

TRANSPORTATION TIMES

STV TRANSPORTATION AND INFRASTRUCTURE DIVISION'S NEWSLETTER

Spring 2013



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LAX CONNECTIONS

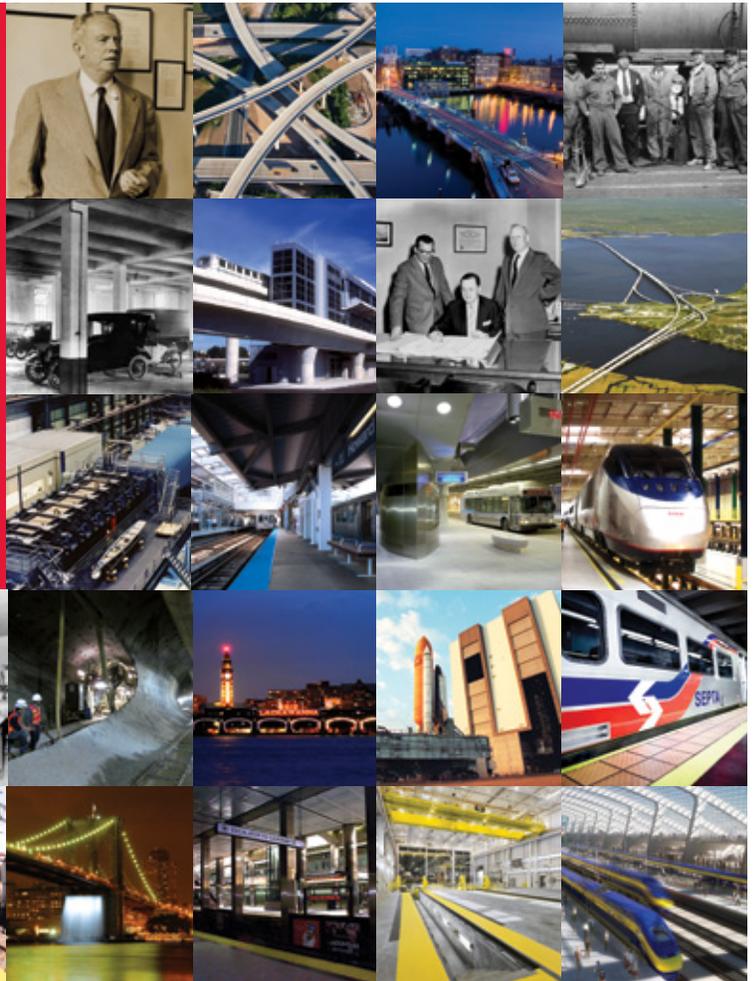
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ENDURING.
DRIVEN.
VISIONARY.



100 YEARS OF STV

STV celebrated its 100th anniversary in 2012. From its beginnings as a structural engineering firm, today STV is a full-service engineering and architectural firm providing an array of services for world-class transportation, infrastructure and building projects.

For decades, STV and its predecessor companies have supported the nation and its burgeoning roadway and interstate network, planning, designing and supervising the construction of new and rehabilitated roadways and bridges that keep people moving safely and efficiently. Then, in the 1970s, as the nation was in the midst of an interstate highway construction boom, STV looked into an underserved market – passenger and freight rail –

and soon the firm was building from the ground up a nationally recognized rail and mass transportation practice.

Today, STV consistently ranks among the top firms serving the transportation market. Ninth on Engineering News-Record's list of the Top 50 firms in Transportation, STV is 5th among mass transit and rail firms, 12th among the Top 25 in highways and 13th in bridges. The projects pictured on these pages are just a representative sampling of STV's broad range of transportation assignments over the years. For more information on STV's evolving history, visit our website at www.stvinc.com, and go to the STV 100th Anniversary section to view our timeline and video series.



◀ 1944
Androscoggin River Railroad
Bridge Rehabilitation
Berlin, NH



◀ 1982
New York City Transit Subway Vehicles
New York City Transit
New York, NY



1954 ▶

New York State Thruway
New York State Thruway Authority
Monroe, Seneca and Genesee Counties, NY



1984

Center City Commuter Rail Connection
Southeastern Pennsylvania
Transportation Authority
Philadelphia, PA ▼



1983

RDC Coach Push-Pull Conversion
Massachusetts Bay Transportation Authority
Boston, MA ▼



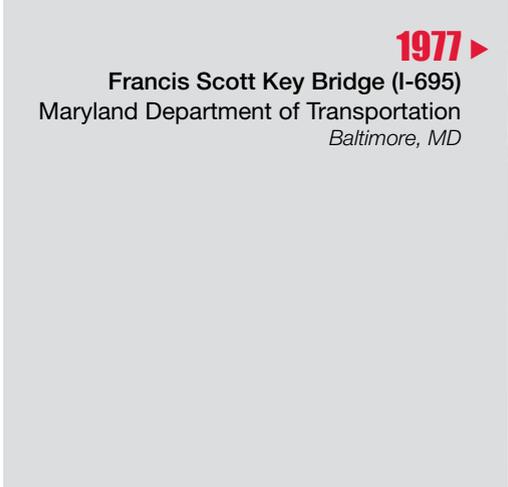
◀ 1970

Pottstown Expressway
Pennsylvania Department
of Transportation
Pottstown, PA



1992

Metrolink Taylor Yard Centralized
Storage & Maintenance Facility
Southern California Regional
Rail Authority
Los Angeles, CA ▼



1977 ▶

Francis Scott Key Bridge (I-695)
Maryland Department of Transportation
Baltimore, MD



