

Utah I-15 NOW

Calculated Engineering and Design-build for Rapid Delivery of Improvements

EXECUTIVE SUMMARY

Utah Department of Transportation's (UDOT's) primary objective for the Interstate 15 New Ogden Weber improvements (I-15 NOW) was the fast and effective delivery of upgrades. Even the project nickname, I-15 NOW, suggests immediate action. The key challenges to rapid development were cost effectiveness, accommodating multi-modal transportation options, and minimizing disruption to traffic and adjacent rail operations.

The 9.3-mile project consisted of widening the segment of I-15 from 31st Street to 12th Street (in Ogden) from four to eight lanes and the segment from 12th Street to 2700 North (in Farr West) from four to six lanes. The MPO considered aspects of the project as early as 1997, but other priorities, including planning for the Olympic Games, took precedence. By 2000 the state legislature was pressing an accelerated timetable for the I-15 NOW improvements because of the outdated roadway's numerous safety deficiencies along with notorious traffic congestion at the 31st Street interchange. Five railroad crossings, 22 bridges, and 5½ interchanges presented the major engineering hurdles. Few environmental issues were raised during the National Environmental Policy Act (NEPA) process, which began in 2001. UDOT's challenge was to provide the best roadway improvements with the limited funding available.

Several distinctive elements facilitated design and engineering for the project. At the end of the NEPA process in 2004, UDOT decided to proceed with a design-build approach for delivery. Discussions between UDOT and the Federal Highway Administration (FHWA) led to an Accelerated Construction Technology Transfer (ACTT) workshop in 2005. The workshop brought together experts to examine potential project hurdles and solutions. Supplemental funding approval by the state legislature enabled the project to move forward and implement its full scope. The I-15 NOW project broke ground in spring of 2006 and at the time of this writing is 65 percent complete.

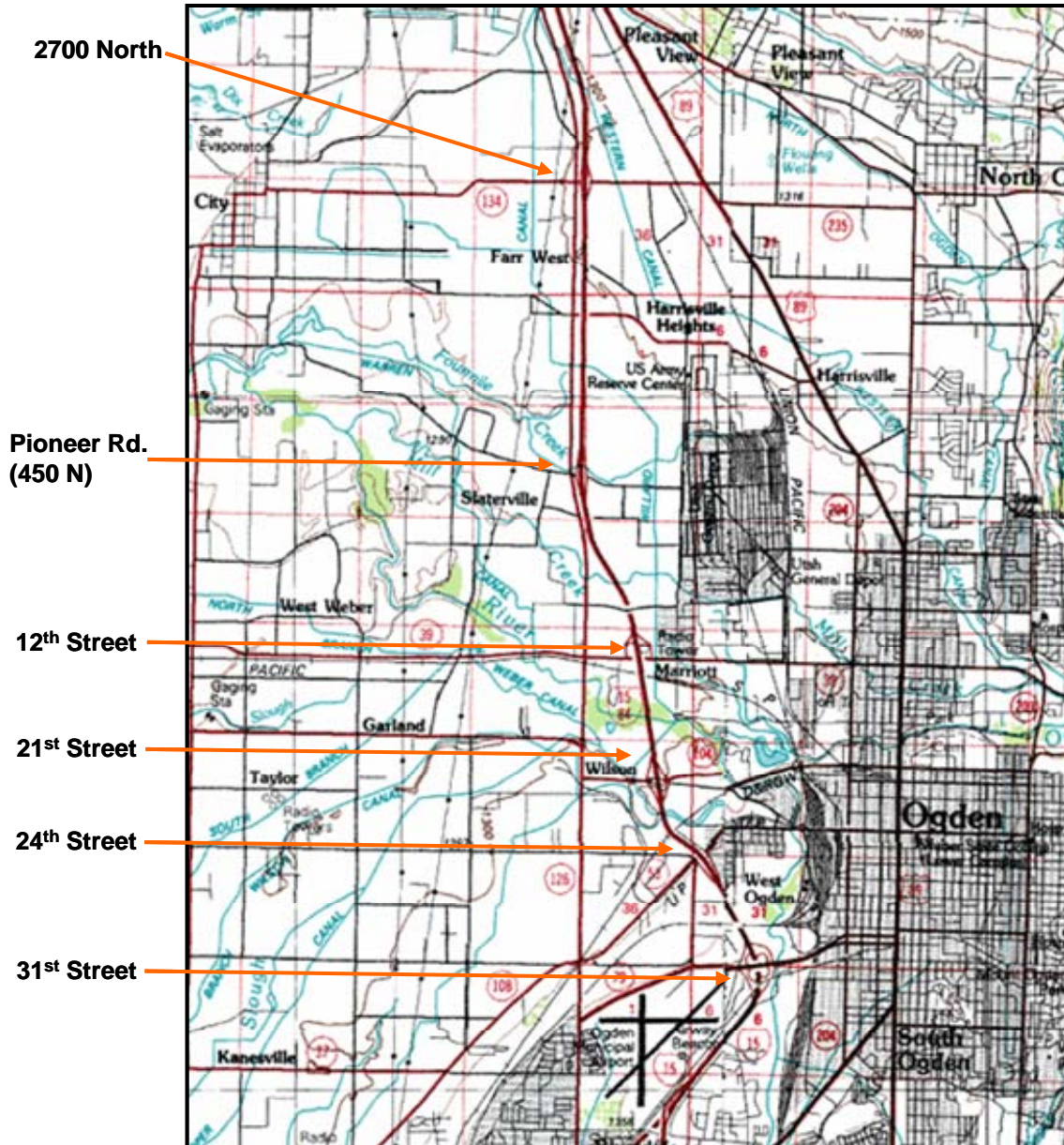
BACKGROUND

First constructed in the late 1950s and early 1960s as part of the nationwide interstate highway system¹, Interstate 15 (I-15) is a major north-south roadway connecting California, Nevada, Utah, Idaho, and Montana. In addition to serving as a national transportation corridor, I-15 is the only major north-south road for high-speed travel within Utah.²

When it was constructed, the section of I-15 in the project area was classified as a Rural Interstate. However, the growth of Ogden and nearby municipalities in the last decade has altered that status. The I-15 corridor runs north of Salt Lake City and serves as the major artery for commuters between Salt Lake City and communities to the north (Figure 1). In the mid-1990s Salt Lake City won their bid to host the 2002 Winter Olympic Games, bringing Utah worldwide media visibility and an economic influx. The Olympic Games also posed a challenge to state leaders because I-15 required major improvements to showcase the best of Utah for a

worldwide audience. These improvements entailed much up-front planning and significant investment in infrastructure improvements.

