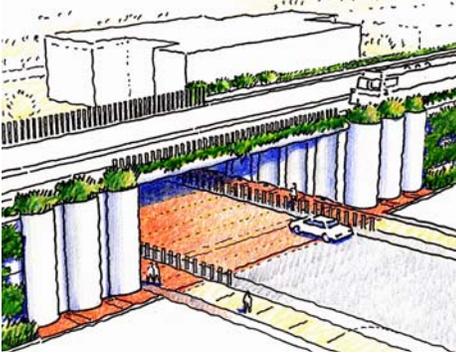


GRADE SEPARATION

WICHITA CENTRAL CORRIDOR RAILROAD



Wichita, Sedgwick County, Kansas

City of Wichita

Kansas Department of Transportation (KDOT)

Union Pacific Railroad

Burlington Northern Santa Fe Railroad

1999-2003

Project Type: Urban Non-freeway; Railroad Grade Separation

PURPOSE

In the 1990s, Wichita began to explore the impact of growth on its existing transportation facilities, land use, and development. A specific effort was to assess the increased train traffic going through the city due to the merger of Union Pacific and the Southern Pacific railroads. Following technical analysis on how to reduce the disruption, including matching future demands with public facilities and improvements, ten separate railroad-street grade separations were identified.

DESCRIPTION

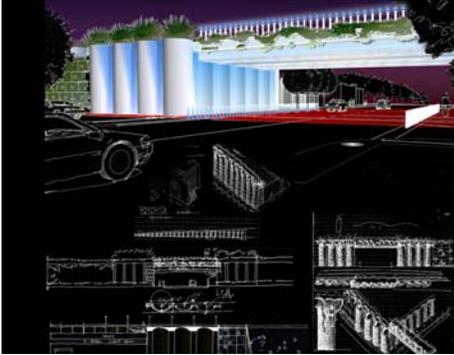
One of the four original projects, the Central Rail Corridor (elevated railroad over Douglas, 1st, 2nd, Central, Murdock, and 13th Streets with the tracks back at grade at 17th Street) has been completely designed and is scheduled for construction in 2005. The Central Rail Corridor calls for a facelift, better lighting, and other improvements to the Douglas bridge.

PUBLIC ENGAGEMENT

Throughout the transportation planning process, several public meetings, council presentations, and other outreach efforts were conducted. These included multiple presentations to the City Council at each critical stage of the project development for their review and approval. Presentations were made to the Wichita Design Council to develop and review the context sensitive design. Presentations were made to the Historic Preservation Board regarding rehabilitation efforts for the Douglas Bridge and preservation of the history associated with 1st and 2nd Street bridges. Finally, the community was invited to presentations by the District Advisory Board in Districts 1 and 6. These public engagement efforts proved to be very effective by involving all the members of the community.

CONTEXT SENSITIVE SOLUTIONS APPROACH

To determine the appearance of this two-mile structure, the design team comprised of engineers, urban designers, and an artist developed a process of a comprehensive site analysis of the rail corridor that included extensive site photography, visual analysis, and research of the rail line's history. Once the analysis was completed, the urban designers and artist presented an exciting and innovative solution. To provide a "green" structure desired by the City, the design team developed a "living wall" approach. By casting holes in the pre-engineered retaining wall system at virtually no extra cost, plants would be allowed to grow from within, creating the appearance desired by the City.



The design team also determined that the railroad bridge abutments would be cast-in-place white concrete, echoing the smooth cylindrical shapes, such as dairy storage units and grain elevators, that prevail along the corridor and reflect the city's history. From these "pillars" grow tall native grasses that mimic the grain crops grown throughout Kansas, pay tribute to the native prairie landscape, and acknowledge the historic uses of silos as grain storage devices. A white steel tubular planter with cascading plants would span the street at each bridge crossing and serve as a gateway in and out of the central business district (CBD). White steel bollards with cobalt blue industrial light fixtures line the top of the bridges, mimic airport taxiway lights and provides a reminder of Wichita's aviation industry. Red brick pedestrian walks under the bridges connect the CBD to the Old Town District and the east side of Wichita and pay homage to the pavement surfaces historically used in the city.