▲ 1996

Summer Street Bridge Rehabilitation
City of Boston Public Works Department
Boston, MA



◀ 1980

Vienna Bypass/U.S. Route 50 Bridge
Maryland State Highway Administration
Vienna, MD

1998

PECK Drawbridge
& Bridgeport
Viaduct
Metro-North
Railroad
Bridgeport, CT ▼



◀ 1997

Light Rail System
Dallas Area Rapid
Transit Authority
Dallas, TX



1981 ▶

John D. Caemmerer West Side
Storage Yard & Maintenance Facility
Long Island Rail Road
New York, NY



1999 ▶

Long Island Rail Road
East Side Access
Metropolitan Transportation Authority/
New York Capital Construction
New York, NY





◀ **2003**

AirTrain JFK
Port Authority of New York & New Jersey
Queens, NY

2004 ▶

METROrail Project Management
Houston METRO
Houston, TX



2005 ▶

Orange Line Bus Rapid Transit Design-Build
Los Angeles County Metropolitan Transportation Authority (Metro)
Los Angeles, CA



▲ **ONGOING**

World Trade Center Transportation Hub
Port Authority of New York & New Jersey
New York, NY



2012 ▶

ALP-46A Electric Locomotive Procurement
NJ TRANSIT
New Jersey



ONGOING

High Speed Rail Project
California High Speed Rail Authority
Los Angeles-to-Anaheim, CA



◀ **ONGOING**

LYNX Blue Line Extension Light Rail Project
Charlotte Area Transit System
Charlotte, NC

ONGOING ▶
Modification of the I-485/I-85 Interchange
The Lane Construction Corporation for the North Carolina Department of Transportation
Charlotte, NY



ONGOING

Perris Valley Line
Riverside County Transportation Commission/Southern California Regional Rail Authority
Riverside County, CA



◀ **ONGOING**

Ottawa Light Rail Transit Project - Tunney's Pasture to Blair Station
City of Ottawa
Ottawa, Ontario





STV ACQUIRES ARCHITECTURE/VBN



With more than 50 years serving transportation, education, government and commercial clients in California, STV's recent acquisition, Oakland-based ARCHITECTURE/vbn (VBN), enhances the firm's West Coast presence with its impressive portfolio of work and a similar client-focused and quality-driven philosophy.

Founded in 1958, VBN is a registered green business with a portfolio that includes rail stations and transit centers, intermodal terminals, light rail and bus facilities. VBN has provided planning and design for significant West Coast facilities such as Millbrae Station, the largest U.S. intermodal terminal west of the Mississippi, which serves Bay Area Rapid Transit (BART) and Caltrain in suburban northern San Mateo County; the Long Beach Transit

Mall, a series of eight bus station shelters in Long Beach's major transit center; and Richmond Intermodal Station, part of a larger transit-oriented development linking to Amtrak inter-city rail.

STV and VBN were already familiar with each other prior to the acquisition. On the 16-mile BART extension from Fremont to San Jose, VBN was responsible for planning and design of the six stations, while STV designed maintenance facilities and infrastructure along the line. Both firms are also key players in the massive California High-Speed Train (HST) project – albeit in different areas of the state. STV provided planning and design for the Orange County to Los Angeles section,

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5



6



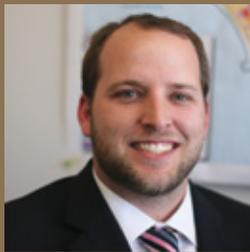
while VBN performed the same services for stations in the Central Valley Region, including one in Fresno expected to be the first station constructed and a prototype for the rest of the system. Once completed, the HST will be the first, truly-dedicated high-speed rail system in the United States.

“This acquisition brings VBN’s excellent reputation in our market areas in northern California to STV,” noted Eli Naor, AIA, a VBN principal who has become an STV vice president and head of the Transportation & Infrastructure Division’s California facilities group. “We will utilize our know-how and innovative skills to help STV further succeed in California and enhance its national presence.”

- 1 Bay Area Rapid Transit (BART) Millbrae Intermodal Station, Millbrae, CA
- 2 Marina Transit Exchange, Marina, CA
- 3 Long Beach Transit Mall, Long Beach, CA
- 4 6 Richmond Intermodal Station, Richmond, CA
- 5 Palo Alto Transit Center, Palo Alto, CA

Photos 1, 4, 5 & 6 © Russell Abraham Photography

MEET THE AUTHORS



Eric Banghart

Transportation Planner

Eric has contributed to a wide range of projects and programs at the federal and local levels, having served as an environmental specialist for the U.S. Environmental Protection Agency and as a transportation consultant for the City of Los Angeles Community Redevelopment Agency. He is planning lead for the Airport Metro Connection Project.



Tyler Bonstead

Project Manager, Transportation Planning

Tyler serves as STV's deputy project manager for the Airport Metro Connector alternatives analysis study. He also has managed the Metro Gold Line extension project and South Bay Metro Green Line Extension, as well as planning components of the California High-Speed Rail project, Perris Valley Line Metrolink extension, and other light rail, commuter rail and bus rapid transit projects.

Photo © Shutterstock



LAX CONNECTIONS

PLANNING A BETTER AIRPORT CONNECTION FOR

By Eric Banghart and Tyler Bonstead

In addition to being the third-busiest airport in the U.S. and the sixth-busiest in the world, the Los Angeles International Airport (LAX) is also one of the hardest to get to using public transportation. As a result, only four percent of the nearly 60 million annual passengers who pass through LAX get to it via public transportation.