Figure 1. Project Area Showing Interchanges



Project Overview

The I-15 New Ogden Weber improvements (I-15 NOW) project is widening and improving 9.3 miles of highway passing through the cities of Ogden, West Haven, Marriott-Slaterville, Farr West, and some unincorporated parts of Weber county.³ The interstate is being widened from four to eight lanes between the southern terminus at 31st Street in Ogden, and the 12th Street interchange, essentially the midway point. Additionally, the interstate is being widened from four to six lanes from 12th Street to the northern terminus at 2700 North in the town of Farr West. The project corridor includes the mainline of I-15 and the connection of east-west arterial roads

at five full interchanges and one half interchange. Utah Department of Transportation (UDOT) also must consider five railroad crossings and plans for commuter rail. The reconstruction is one of the largest projects UDOT has ever undertaken.⁴

The City of Ogden was a central link in the westward expansion of the United States in the nineteenth century. Ogden was a main terminal for the transcontinental rail line and continued to be a major railroad town from the 1870s through World War II. The Golden Spike National Monument, where east and west railroads were linked, is about 40 miles northwest of Ogden. The City of Ogden occupies a linear region 15 miles wide at its widest point; with the Wasatch Front mountain range to the east and salt flats and the Great Salt Lake to the west. Ogden's transportation system is focused on the north-south movement of goods and people. UDOT's plan for the I-15 NOW project, to widen and replace mainline and ramp pavements, also includes:

- Replacement of 18 bridges;
- Rehabilitation of four bridges;
- Construction of two new bridges;
- Addition of noise walls throughout the project area; and
- Incorporation of elements of UDOT's Intelligent Transportation Systems (ITS), such as traffic cameras, electronic message boards, and pavement sensors.

Project Drivers

The need for additional road capacity in Weber County and an upgraded, safer roadway were the driving factors for this project. Rail lines into Ogden make I-15 the central arterial roadway for ground shipping in the region, adding to traffic volume. I-15 provides central access to Hill Air Force Base, which is located south of the I-15 NOW project area and is the largest single employer in the state. I-15 also links to the city's airport. The classification of I-15 through Weber County will likely be upgraded to Urban Interstate.

Traffic congestion on I-15 is a function of high traffic volume on an outdated roadway, and reconstruction is necessary to bring the corridor up to current design standards and increase safety. Major issues with I-15 include:

- Pavement was at the end of its service life;
- Bridges did not meet current seismic design criteria;
- Vertical and lateral clearances on I-15 and the Union Pacific Railroad (UPRR) were insufficient;
- Seven structures associated with the project were considered structurally deficient or functionally obsolete;
- Twenty percent of the mainline highway was operating at a level-of-service (LOS) rating of E or F in 2001 (Figure 2), levels which were projected to worsen over time;
- The roadway accident rate was 14 percent above similar facilities, and most of the accidents were rear-end collisions associated with slow or stopped traffic;⁵ and
- The constant congestion at the 31st Street interchange was a serious problem requiring an immediate solution.

Larger objectives for the I-15 corridor include the CANAMEX and the Strategic Highway Network (STRAHNET) initiatives. The CANAMEX Corridor Project is a joint project of Arizona, Nevada, Idaho, Utah and Montana. The CANAMEX objective is to develop a continuous roadway from Mexico through the United States into Canada in order to establish a safe and efficient trade and transportation corridor that will accelerate job growth and tourism. STRAHNET is a network of highways which are important to the strategic defense policy of the United States and which provide defense access, continuity, and emergency capabilities for defense purposes. The state legislature is pressing for completion of the project.

Initial Concept and Planning

The Centennial Highway Fund

In 1997, the Utah state legislature created the Centennial Highway Fund (CHF) to finance major highway needs throughout the state. Created from an increase in state gasoline taxes and other fees, the CHF became a \$2.5 to \$2.6 billion program over 10 years. The fund was to be used for transportation expansion projects that were not funded by the transportation fund. The CHF initially helped fund transportation improvements associated with the 2002 Winter Olympics in Salt Lake City. It was also used to support infrastructure spending around the state. The I-15 NOW project used CHF funding, so in that regard the project came about as a result of planning for the Olympics.

Forty-three specific projects were identified to receive portions of the CHF, the most prominent of which was the I-15 reconstruction in Salt Lake County, a 16-mile design-build segment through Salt Lake City. Construction started in 1997 and was under a strict time constraint to be completed before the Winter Olympics. Ultimately, reconstruction of the Salt Lake segment of I-15 cost \$1.59 billion, and it was completed in May 2001, before the start of the games. Utah hired a public relations firm to manage the impacts of this rapid mega-project. The state's quick organization, funding, and the design-build delivery process made the reconstruction a success. The project, however, highlighted the need for improvements elsewhere in Utah. Other municipalities wanted to see a balanced spending of state funds. "[CHF] was for I-15 in Salt Lake County, but it had a put-aside for Weber County."

Although the CHF provided funding, the I-15 NOW project was prompted by traffic-volume problems and safety needs. "The initial scope [of I-15 NOW] was defined through the Centennial Highway Fund – to address needs that the Legislature had identified around the time of the Olympics, and to push for equal funds throughout the state, not just in Salt Lake City."

Inter-regional Corridor Alternatives Analysis (IRCAA)

In October 1999, a large study was initiated to look broadly at transportation issues and solutions across urbanized parts of Utah. Some segments of I-15 needed rapid reconstruction prior to the Olympic Games, but the region had a larger range of transportation issues that would require solutions beyond the 2002 Olympics. Many National Environmental Policy Act (NEPA) or Major Investment Studies (MISs) had been conducted focusing on specific corridors or modes of transportation, but the region was growing rapidly and the transportation issues extended beyond individual MPO planning boundaries.