The new corridor was designed to be inviting and attractive to pedestrians walking under the bridges and along the retaining walls of the newly elevated corridor, while reducing disruption caused by increased train traffic through the city. The proposed bridge design complements the surrounding community and de-emphasize the tall vertical retaining walls necessary for two miles of elevated track. Above all, the corridor remains "green" and serves as an amenity to the Old Town District and adjacent neighborhoods.

OUTCOME



Unlike any other freight rail solution provided in the area, the corridor would be raised 26 feet above the ground and would incorporate a design that blended with the community. By raising the corridor, rail operations would continue as usual and vehicles and pedestrians would be able to travel under the corridor and connect the community and allowing development to occur. The project's design was continually refined and resulted in alternates placed in the bid documents. Final selection of context sensitive solutions included red brick pavers, blue cobalt lighting on top of the bridges, wall washer lights, red brick pavers, and limited landscaping. The living wall concept was deemed too costly and would have required maintenance for which the City did not want to become responsible. Instead, concentrated plantings were included at the grade separation locations. The project was successfully bid in March 2005 and construction will be completed in early 2008.

CHALLENGES

One of the unique challenges of this project was to maintain the partnership between the City and the railroads in creating rail corridors that not only meet the needs of the rail operators, but also the Wichita community and businesses

served. For more than 100 years this north-south corridor has served as the primary rail access route to large industrial factories, including Boeing, and the grain silos that dominate the skyline and landscape along the rail corridor. Because of these uses, the corridor has long been considered industrial and a deterrent to new development along the eastern edge of Wichita's CBD. However, the corridor still remains a vital freight rail link connecting Wichita's agricultural and aviation industries to both coasts of the United States. It is these industrial uses that have shaped the landscape of the corridor and given rise to its unique architectural features.



Recent revitalization trends in the historic neighborhoods, increased need for developable land near the CBD, and the revival of the old town warehouse commercial district adjacent to the rail line have caused the City to direct its attention toward future residential and commercial growth for this area. The biggest obstacles to this growth are the three existing railroad bridges and eight at-grade railroad crossings that comprise the corridor. The old bridges are too low for modern trucks to pass safely beneath and have other safety issues such as sight distances. The at-grade crossings are dangerous and create time-consuming delays for motorists due to the length and number of trains that use the rail line each day.

The new elevated corridor itself also creates a potential challenge to revitalization. The finished structure would stand 26 feet above street level, creating a two-mile wall and potentially a community barrier.

FUNDING Funding will come from the State of Kansas, Federal TEA-21, City of Wichita, and Union Pacific Railroad

- LESSONS LEARNED**
- Close communications with the railroads is vital when new context sensitive design elements are introduced
 - Community acceptance of the visual elements of the design is vital to secure and keep the Mayor and Council support for the project

KEY WORDS *Applicable Project Delivery Stages:* Administration, Planning, Design

Applicable Transportation Professionals: Roadway Engineers, Structural Engineers, Civil Engineers, Landscape Architects, Historians

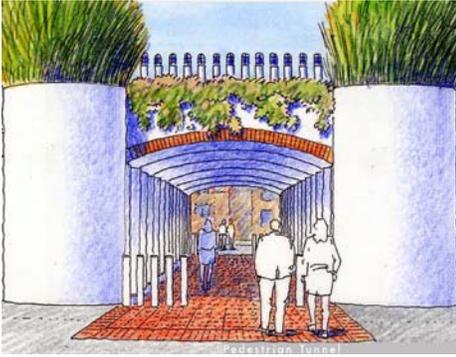
Applicable Transportation Modes: Streets, Transit, Railroad, Bicycle, Pedestrian

Transportation Topics: Visual Quality, Environmental Justice, Safety, Mobility

WEB LINKS <http://www.wichitagov.org/>

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