One of the key reasons why the airport has little public transit ridership is because the nearest station to the Los Angeles County Metropolitan Transportation Authority (Metro) rail system, which includes nearly 90 miles of rail service, is located two and a half miles away. The Metro Green Line, a light rail line running between Redondo Beach and Norwalk within Los Angeles County, requires a 15-minute shuttle ride to reach the airport, not an ideal solution for airport patrons, as the shuttle is prone to gridlock-related delays during the airport's peak travel times.

Planners initially hoped the Metro Green Line, which opened in 1995, would connect directly to the airport, but faced with a variety of hurdles including funding, politics and Federal Aviation Administration regulations, the Metro Green Line was not able to directly connect. To solve these long-standing issues, ConnectLAX, a joint



LOS ANGELES

venture between STV and Parsons Brinckerhoff, was recently commissioned by Metro to plan a better connection between the Metro Green Line and LAX.

The study kicked off in the summer of 2011 by formulating, analyzing and screening all of the potential connection options as part of an alternatives analysis study. The team examined airport rail connections around the world to guide the designs at LAX, and asked the public what type of connection they would like to see.

Two main options were examined. The first involved extending the existing light rail system directly into the airport. The second entailed using a separate transit mode such as an automated people mover or bus rapid transit to connect to a nearby light rail station.

While a rail connection is a desirable option to most, many obstacles in the LAX Central Terminal Area (CTA) make that option difficult to design and construct. One of the CTA's major issues is its sheer size. Eight terminals currently lie in a ring that is over a half mile long and nearly a quarter mile wide.

**THE TEAM EXAMINED
AIRPORT RAIL
CONNECTIONS AROUND
THE WORLD TO GUIDE
THE DESIGNS AT LAX**



Fewer stations within the CTA may require longer walks or a transfer to an internal bus circulator, but could also reduce costs. While more stations would allow for shorter walks to terminals, they would significantly increase the cost of the project and the construction related impacts to the CTA.

Another major issue is that the CTA is already densely developed. The passenger terminals, elevated roadways, parking garages, utility plant, airport control tower, iconic Theme Building and vital components of airport operations are all very closely spaced. The ConnectLAX team is taking extreme care during the planning and design phases so that the proposed project will not impede the operation of the airport during construction or in the future.

The goal of the alternatives analysis phase is to narrow down the number of alternatives to four that will be carried forward into detailed design and environmental review. This draft environmental phase is slated for completion in late 2013. Providing residents and visitors with reliable and convenient public transportation to and from LAX will forever change their Los Angeles travel experience.

MEET THE AUTHOR



James M. (Mike) Good, P.E., PMP®
Bridge Manager/Senior Structural Engineer

With more than 18 years of structural engineering experience, Mike has extensive evaluation, design and management expertise for horizontal and vertical structures, including the condition assessment of bridges in accordance with National Bridge Inspection Standards, design of new and rehabilitated structures, forensic analysis of existing structures, and design of repairs for building foundations and support structures. Mike served as project manager on the Nicodemus Road Bridge project.



THE NICODEMUS ROAD BRIDGE

Community Focus Pays Off

By James M. “Mike” Good, P.E., PMP®

Liberty Reservoir is a Baltimore City watershed providing water to Baltimore City and the surrounding counties. Nicodemus Road, which winds through rural Carroll County, MD, crosses the Liberty Reservoir into Baltimore County by way of a 545-foot-long bridge. Decades of deicing salts, coupled with failing bridge joints had taken their toll on the Nicodemus Road Bridge, reducing the pier caps to not much more than sand and aggregate and raising concerns about the possible presence of lead-based paint on the steel beams.

The project crosses the Liberty Reservoir, a popular recreational venue and one of Baltimore City’s sources of drinking water. This presented a number of challenges including project funding, public relations, site issues and construction duration.

STV started designing a replacement bridge in 1999. Funded solely by Baltimore City, the project stalled several times during the design process due to lack of funding. After the last defunding of the project in late 2008, STV advised the city that, based on testing of the pier cap concrete performed eight years earlier, the bridge had a remaining useful life of just one to seven years. Based on that information, funding for construction of the bridge was quickly restored and construction began in October 2009.

In addition to major considerations about protecting the city’s drinking water supply were concerns about the city’s relationship with local residents. The Nicodemus Road Bridge is a popular fishing spot. A weekend rarely passes from early spring through late fall when fishermen aren’t lined up across the bridge, lines stretched out to the water 20 feet below waiting for “the big one.” Also, upscale residences overlook the



**IN JULY 2011, THE
NICODEMUS ROAD
BRIDGE REOPENED,
A FULL THREE MONTHS
AHEAD OF SCHEDULE
AND UNDER BUDGET**



eastern side of the reservoir, allowing homeowners to monitor the construction activity. The project required special attention as Baltimore City and its selected contractors would be on display for the two-year construction duration.

To maintain the good will of the community, the team made sure that fishermen were allowed to continue using the bridge until demolition began, even when the road was closed to vehicular traffic while the contractor was mobilizing for construction.

STV's resident engineer frequented the bridge during these first few months, talking with the fishermen, garnering their good will, and gathering information regarding their needs, wants and expectations. There was hope that once construction began in earnest, there would be few, if any, complaints to the city about the closure.

The contractor's schedule was ambitious, with two-thirds of their activities on the critical path. Through diligent schedule reviews, STV was able to keep ahead of the schedule so that the project didn't fall behind. Using digital delivery methods, STV was able to drastically cut down the usual turnaround time on drawing reviews between STV, the city and the contractor.