The MPOs and the implementing agencies, the Utah Transit Authority (UTA) and UDOT, recognized the need to combine their planning efforts into a coordinated, long range assessment of inter-regional transportation needs. Four sponsoring agencies—the Wasatch Front Regional Council (WFRC), the Mountainland Association of Governments (MAG), UTA,

and UDOT—designed the Inter-Regional Corridor Alternatives Analysis (IRCAA) study to evaluate Utah’s transportation needs and develop an effective approach to solving those needs.⁷ The IRCAA served primarily as an Alternatives Analysis, to provide an opportunity for decision making regarding transportation investments, with a focus on inter-regional commutes.⁸ The study area was a 120-mile-long north-south corridor passing through 50 cities and towns across five counties and encompassing most of Utah’s urbanized areas. The corridor extended from Brigham City at the north end to Payson at the south and from the Great Salt Lake eastward to the Wasatch Mountains. The study purpose was to examine a mix of multi-modal solutions that would best work together to address transportation needs for 30 years. The study examined roadway MISs as well as transit and other studies, which included: *Long-Range Transit Analysis for the Wasatch Front: Intercity Transit Analysis* (1996); the *Regional Commuter Rail Feasibility Study*; *The South Salt Lake County Transit Corridors Analysis*; *West Valley City Transportation Corridor Major Investment Study*; *I-15 Corridor Study* (1991); the *Western Transportation Corridor MIS* (1998); as well as information from several studies that were underway including the second *Western Transportation Corridor Study*, and the *North Valley Connectors Study* (2001).

The IRCAA study devoted considerable research to rail alternatives—monorail, light rail, and diesel. It also considered an “enhanced roadway” alternative, which examined road capacities relative to broad mobility patterns. The study focused primarily on population and employment densities relative to travel patterns and demand. The study planners encouraged public involvement and received input from FHWA, the Federal Transit Administration (FTA), and the Federal Railroads Administration (FRA). This was not a NEPA study and, as such, did not consider environmental resources in depth or involve resource agencies. The results of the study were a locally Preferred Alternative that combined commuter rail, expanded bus services, some highway widening, intelligent transportation systems (ITS), and travel demand management (TDM). The IRCAA report identified many areas of I-15 for improvements. The report also recommended constructing completely new roads and widening to six lanes the Weber County segment of I-15 from 31st Street in Ogden north to 2700 North.

The Olympics were a catalyst to funding, but the initial I-15 NOW project planning and development phases were described as “about the same” as most other projects. The project scope and construction schedule evolved as funding fluctuated. It was not until the end of the NEPA process that the project became unique, being put on a fast track for design and delivery. “The Legislature and UDOT leaders pushed the fast time line. The Legislature pushed projects that they identified as critical needs.” With this emphasis on project acceleration, UDOT sought creative solutions to rapidly complete the project and still get maximum value.

MAJOR PROJECT ISSUES

UDOT experienced few issues with the I-15 NOW project development. The project consisted primarily of widening the existing interstate with most of the widening encroaching on the median. There were a handful of historic properties, a very low proportion of wetlands, and limited wildlife or habitat issues. The biggest potential impacts were to the local communities, but the public agreed with the need for improvements and the project had the support of local politicians. A telephone survey of 613 Weber County households with drivers using I-15 at least twice a month revealed that 90 percent supported the project. Thus, the development process was basically reduced to a balance of design and budget.

The scope of the project was linked to funding, which varied somewhat during the development stage. The initial budget was \$180 million, based on the amount of CHF funding available. It became clear during the planning process that the desired range of improvements would not be achieved at that cost. The project needed contingencies that considered both levels of construction and levels of funding. UDOT planners considered options such as finding more funding, eliminating some improvements, and staging the project for a phased delivery.

Interchanges played a major part in the project, with two in particular presenting challenges to project development:

- The 31st Street interchange crosses a landfill that had experienced a considerable amount of settling. The landfill composition was unclear, making design and costs in that area difficult to calculate.
- The 24th Street interchange presented significant challenges. The interchange was originally a half-diamond configuration, in which drivers can exit north and enter southbound, but not the other way around. The interchange was originally constructed this way due to two rail lines on the north side of the interchange. Downtown Ogden businesses contended that a full-diamond interchange would improve access to and from the highway and enhance business. However, the presence of the rail lines meant that any work to modify the interchange into a full diamond would be difficult and expensive, and the modification was not in the initial scope or budget. Furthermore, the neighborhood around the 24th Street interchange was predominantly Hispanic and low income, resulting in environmental justice issues that UDOT did not anticipate during original budgeting and planning.

INSTITUTIONAL FRAMEWORK FOR DECISION MAKING

Transportation planning in Utah is considered to be top down because most highway funding priorities, as well as the need for improvements, are decided by elected officials in the state legislature.⁹ The Legislature identifies a need; MPOs include the identified need in their TIPs and perform an air quality conformity analysis; and then UDOT begins to schedule the improvement. The general consensus among the interviewees for this case study was that the I-15 NOW project was initiated because “the Legislature designated it as critical for funding.”

In 1997, the WFRC TDM recognized that the congestion issues in the area of the 31st Street interchange required a rapid solution, suggesting potential inclusion in their long-range plan (LRP). The Legislature saw the need for the project and pushed it into the planning process. About half of the current project, to widen I-15 to six lanes from 31st Street to 12th Street, was added to the LRP. Funding was to come from the CHF, a state fund administered by UDOT, but strongly directed by the Legislature.

The I-15 NOW project is in UDOT Region 1. UDOT hired the engineering firm Michael Baker Jr., Inc. to conduct the necessary project studies and address NEPA compliance. FHWA and UDOT began the environmental impact statement (EIS) as a cooperative process in April 2001.¹⁰ The WFRC included the project in their 2030 LRP (December 2001) and their 2002-2006 TIP, and UDOT included the project in the 2003-2007 State Transportation Improvement Plan (STIP). The Michael Baker project team estimated Phase I improvements to cost from between \$171 million to \$177 million. The NEPA process included development of Steering and Advisory Committees, which were involved in the development of alternatives and were a principle step in screening the alternatives. The first Steering Committee meeting in May 2001

helped the project team confirm the project termini and the necessary study area, improve upon the purpose and need, and understand some of the potential issues that stakeholders might raise. At their second meeting, the Steering Committee recommended concept layouts that should advance for further consideration and screening. In June 2002, at the third Steering Committee meeting, members ranked elements of the concept layouts and the purpose and need in order of relative importance. The project development team assembled the Draft EIS with the consideration of alternatives and options.

UDOT put the project on their 2003-2007 STIP for concept development, and the EIS was completed in August 2004. In 2005, the legislature approved spending \$180 million from the CHF for the project. The initial plan was to complete the roadway in phases, as funding became available. The EIS estimated the cost for the project's full preferred scope at \$235 million. To help the project move forward quickly and efficiently, it was contracted as a design-build process to Weber County Constructors, a joint venture of Granite Construction Company and Ralph L. Wadsworth Construction Company. Michael Baker Jr., Inc. provided the engineering expertise, and Weber County Constructors assumed the permitting responsibilities. In 2006, WFRC approved a one-time appropriation of \$51 million to enable UDOT to collapse the project phases and finish the entire job quickly.

