that promote the flow of water from transportation systems into natural water sources. We have in-depth knowledge of Federal Emergency Management Association (FEMA) procedures for letters of map revision (LOMR) and conditional letters of map revision (CLOMR) coordination. Our use of hydrology and hydraulics modeling programs allows us to confirm impacts of drainage modifications to sensitive sites and design sustainable drainage alternatives.

## SW3P

Because water is one of the earth's most precious resources, the design of storm water pollution prevention plans (SW3P) is an important way KSA actively preserves natural water resources like rivers, lakes and streams during construction. KSA's SW3P design follows best management practices to protect on-site drainage systems and capture the maximum amount of sediment from construction activities to promote the vitality of nearby waters and its fauna.

SW3P is an important facet of environmental awareness. At KSA, we feel it is our responsibility to aid in the conservation of water. Our environmental focus is centered on the execution of our client's projects while ensuring regulatory compliance.

# Signage, Striping and Traffic Control

The safe movement of traffic through the project corridor is of utmost importance during construction and afterward. KSA's engineers have experience designing solutions that meet Manual on Uniform Traffic Control Devices (MUTCD) design criteria. Signs, traffic-control devices and on-pavement striping and other markings communicate important messages to vehicles and pedestrians. The messages are designed to inform, alert, caution and guide commuters toward secure, uneventful travel experiences.

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