In July 2011, the Nicodemus Road Bridge reopened under budget and a full three months ahead of schedule. Fishing rods in hand, the locals were on the bridge the day it re-opened. The city responded to the project's success by providing STV with additional bridge design work.

CUTTING THE COMMUTE IN SOUTHERN CALIFORNIA

By **Richard A. Quirk, AIA**



Courtesy of Riverside County Transportation Commission

MEET THE AUTHOR



Richard A. Quirk, AIA
Architect/Project Manager

Richard joined STV in 2007. An architect with more than 25 years of experience, he provides design and project oversight for transportation, institutional, healthcare, commercial and residential projects. Currently based in STV's Rancho Cucamonga office, Richard is the project manager for the Perris Valley Line project.

Residents of Riverside County live in one of the fastest-growing areas in the country and face some of the longest commutes in Southern California. With a population increase of 41 percent since 2000, it is now the nation's second largest county and is projected to reach three million people by 2020. By that time, the number of vehicles using the I-215 corridor is expected to increase to 200,000 per day. This dramatic growth means long commutes for residents and a huge demand on existing outdated transportation systems.

To help address these conditions, STV is providing engineering and environmental clearance services to the Riverside County Transportation Commission (RCTC) for the construction of the Perris Valley Line (PVL). This 24-mile line, which runs from Riverside through Moreno Valley to Perris, CA, is the first major extension of the Southern California Regional Rail Authority's (SCRRA) Metrolink commuter rail system in more than 10 years. The project will extend existing Metrolink commuter rail service 24 miles further into Riverside County directly serving the communities of Riverside, Moreno Valley and Perris.

The multifaceted project is not just 20 plus miles of track. It includes specialized services like track replacement and rehabilitation, train stations, railroad bridges, drainage facilities, at-grade crossings, pedestrian safety ramps, quiet zones, sound walls, and a layover facility. Also, the project has been designed to permit future expansion of service at all stations including parking and platform extensions, second platforms and provisions for double tracking along the alignment. All stations have been designed as multimodal centers.

Managing a project of this scope requires STV's project team to place a high priority on closely coordinating with many public and private groups including Riverside County Transportation Commission, Southern California Regional Rail Authority, Federal Transit Administration, Burlington Northern Santa Fe (BNSF), Caltrans, Riverside County, the California Public Utilities Commission, the Construction Management Team, utility companies and other local agencies and jurisdictions.

Also, close coordination between the STV design team and project stakeholders was required to develop a construction plan that accommodates ongoing BNSF freight operations, the protection of environmentally sensitive areas with federally protected species habitat, construction in a flood zone, a large number of utility relocations, and a high level of community involvement. One benefit of an early collaboration with utility companies was the facilitation of the relocation of conflicting utilities prior to construction, which eliminated the risk of increased costs and schedule delays during construction.



Courtesy of Riverside County Transportation Commission



Over the past 15 years, Metrolink has proven to be Riverside County's best alternative to driving congested freeways such as State Routes 60, 91 and 55 in Orange County. The Metrolink train has seven lines, 55 stations and takes 44,000 passengers per day from stations in Riverside, Corona and Pedley to locations in Los Angeles and Orange Counties. The Metrolink locomotives are powered by ultra-low-sulfur diesel fuel, considered the cleanest and most efficient fuel available today for liquid-fueled locomotives.

The PVL will help relieve traffic congestion along its entire route, improving conditions on the I-215, SR-60 and SR-91. It will eliminate thousands of vehicle trips per day and attract an estimated 5,700 riders daily, providing a 40-minute commute from South Perris to downtown Riverside compared to the projected 80-minute commute for rush hour traffic in 2025.

The PVL is one of the first Federal Transit Administration Small Starts projects to be implemented, and many of the documents that the STV team prepared have been used as templates for other Small Starts projects around the country.





KENSINGTON INTERLOCKING IMPROVEMENTS

A Faster Commute for Indiana Commuters

By Paul E. Bobby, P.E., and Patrick J. Bryant, P.E.

By 2009, Kensington Interlocking in Chicago, one of the busiest interlockings in North America, had developed into a critical bottleneck. With a growing number of Indiana residents commuting to work in Chicago on Northern Indiana Commuter Transportation District (NICTD) commuter trains, as well as 130 passenger trains and 20 freight trains traveling through each day, the almost 100 year-old interlocking was struggling with prevalent service delays.

Kensington Interlocking consists of four Metra commuter main tracks and four Canadian National (CN) freight tracks, which run parallel to each other on the former Illinois Central Railroad right-of-way. Metra is the commuter rail division of the Illinois Regional Transportation Authority. The existing NICTD route entered the interlocking from Indiana on the east, crossed the CN tracks to join the Metra commuter mains, and traveled onward to Chicago on the Metra tracks.

To improve the interlocking functionality and reduce travel times and delays, NICTD proposed the construction of a second route across the interlocking and improvements to the signal system. The new route would utilize a series of cross-overs and overhead wire on the CN tracks to reach the Metra mains and continue the commute into downtown Chicago.

STV provided construction management services for the \$15 million interlocking improvements and was responsible for field inspections, contract administration, project controls, quality assurance, safety monitoring and procurement assistance. The firm also coordinated among the rail agencies to schedule track availability for construction and keep the project moving forward. The majority of the work was performed overnight and during off-peak hours to avoid service disruptions.



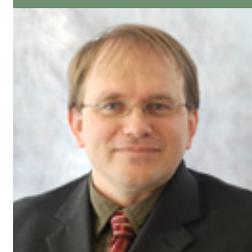
MEET THE AUTHORS



Paul E. Bobby, P.E.