TRANSPORTATION DECISION-MAKING PROCESS/KEY DECISIONS

The planning and NEPA processes for I-15 NOW were essentially consecutive. Initially, it appeared that the project could be funded with the CHF money alone. WFRC was one of the sponsors of the IRCAA study and knew the study recommendations. The EIS for the I-15 NOW project began in April 2001, as the IRCAA study panel was finalizing its conclusions. The initial scope from the legislature focused on the 31st Street interchange, planning to widen the roadway to six lanes from that interchange up to 12th Street. The IRCAA study recommended the improvements be extended north to 2700 North. The recommended improvements would add two general-purpose lanes to the already existing lanes.

Conditions Analysis

In April 2001, FHWA published a notice of intent to conduct an EIS and sent letters to potential cooperating agencies. UDOT's consultant prepared a conditions analysis and EIS for potential expansion. The initial phase of this \$2.8 million contract called for evaluation of existing conditions and development of engineering solutions to solve existing traffic and infrastructure deficiencies along the I-15 corridor. The focus was largely engineering and examined multi-modal traffic modeling. The modeling was structured to evaluate the needs of a reconstruction project as well as a range of potential solutions. This phase of the project examined the targeted section of I-15 more closely. As a component of the work, Baker would also conduct the NEPA study to assess associated environmental impacts. No environmental agency chose to formally participate in the NEPA process as a cooperating agency, but the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior (DOI) provided written correspondence and/or participated on the project's Steering and Advisory Committees.

Michael Baker Jr., Inc. facilitated the conditions analysis through a series of technical memos with analyses following FHWA Technical Advisory T 6640 8A (1987).^{11,12,13} The studies noted many technical deficiencies: the bridges did not meet UDOT or American Association of State

Highway and Transportation Officials (AASHTO) seismic standards; the pavement was at end of its service life; and vertical curves did not meet current standards for stopping distance or sight distance. The studies also examined UDOT crash data from the project area. UDOT incorporated information from the technical memos into the NEPA study by reference. "UDOT was just getting sued when we started this process. The approach to balancing too much technical data, but providing enough information while being reader-friendly was through the technical memos."

The Legacy Parkway Project Lawsuits

UDOT proposed the Legacy Highway as a 120-mile, 4-lane, limited-access highway paralleling I-15 just west of the project area.¹⁴ The project was to be a completely new alignment designed to bypass the urbanized areas of Ogden and Salt Lake City. The first segment, called the Legacy Parkway, generated considerable public opposition, including a "Stop Legacy Highway" website.¹⁵ Much of the resistance was based on the Legacy Parkway's environmental analysis. The final EIS for the first 14-mile segment was seen as deficient, resulting in a lawsuit. Completed in 2000, the final EIS found that the Preferred Alternative would impact 114 acres of wetlands, 699 acres of wildlife habitat, and was located partially within the 100-year floodplain of the Great Salt Lake. Some of the wetland impact and hydrogeology computer modeling was thought to be flawed.¹⁶ In November 2001, a court issued a temporary stop-work injunction.

The controversy surrounding the Legacy Highway put other highway projects at the time on alert, especially improvements to I-15. The final EIS for the Legacy project claimed that the highway was a connected action to I-15 improvements. It contended that I-15 capacity projects would not be necessary if the Legacy project was built.¹⁷ This was not the case, at least not for all segments of I-15. Jones & Stokes completed a Supplemental EIS for the Legacy Parkway project in 2005 and addressed the ROD issues in 2006. The Legacy Parkway Supplemental EIS developed much of the purpose and need for the Legacy project in relation to I-15. In particular, it stressed the need to provide an alternate north-south route besides I-15. The supplemental EIS cited the STRAHNET role, emphasizing that an alternative to I-15 would provide emergency transportation routes for military personnel and equipment between Department of Defense locations during peace and war.¹⁸ It also cited right-of-way (ROW) constraints on I-15 that could limit its growth, and devoted a section to Shared Solution Projects, which examines the combined effects of commuter rail, I-15 improvements, and the Legacy Parkway.

The section of the Legacy project that generated controversy is well south of the I-15 NOW project. Impacts of the Legacy Parkway on the I-15 NOW development were indirect. Nevertheless, it served as a cautionary reminder for the I-15 NOW project team to ensure the best possible project development process.¹⁹

The NEPA Process

Widening and modernization were project goals from the planning phase. The steering and advisory committees developed the specific viable alternatives during the NEPA process. Baker's traffic studies found that meeting the design-year traffic demands would require the southern section of I-15 to be increased by two general-purpose lanes in each direction, for a total of eight lanes from 31st Street to 12th Street. The EIS process included a no-build alternative in addition to mainline solutions. Initially, there were 18 alternatives but only six progressed to the EIS. The study also looked at TSM, TDM, and transit; these were ultimately combined into a single Congestion Management Strategy (CMS). "Other" solutions included

congestion pricing, toll collection, and land use alternatives. None of these “other” solutions progressed to the EIS as viable alternatives for meeting the purpose and need.

As part of the NEPA process, UDOT and FHWA established a Steering Committee and an Advisory Committee. The Steering Committee consisted of representatives from UDOT, FHWA, WFRC, USACE, and the local municipalities of Marriott-Slaterville, Ogden City, Roy, West Haven, and Weber County. The Union Pacific Railroad and the towns of Farr West, Harrisville, and Riverdale were also offered the opportunity to participate on the committee. Each community in which improvements were proposed had specific need and funding concerns. The Steering committee was the forum to communicate these needs, concerns, and opinions.

One goal of the CHF was to distribute infrastructure funds to towns other than Salt Lake City. For the I-15 NOW project, each municipality wanted community-specific improvements. With a tight budget, and the idea of phasing-in the improvements, the disbursement amounts and timing were uncertain. Consequently, Steering committee members had their own interests foremost in mind. The committee forum was the place to discuss project interests and goals, and it effectively mediated potential conflicts among the different groups. The committee ranked the project’s purpose and need by relative importance in order to evaluate the alternatives as a group. The Steering committee is remembered by several interviewees as being an integral project development tool. However, their involvement was not necessarily extensive: “I got involved, but not as involved as I thought I would be.”

The Advisory Committee consisted of the Steering Committee and a wide variety of community stakeholders. These stakeholders included representatives from local citizen groups, business communities, schools, and neighborhoods.²⁰ The project team used the first project newsletter, the Steering Committee, and information from the first open house to identify interested stakeholders for this committee. The Advisory committee was the primary forum for stakeholder input. The committee broke into sub-committees to review design details, costs, impacts, and benefits of the alternatives.