*Director of Railroad Engineering
Midwest Region*

Paul has many years of experience in the design, construction and management of railroad projects. He began his career as a track laborer and has grown to earn a solid reputation within the rail industry for his knowledge of passenger and freight rail design and construction. Paul earned a Bachelor of Science in civil engineering from the University of Wisconsin/Platteville. He is a member of the American Railway Engineering and Maintenance-of-Way Association and the Maintenance-of-way Club of Chicago.



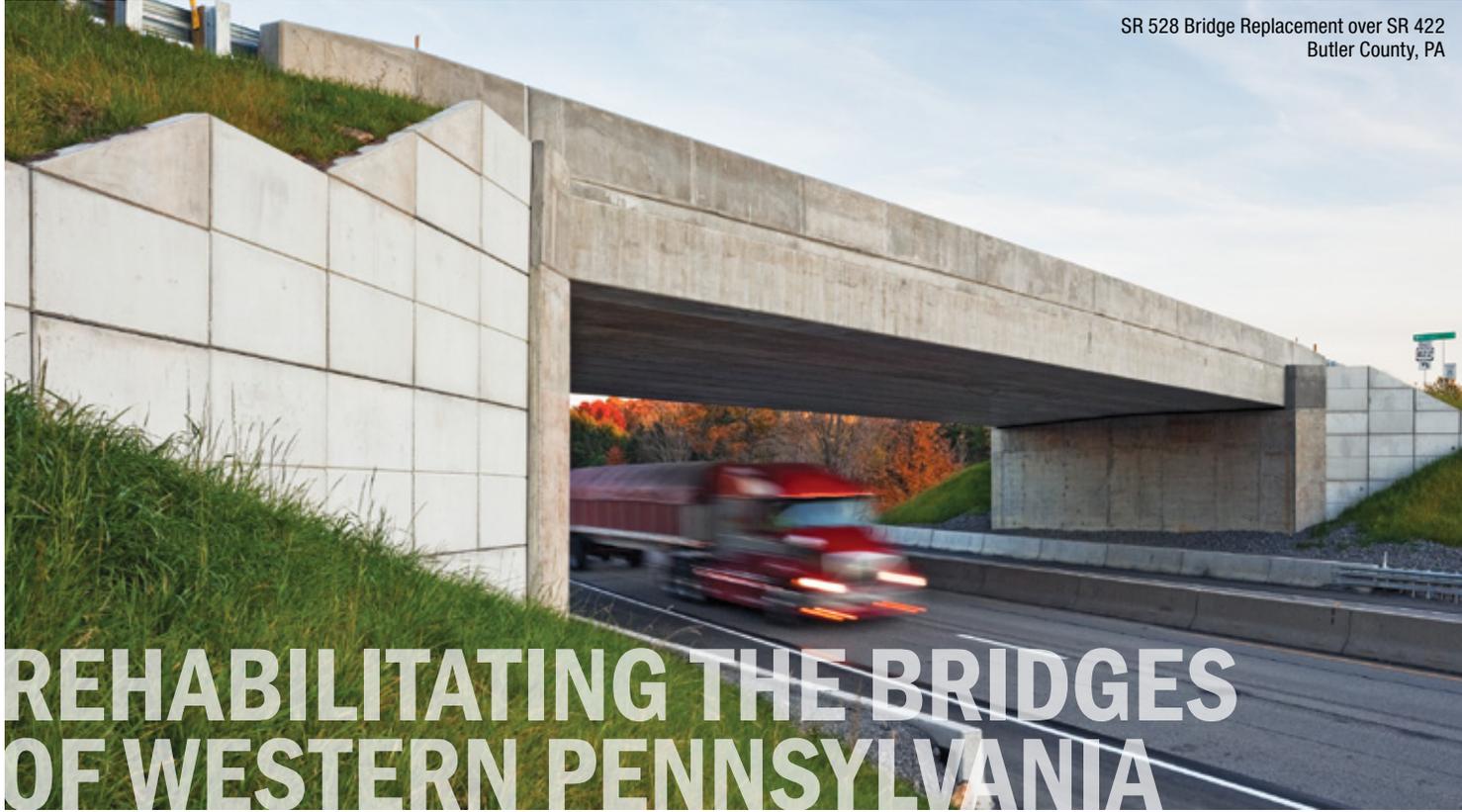
Patrick J. Bryant, P.E.

Project Engineer

A civil engineer with more than 15 years of experience, Patrick has been involved in all aspects of design and construction of transportation facilities and specializes in railroad and highway design. He has a Bachelor of Science in civil engineering from the University of Illinois at Chicago.

Additionally, STV redesigned significant portions of the interlocking's signal system, track and operational control system, and obtained design approval from the affected railroad parties. Modifications to the existing non-vital code-control system used to communicate with Metra's Consolidated Control Facility were also redesigned in preparation for the new route, switches and signals. STV assisted NICTD with the signal material procurement process as well as detailing the temporary signal cutovers, which were required to sequence construction and enable a seamless transition to the new signal system.

With the addition of the second route and the improved signal system, the functionality of the interlocking has improved significantly, minimizing delays and impacts to NICTD riders' commutes.



REHABILITATING THE BRIDGES OF WESTERN PENNSYLVANIA

All photos © Jim Schafer Location Photography

By Jeffrey A. Sestokas, P.E.

With 25,000 state-owned bridges, Pennsylvania has the third-largest number of bridges in the nation. At an average age of 50, over 6,000 of these bridges are classified as “structurally deficient.”

While a structurally deficient bridge is safe, it needs costly repairs to bring it up to current standards. To rehabilitate and, in some cases, replace these deficient bridges, the Pennsylvania Department of Transportation (PennDOT) turned to STV for consultant assistance.

STV provided design services for numerous bridge projects to PennDOT through the design-bid-build and design-build project delivery processes. Here is a closer look at some of STV’s efforts, from 2004 to 2010, to bring western Pennsylvania’s bridge inventory up to current standards. These projects were delivered through the design-bid-build process.

SR 528 Bridge over SR 422, Butler County, PA

The combination of weather extremes, traffic volume and rock salt ate away at the structure and the piers of the three-span, 150-foot-long bridge carrying SR 528 over SR 422 in Butler County, PA. Completed on an accelerated schedule, the new, 106-foot-long single-span adjacent concrete box beam replacement bridge was more economical to construct and maintain and enhances traveler safety by eliminating obstructive piers on SR 422.

STV completed the preliminary engineering one month ahead of schedule and expedited delivery of final plans, specifications and estimates five months ahead of the original schedule.

“The SR 528 over SR 422 bridge replacement project is an excellent example of meeting the needs of the traveling public,” said PennDOT District Executive

Joseph P. Dubovi III, P.E. “This project allowed us to improve community safety concerns through eliminating the threat of a long-term bridge closure.”

Vicksburg and Frankstown Bridges, Blair County, PA

The Vicksburg Bridge, a 40-foot, single-span concrete-encased bridge spanning Halter Creek, and the 140-foot Frankstown Bridge, a two-span concrete arch spanning the Frankstown branch of the Juniata River in Blair Township, PA, are located in flood-prone areas.

STV investigated the best types of replacement bridges and performed studies to address flooding issues. Selecting the most economical bridge types that fit the site conditions, the firm designed a 40-foot-long, single-span composite prestressed concrete spread box-beam bridge to replace the Vicksburg Bridge. The PA Type 10M bridge barrier railing

SR 36 Bridge Replacement over Halter Creek (Vicksburg Bridge) Blair County, PA



SR 36 Bridge Replacement over Frankstown Branch of Juniata River (Frankstown Bridge) Blair County, PA



SR 2087 Bridge Replacement over US 30 (Greensburg Pike Bridge) Allegheny County, PA



Left, before replacement; right, after replacement.

allows better sight distance for drivers. To replace the Frankstown Bridge, STV designed a 142-foot-long two-span composite prestressed bulb-T structure. Both replacement bridges are also wider to accommodate traffic.

Greensburg Pike Bridge, Allegheny County, PA

The 89-foot, single-span, through-girder SR 2087 Bridge over US 30 (Greensburg Pike Bridge) was built in Allegheny County, PA, in 1932. Complex site constraints, in combination with the close proximity of the North Versailles Township municipal campus development and utility construction that occurred after the original bridge

was built, challenged STV to design a new structure that met current standards. STV's solution was to design a context-sensitive bridge, approaches and ancillary features to meet these needs.

In order to maintain existing connections to US 30, the replacement bridge was constructed over the highway's old horizontal alignment. Design compromises were made to connect the highway's new vertical alignment, particularly an asymmetric vertical curve at the intersection of the north approach of SR 2087.

The new design includes construction of a 156-foot single-span, curved compos-

MEET THE AUTHOR



Jeffrey A. Sestokas, P.E.

Associate Pennsylvania Chief Highway Engineer

Jeff's expertise in highway and bridge engineering includes 25 years of experience in project management and design for a wide variety of transportation infrastructure projects. Since joining STV in 1998, he has been responsible for leading major projects for clients such as the Pennsylvania Department of Transportation and the Pennsylvania Turnpike Commission. Under Jeff's leadership, STV's Pittsburgh office provides transportation, highway and bridge planning, engineering and design, and construction inspection services to Pennsylvania's local, regional and state agencies and toll authorities.

ite steel multi-girder bridge with a grade separation wall at the southern approach. The grade was raised 11 feet at the south approach to accommodate construction of the new structurally redundant deck structure with adequate vertical clearance to replace the old through-girder bridge. The grade change necessitated a modification to the adjacent parking lot of the North Versailles Township municipal campus.

The new bridge length and geometry also meet clear-zone requirements for SR 30 and will accommodate construction of an additional two lanes on SR 30 in the future.



RESTORING NC 12 LINK TO THE OUTER BANKS

By Mark F. Robbins, P.E.

On Saturday August 27th, 2011, Hurricane Irene made landfall in North Carolina and sliced across the Outer Banks, severing NC 12 in two places. By Sunday, a massive force of more than 1,800 North Carolina Department of Transportation (NCDOT) employees, almost 400 National Guard soldiers and more than 300 state Highway Patrol troopers were out working to repair the damage. The storm left at least seven people dead and about 444,000 households without power.

The Outer Banks is a 200-mile strip of islands off of the North Carolina coast, which is largely linked by NC 12 making the restoration of that connection a key element of Hurricane recovery efforts. The most significant damage to NC 12 involved

a breach in the Pea Island section where a 160-foot-wide inlet was cut between the Pamlico Sound and the Atlantic Ocean, isolating the coastal communities from the mainland.

Given the critical need of access to the communities, the economic impacts and the environmentally sensitive nature of the breach area in the Pea Island National Refuge, a temporary bridge solution was selected by the NCDOT (working in conjunction with other state and federal agencies) as a first step to restoring the connection along NC 12.

NCDOT retained STV to design a substructure system to support a temporary bridge spanning the breach. STV

The prefabricated span is placed on top of temporary anchorages.