The bottleneck at 31st Street had always been the most congested location along the roadway. Local elected officials recognized the problem as early as 1997, and the Speaker of the Utah House of Representatives supported the project. “When they got into the EIS, three years later, they extended the project to 2700 North, where it is today. Partly the Speaker [of the House] was pushing for that.” There was concern at the MPO that the project was too big. UDOT divided the project into phases but the Speaker wanted it all completed in one phase and indicated he would find funding. “So, [WFRC] combined it into one phase. But, [the Speaker] wasn’t [in office] two years later, and the costs had risen.” Nevertheless, most of the committee members and stakeholders concluded that constructing one project from 31st Street to 2700 North was the “best bang for the buck.”

The solution screening process was a refinement of options at several detail levels. Solutions were initially identified at a descriptive level, subsequently refined to a schematic/conceptual level and finally to a preliminary engineering level.²¹ Concept designs were developed according to UDOT and AASHTO standards.²² UDOT considered a No Build Alternative and a Base Build Alternative in the draft EIS. Additional alternatives included Mainline and Interchange options with variations of mainline improvements and interchange types. “We did technical work, but presented it all to [the committees]. At the end of the day, they felt more educated and when they made comments, they were educated comments. They felt like they had input in the decision. We didn’t hand the decision over to them, we weighed their opinions.”

Among the challenges to be addressed were five railroad corridor crossings, some heavily traveled with as many as 300 trains a day. One went over the project area, and the other four went under the project area. The five corridors are owned and/or operated by UPRR, UTA and Utah Central Railway Company (UCR), which have different purposes and needs. Additionally, UTA was granted approval to proceed with construction of a commuter rail between Ogden and Salt Lake City. The UTA started coordination with the railroad, mainly to preserve corridors and easements. As the NEPA process for the I-15 NOW project got underway, UTA was also conducting a NEPA study of possible commuter rail from Ogden to Provo. The new commuter rail would cross under I-15 north of the 31st Street interchange along an existing rail corridor for access to a proposed station at the Ogden Intermodal Center on Wall Avenue. The I-15 NOW project took advantage of the ongoing rail negotiations when UDOT established preliminary master agreements with the railroads during the planning/NEPA phase of the project. Construction schedules had to take into account the rail operating schedules and UTA's planned commuter rail construction. "We knew it would be a hot item going into it."

The I-15 project development team reviewed the following data sources:

- Relevant town plans;
- Weber County online tax parcel data (Geo Gizmo) for land-use impact assessments;
- The WFRC TDM for statistics on projected socioeconomic growth;²³
- The Weber County Development Corporation (plan) and Ogden City General Plan to ensure consistency among the project and cities' goals; and
- The Wasatch Front Regional Multiple Listing Services (MLS for real estate) to calculate the housing values and relocation costs for residents displaced by the project.

Public outreach and involvement consisted of a standard combination of three Public Open Houses, three Focus Workshops, several city council meetings, a postcard mailing, and four newsletter mailings. The initial public meeting in July, 2001 was a scoping meeting attended by 25 to 30 people. Project team members attended West Ogden neighborhood meetings at the invitation of the local councilman.

WFRC provided the travel-demand model. Fehr and Peers Associates, Inc. prepared the socioeconomic growth projections to 2030.²⁴ The MPO predicted future traffic demands using TP+ and Cube Voyager software, looking primarily at lane widths. The speed limit in urban areas is 65 mph, increasing to 70–75 mph outside of urban areas.

"The 24th Street area was the biggest unknown" in terms of planning and budgeting. At this half-diamond interchange, drivers could exit north from 24th street and enter southbound, but not the other way around. The presence of the Union Pacific freight lines complicated designs at 24th Street, and UDOT found that all of the design options would result in significant environmental impacts. Full interchanges were located within one mile in each direction, and traffic capacity models did not indicate a need for a full interchange. "But it was a hot item for downtown businesses because other interchanges were tied up – one of them couldn't have more development around it and the other was in another city – they wanted the economic benefits for Ogden."

The initial CHF \$180 million threshold budget was taken into account when screening and examining alternatives.²⁵ The EIS estimated the total cost of the preferred alternative at \$235 million. It also assumed a multi-phased project, with phases being completed as funding became available. In September 2002, the UDOT project manager (PM) appeared before the Ogden area transportation technical advisory committee. He reported that the project was under funding constraints and priorities would be based on assessed needs. In other words, Ogden might not get everything the city wanted from the I-15 NOW project.

Environmental Assessment

There were no major environmental issues in the project development. Approximately 96 percent of the planned improvements were within existing rights-of-way (ROW). Resource-agency involvement was minimal, described as “a soft involvement. UDOT doesn’t have a formal merger process.” Removing existing bridge piers for three bridges over the Weber River would temporarily impact fish species and habitat, but the new bridges would be free spans, resulting in less intrusion into the waterway (Figure 3). Six potentially affected historic sites in the area were determined eligible for the National Register of Historic Places (NRHP). All were linear canals or railroads and would not be impacted under Section 106 because construction would pass over them. The Preferred Alternative did include a Section 4(f) use, permanently incorporating land from three archaeological sites, one historic residence, and one recreation facility. The sites and residence were fully documented and recorded prior to construction.

The Preferred Alternative affected only five of the potential 20 hazardous waste/material sites identified in the build alternatives, four of which were underground storage tanks. Only one of the sites presented an issue for design and construction: a landfill with unknown deposits within the existing ROW near the 31st Street interchange. UDOT conducted additional geotechnical evaluations around the interchange as part of the final design process. These evaluations included borings to ascertain factors that could affect foundation design, such as corrosion potential, liquefaction within fills, and lateral spread potential. “There are 15 feet of settling at 31st Street from the landfill, but you also have the river right there,” as well as the railroad. AMEC Earth and Environmental conducted a geotechnical study of the loading capacity and landfill material composition.

The project development team collected original data for the NEPA study in some cases and used database information in others. “The area had their basic layers for GIS, but not for wetlands.” “We used a lot of aerial imagery. We could do field work pretty freely, because we knew where the corridor was going to be.”