Two types of galvanized pilings are utilized for the temporary anchorages.



Below: Hurricane Irene breached the Pea Island section, cutting a 160-foot-wide inlet between the sound and the Atlantic Ocean.



Courtesy of North Carolina Department of Transportation



Mark F. Robbins, P.E.

Vice President

Mark manages the construction services group for the Southeast region of STV, and has more than 20 years of experience providing and managing bridge and roadway design throughout the area. He has particular expertise in design-build for highway projects. Prior to joining RWA in 1998, he had an 11-year career with the North Carolina Department of Transportation.

collaborated with NCDOT to determine the project design requirements and began work immediately. The objective was to have design and construction plans completed so available materials and construction equipment could be delivered concurrent with other NC 12 repair efforts into the storm-affected area.

In response to the emergency, STV team members worked throughout the Labor Day weekend to produce the design and construction plan details for the temporary bridge foundations.

A prefabricated, five-span, 664-foot-long bridge was selected for the crossing of the new inlet. The bridge profile was raised

to minimize the potential storm forces that the temporary bridge might experience in its anticipated three to five year service life. Given the elevation of the approaches on the island, the end spans would be within the range that could be subjected to storm forces. In response, STV developed temporary anchorages for these locations. STV's design used two types of galvanized steel piling for the project's six substructure elements.

The new bridge was opened just 43 days after Hurricane Irene left North Carolina. STV is currently preparing the design and construction plans for the proposed two-mile-long permanent bridge, which will be constructed to address potential future breaches in this section of NC 12.

PEOPLE ON THE MOVE

Peter W. Fedun, P.E. has joined STV as a project manager, bringing to the firm more than 25 years of rail transit design experi-



ence. He currently serves as deputy project manager for engineering on the City of Ottawa Tunney's Pasture to Blair Station project. In that role, he is managing the transit systems, tunnel and

geotechnical disciplines during the preliminary design phase of the 7.8-mile Ottawa, Canada, light rail transit project. Prior to joining STV, he was with a leading international planning, engineering, program and construction management firm. Peter has served in various capacities including discipline lead, division director and project manager. He has prepared contract documents used to procure conventional design-bid-build, design-build, design-build-operate-maintain (DBOM), and build-operate-transfer (BOT) transit systems. His management skills are complemented by his light rail transit (LRT), heavy rail and high-speed rail knowledge, which he acquired while working on major transit projects throughout North America and Asia.

Jennifer L. Schwaller has been named the Transportation & Infrastructure Division's (T&I) Midwest Region transportation planning manager. After eight years in STV's Charlotte,

NC, office, Jennifer relocated to our Kansas City office where she is responsible for highway/roadway and transit planning activities



in Kansas and Missouri, and for identifying new markets in surrounding states to support the firm's continued growth. Jennifer has 13 years of experience in highway and transit

planning; analysis of environmental impacts; and the preparation of planning studies and environmental documents, including alternatives analyses, feasibility studies and National Environmental Policy Act documents. She has worked with several departments of transportation, Federal Highway Administration (FHWA), Federal Transit Administration (FTA) as well as numerous state and local government agencies.

Gregory Kern, AICP, has joined STV as an Orlando, FL-based transportation planner. Gregory is responsible for leading multimodal transportation planning services in T&I's Central Florida Region. He brings more than 35 years of transportation planning experience to the firm and has more



than 20 years of experience in the areas of multimodal transportation planning, com-

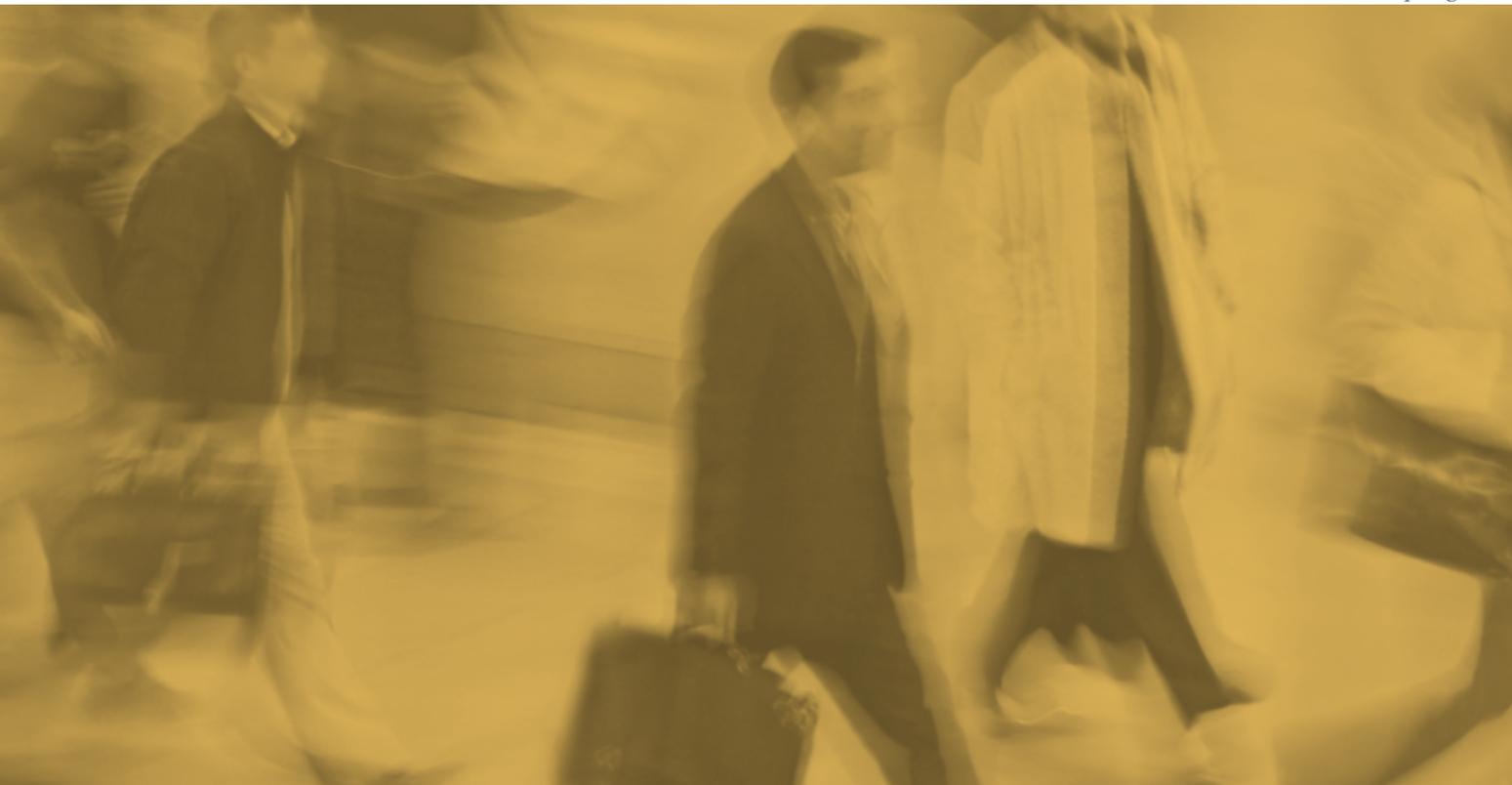
prehensive planning and land-use analysis. He has extensive experience in directing roadway, trails and transit planning and preliminary engineering studies for municipalities, counties, transportation planning organizations and the Florida Department of Transportation.