The project development process was typical, if not easier than most. There were no formalized collaborations, but early involvement of some agencies helped the NEPA process progress smoothly. “Historically we would have had a lot of 4(f) impacts, but we eliminated a lot of those issues. Most of the collaboration was with the UDOT archeologists; they worked with the SHPO along the way.” The archeologists worked to define site boundaries and resources near the roadway, enabling UDOT to avoid most of these resources. The NEPA process required full wetland delineations, which indicated that impacts would be minimal. Instead of mitigation for wetlands, the project made an “in-lieu-fee” payment on behalf of the USACE to a sponsor. This is a common solution when environmental impacts are minimal, and the in-lieu-fee approach to mitigation helps direct investments in wetland conservation and restoration to the greatest environmental needs within a watershed.

Figure 3. Setting Bridge Girders over the Weber River²⁶

As the NEPA process progressed, the project team saw the benefit to increasing public involvement. The build alternatives would have the greatest community impacts at the interchange locations for 24th Street and 2700 North. Each area had different issues, with the 24th Street interchange potentially becoming contentious because of its proximity to the 21st Street interchange, which would cause any design changes at one location to affect the other. There was a railroad crossing, and any changes to the intersection would be extremely costly. The Steering and Advisory committees debated whether or not to upgrade the interchange from a half diamond to a whole diamond. Although the City of Ogden wanted the upgrade, the cost would seriously impact the project. As the debates over the 24th Street interchange heated up, the project team foresaw potential EJ issues with the location. "It is a huge EJ community there, and Ogden had no planning document on how they would address the community." The project team wanted to ensure adequate community outreach for all possible alternatives. UDOT was being sued for another project and the I-15 NOW team wanted to prevent any similar controversy on their project. To avoid any debate with the NEPA document, the project team held workshops for the 24th Street and 2700 North interchanges. "We did focus groups specifically on EJ, because of issues surrounding UDOT at the time, which helped later on."

To publicize the workshops, project members hand delivered bilingual (English/Spanish) flyers to businesses and residences in potentially impacted areas near the 21st and 24th Street interchanges (see example attached to the end of this study). “We also considered the information that we had already obtained through census data, our project committee members who represented those areas, and comments we received from our scoping meetings. We had been working with an Ogden City representative who served the West Ogden neighborhood located at the 24th Street interchange and through him we identified a representative over at the food bank, located within that neighborhood, where we held the focus workshops.” All attendees received a data sheet containing questions about travel patterns and community concerns (see example attached to the end of this study). Each data sheet had a numbered post-it flag attached, and stakeholders adhered the post-its onto a map of the project area indicating their area of interest. This enabled the group organizers and participants to quickly visualize where workshop attendees and their concerns were focused. The workshop began by describing the environmental process and presented the interchange alternatives. Smaller breakout groups were formed, based on location, to discuss specific issues important to specific locations.

“We didn't exclude the general public from these meetings, but our invitations clearly noted that the focus of the meeting would be these areas and that comments about other areas and issues could be addressed as part of a general public open house.” This focus workshop was successful, and the consultations “helped later on.” The project team held a similar focus workshop for the 2700 North interchange but interviewees did not cite that workshop as central to the project development process. In interviews for this case study, project personnel described the workshops as “additional.” The workshops caused no delays and the EIS describes them as a standard part of the project development process.

The project development team held a Public Hearing, attended by 202 individuals, on December 2, 2003, to announce the EIS. The Record of Decision (ROD) was signed in October of 2004. With the EIS complete, it was still unclear how the funding would develop. In 2004, Utah Senate Bill 248—the Highway Project Bonding—set the spending limit at \$48 million, down from \$109 million the previous year. This funding cut delayed eight projects statewide, including the I-15 NOW improvements.

The Design-Build Process

As the NEPA process was wrapping up, UDOT officials made the decision to use the design-build approach. The PM from UDOT was experienced in the design-build approach, having previously worked on the large design-build of I-15 in Salt Lake City. The Legislature wanted I-15 NOW done quickly and efficiently to get the most roadway for their value. For this project, “there were not a lot of ROW issues or utility relocations so we thought design-build was a good option.” The project was passed to the design-build firm just prior to permitting.

“The design-build firm was brought in at the end of the NEPA process. We had a draft and were about to put out the ROD.” “We did maybe 10 percent design for the NEPA process.” “We adjusted the NEPA documents to give the contractors—the design-builders—more options, more flexibility in cost savings.” Since they were brought in at the end, the design-build firm did not have a decision-making role during project development.

The design-build firm played a key role in permitting for the project and assumed the primary responsibility for dealing with the railroads. “We had a preliminary master agreement with the railroads. Once we brought on the design-build firm we finalized the agreements.” Rail

companies require extensive coordination, licensing, and approvals for work around their facilities. The coordination was written up as Part 6B of the design-build contract. The final cooperative agreements between UDOT and each railroad stipulated that the design-builder “will coordinate, design, and construct both temporary and permanent structures in accordance with the Railroad Companies’ criteria, as necessary to maintain level of service and to accommodate the Project construction. The Design-Builder is responsible to obtain and comply with all applicable design and construction specifications and requirements for each location.” In addition to the Master agreement, there was a sub-agreement between UTA and UPRR for the reconstructions at 31st Street, because UTA planned to add a commuter line at that location.

Accelerated Construction Technology Transfer (ACTT) Workshop

As UDOT prepared to implement the decisions identified in the ROD through the design-build firm, several key decisions regarding interchange design and traffic management remained undecided. Additionally, UDOT faced a \$250 million cost estimate, a \$180 million budget, and a mandate to complete the project in two years.

With these facts in hand, UDOT and FHWA collaborated to host an Accelerated Construction Technology Transfer (ACTT) workshop for the I-15 NOW project. ACTT workshops are designed to bring together state highway agency staff and national experts to accelerate highway design. The experts identify innovative approaches to reducing time, costs, and congestion for projects while improving safety, quality, and roadway performance.^{27,28} FHWA and UDOT identified eight skill set teams for the UDOT ACTT workshop:

- Geotechnical
- Structures
- Right-of-Way, Utilities, Railroad Coordination
- Innovative Contracting
- Traffic/ITS/Safety
- Construction
- Roadway and Geometric Design
- Public Involvement/Public Relations

The ACTT design workshop identified several issues prompting a reassessment of project goals and options before the project proceeded. Key areas of concern were interchange design, funding availability, the goal of maintaining two lanes of traffic in each direction for the duration of the project, and the sensitive landfill area at the 31st Street interchange. The workshop recommended the order of improvements, suggesting critical elements and elements important to the public to be addressed first. It also provided valuable insights into various processes such as:

- Interfacing geotechnical concerns of the 31st Street landfill with the design-build process;
- Using frontage roads that fit within the ROW;
- Recognizing the complexity of coordination with the railroads; and
- Designing an effective contract with the right incentives for project delivery, procurement, subcontracting, and other goals.