Tyler R. Bonstead, based in STV's Los Angeles office, has been named T&I's



national planning manager. Tyler is a transportation planner with more than seven years of diverse experience managing the planning and design of high-speed rail, light rail

transit, commuter rail and bus rapid transit systems. He has served as project manager and planning task leader on projects covering all facets of the project development process, from planning feasibility studies and route and stations alternatives analyses, to environmental impact statements and preliminary engineering activities. Tyler has extensive experience working with the FTA, the Federal Railroad Administration, and state and federal environmental regulatory agencies. He is currently involved in several cutting-edge programs including the nation's first true high-speed rail service. Tyler was also recently selected as one of Mass Transit magazine's "Top 40 under 40."



Brian P. Dwyer has joined STV as an operations planner in the Boston, MA, office. Brian is a senior transportation planner with more



than 20 years of experience serving in leadership roles in the rail industry. At STV, he provides operation and maintenance oversight for major rail initiatives throughout North America,

including the City of Ottawa's proposed 7.8-mile light rail line from Tunney's Pasture to Blair Station. During his career with the Massachusetts Bay Transportation Authority, Brian worked as the director of light rail operations and was responsible for the operation of the country's largest light rail system. He also served as the primary editor of the agency's Rail System Safety Program that outlines policies and procedures for operating and maintaining light and heavy rail, commuter rail, bus operations, bus rapid transit, commuter boat, and paratransit services.

Robert P. Gross has joined STV as a T&I business development manager for Pennsylvania and New Jersey in the Atlantic City, NJ, office. Bob has more than 30 years of experience as a business development manager and project executive. As the former



deputy CEO of the Delaware River Port Authority, he managed the budget for approximately \$1 billion in capital improvement projects for the Ben Franklin, Commodore Barry and Walt Whitman bridges in Philadelphia. He also provided executive oversight for the Port Authority Transit Corporation high speed rail improvements. As the former executive director of the Atlantic County Improvement Authority, Bob directed the successful completion of more than \$850 million in public improvement projects.

Charles G. Ardilio has joined STV as manager of Intelligent Transportation Systems (ITS) with the Vehicles, Systems and Security group in the New York office.



Chuck will be responsible for expanding the core systems business to include ITS and for developing our ITS business on a national basis. Chuck brings more

than 40 years of combined systems engineering, equipment development, marketing and new business development experience. His ITS experience began with its inception in 1994, and he has additional diverse systems experience in transit, security, complex military, naval and avionics systems. Prior to joining STV, he was with Dunn Engineering Associates for nearly 20 years, most recently as vice president of the Security Systems group.

Chuck has supervised several communication equipment research and development projects, published technical reports and articles on ITS, and participated in the preparation of FHWA reference manuals. Recently his ITS project involvement with the I-278, Brooklyn-Queens Expressway, 61st Street to Broadway, including the reconstruction of the Roosevelt Avenue Bridge, received the American Society of Civil Engineers Long Island Branch 2010 Project of the Year Award.

John W. Batey IV has returned to STV as a Philadelphia-based engineering specialist in our Vehicle Systems & Security group. John brings to his position proven experience in



railroad related project management, design engineering oversight and maintenance planning of transit vehicles. He has particular expertise in managing large design-build

vehicle procurement programs. John was also responsible for managing the design stage of a Federal Railroad Administration-compliant positive train control system. He has performed work for major transportation clients including NJ TRANSIT, Maryland Rail Commuter, Virginia Railway Express and Chicago Metra. John's earlier work with STV included serving as a vehicle specialist and project manager on variety of locomotive and coach procurement projects.

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