The workshop also considered roadway design elements, traffic management during construction, and public relations using media collaboration and marketing.

Current Status of I-15 NOW Project

UDOT began major construction on I-15 NOW in spring 2006. The UDOT PM estimates that the project is currently 65 percent complete, and project completion is slated for September 2008.

LESSONS LEARNED

The widening and reconstruction of I-15 through Weber County is first and foremost an engineering success. The processes of creative and intensive design and a contracting structure for design-build delivery of the roadway improved efficiency and are allowing maximum improvements at the least cost. "This project always took steps forward, and never took steps back."

Success Factors

Good Transportation Planning and Organization

The successes of the I-15 NOW project stem from Utah's effective planning system. The area appears to have a group of MPOs that work well with each other and with the DOT, FHWA, and other agencies. Historically, transportation needs are identified through a series of transportation studies in specific corridors as well as through the long range planning efforts of the MPOs: WFRC and MAG. Since the late 1990s, the groups have focused on comprehensive interregional planning, a collaboration probably resulting from the Olympics. The major concepts for the I-15 NOW project, as well as the majority of the funding through the CHF, were the result of these supra-regional planning phases.

The report *Wasatch Choices 2040: A Four County Land Use and Transportation Vision* is a multi-regional LRP describing a community-based transportation planning process focused on "smart growth."²⁹ The plans participants include WFRC, MAG, UDOT, Envision Utah, and UTA. Some of this cooperation is legislated by the state. The Transportation Planning Amendments of 2004, House Bill 23, codifies MPOs in state law and requires WFRC and MAG to coordinate their plans. The I-15 NOW project is an example of how well this plan can work. "There are four MPOs in the state, so we are small. [WFRC] is here where the state DOT contact is, so we have direct interaction. We try to meet with planning and programs once a month and the region directors a couple times a year in order to make sure we understand their priorities and what they are hearing as needs."

"For the last 12 years we have been working more and more with Provo and putting together models – Provo, Ogden, and Salt Lake – working together quite a bit." This kind of interregional planning takes a comprehensive look at transportation issues so that large projects can benefit all.

IRCAA Corridor Plan

The IRCAA study is an example of the collaborative planning described above. Many projects came out of the Inter-Regional Corridor Alternatives Analysis³⁰, including a 26-mile segment in Utah and Salt Lake Counties that resulted in an EIS in 2004. Additional corridor studies have been conducted for the north and south regions of the state. A corridor plan for I-15 from

Kaysville to Ogden was started in March 2005. UTA is constructing light rail from Weber County to Salt Lake City to open in 2008. All of these projects were based on the same IRCAA report that examined inter-regional transportation solutions. As with the cooperation among MPOs noted above, the IRCAA study looked across regions to examine alternatives that were being considered in other regions. One interviewee noted, "It's difficult to get people to take planning studies seriously;" however, adequate coordination and planning makes project development much easier to anticipate and fund. It also ensures that projects, goals, and objectives from the various regions can be optimized and larger transportation solutions such as commuter rail are adequately considered.

Active Participation of Local Governments

"The best thing we did was develop that steering committee. When we came up with these hot issues, it was nice to be able to talk about all the issues with them and get their perspectives." Each political body had its own agenda for the I-15 NOW project, but the Steering Committee was an effective forum for mediating among them. Each could hear the other's point of view, and knew the motivation behind specific decisions. "It was important that they heard each others' needs and position so they would know what was going on." Competing interests revolved not only around traffic solutions, but also the socioeconomic concerns of funding and spending. "If Salt Lake was going to get money, then other areas of the state wanted it too." That same rivalry played out with the traffic issues as well. "It was balancing other community interests and those of Ogden."

Railroad Coordination

With the number of rail crossings for the I-15 NOW project, as well as the volume of traffic on some of the lines, coordination with the railroads could have been a major barrier to the highway project. Instead, the issue was anticipated by project personnel and handled effectively. UDOT had prepared preliminary Master Agreements with the railroads during the NEPA process. UTA was already working with the railroads regarding commuter rail corridors. These factors probably helped the I-15 NOW project. The railroad crossings, and the coordination required of them, could have been very difficult elements of the project. However, UDOT negotiated effective agreements with the railroads. Additionally, many of the specific details, such as coordinating construction with the railroad schedules and specifications, were made the responsibility of the design-build contractor. In the end there were no major problems or delays associated with the railroads.

Key Innovations

Design-Build Concept

The design-build approach distinguished the I-15 NOW project. "We took the lessons learned from the \$1.5 billion design-build project for the Olympics to new projects." In this case, the design-build considerations were largely outside the planning and development processes. "We never knew if it would be design-build while doing the [EIS], but we kept our options open for design decisions." The design-build process is quicker, and generally more efficient than the standard design-bid-build process.

"Is design-build going to be the new process? I think they get a lot of state money based on promises and being able to deliver capacity quickly. It will likely be a growing trend."

Innovative Contracts Engineer

The design-build process requires modification of the standard contracting aspect of highway projects. “UDOT tries to look at new innovative ways to deliver contracts and ways to deliver jobs.” To that end, UDOT has a designated Innovative Contracts Engineer who researches contract structures throughout the United States, searching for ways to improve DOT operations. In June 2007, UDOT posted an announcement to hire another Innovative Contracts Manager. The position responsibilities include:

Develops new and innovative processes and procedures to be used in the development and construction of transportation systems; Develops thorough coordination and cooperation with state, local, and national transportation groups including AASHTO; Becomes involved on a national level in the innovative contracting field; Coordinates with Utah Legislative parties to possibly change laws currently governing the bidding of transportation construction projects; Develops and maintains the innovative contracting program for UDOT, including developing templates, procedures, and specifications; Trains and provides guidance to all UDOT personnel on the innovative contracting program.³¹

“We dealt with ramp rental innovatively – for each extra day the contractor kept the ramps closed, we subtracted \$4,000 from their contract. Alternatively, if he finished in less days than we added that for each day. There was a disincentive if he closed it more than once as well. It’s the same concept as road rental, but we applied it to ramps as well to make it better for the local residents.”

ACTT Workshop

As a result of the 2002 Winter Olympics, Utah was experienced with rapid design and delivery of highway projects. The I-15 NOW project refined that process further by incorporating an ACTT workshop, which provided a valuable jump start to the design process. “I heard about it from our Innovative Contracts Engineer. It came from FHWA. FHWA called UDOT looking for opportunities to do a workshop.” Since the I-15 NOW project, ACTT workshops have taken place in 25 states.

Barriers Encountered and Solutions

Maintaining Service

The goal of maintaining two lanes of traffic in each direction for the duration of the project was taken up by the ACTT workshop. “[The] real challenge was how to maintain the road and manage traffic while constructing the road. It was difficult with changes in alignment and the narrow bridges.” The process was woven into the contracting, giving incentives to the contractor for maintaining service. In the few cases when the entire roadway had to be shut down, these activities were scheduled for off-peak times.

The highway lanes presented fewer challenges than the railroads, which did not present any alternatives for disruption of service. As a result, the design-build firm must coordinate activities around the railroad operations. That coordination includes obtaining agreements and permits as well as following the railroad guidelines for construction. In addition, they must take into account a potential railway, the new commuter line that UTA is constructing.

Funding and Scope

The costs on the I-15 NOW project appeared to shift regularly, but this was a result of the shifting scope of the project. The scope was never firm, and the planning/NEPA process was guided by the principle that they would try to get as much roadway as funding would allow. The consultants from Michael Baker projected costs in the EIS relatively close to the final costs for the project. However, funding was uncertain throughout the process. The NEPA process made contingencies for additional funding, and the committees established a scope of improvements that required additional funding. All players made contingencies for the possibility that there might be additional funding, included phasing the construction, without knowing whether it would be the case.

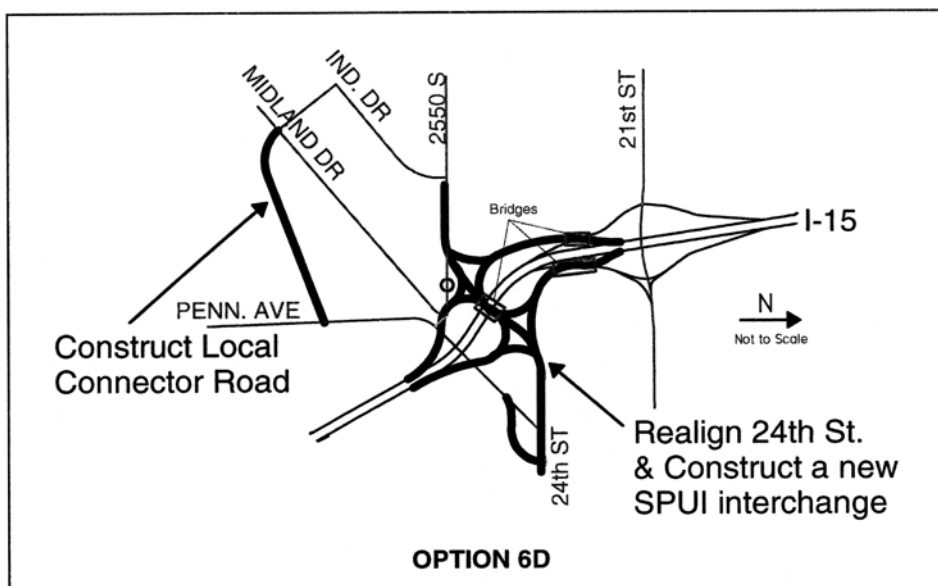
“Funding came in waves. It fluctuated, which is why it was noted in the EIS as available funding.” The roadway was initially conceived at \$180 million, and that amount had been approved by the Legislature. In June 2005, the project manager gave a presentation before the county board of commissioners and indicated he did not believe UDOT could complete the project for \$180 million.³² By 2006 the estimate had grown to \$233 million, based on the preferred alternative.³³ By June 2007, the estimate was \$265 million. Reasons for these increases are unclear. Fuel taxes are the primary source for transportation funding in Utah and in 2003 made up 73 percent of the Transportation Fund revenue. From 1997 to 2003 fuel taxes made up 12 percent of the Centennial Highway Fund. UDOT is supposed to administer the spending of state funds like the CHF, but control over its allocation is different. The Legislature controls the Centennial Fund.

As recently as January 2006, the project was slated to extend only from 31st Street up to 12th Street because of funding.³⁴ In May 2006, “we came back and amended to put all [parts of the project] into one phase – the Legislature appropriated the money and they got the project going.” The estimated total cost of the I-15 NOW improvements is \$260,310,000. Funding is currently allocated into 2009.

“When they did the plan 10 years ago they didn’t really have time to estimate costs. They found the Weber County I-15 project and a few others where they underestimated the costs. So UDOT goes to the Legislature, which typically agrees to fund the project that they agreed to the scope of.”

Opportunity Missed – Separate Study at 24th Street Interchange

The 24th Street interchange has become a separate project of its own. “Ogden was not happy with the end result [of the I-15 NOW EIS]. They wanted a full interchange, which would have taken half the budget.” A full interchange at the location was evaluated in the EIS as an option with an estimated cost of \$51 million (Figure 4). Construction would impact eight additional 4(f) properties, six residences, and three additional businesses. The community is disproportionately Hispanic and low income. “Ogden City wanted that to be a full interchange, as did FHWA, and had pushed hard for it. But the Legislature gave us a large scope with a tight budget, and that interchange would have dramatically impacted the scope – lowered the number of lanes.” Interviewees asserted that the city didn’t have a redevelopment plan for that part of downtown, and consequently “it never came up as a problem on our models.”

Figure 4. One of the Proposals for Reconstructing the 24th Street Interchange³⁵

The option to upgrade the 24th Street interchange was considered in the I-15 NOW plan, but not adopted into final design because of cost and impacts. The debate process for I-15 NOW brought the interchange issue to the forefront of the community and the city. The neighboring cities feared that if the 24th Street interchange was built, the length of the roadway would have to be shortened and their municipalities may not receive desired improvements. One interviewee indicated that the Steering Committee's active involvement is what kept the issue out of court. "The other cities were able to put pressure on Ogden through the Steering Committee." UDOT found the interchanges at 21st Street and the 31st Street Industrial Park to the west of the 24th Street interchange to be sufficient "...but the public and the industrial park want[ed] direct access to downtown and to the interstate." UDOT has agreed to undertake a separate environmental study for the interchange, which will be reconstructed into a full interchange project separate from the I-15 NOW work. "The city has since done a planning study, but it wasn't available at the time. We told them the interchange would need an economic base, it's not based on traffic."

The Era of Megaprojects

"All projects like this – even I-15 – we have a hard time putting on our plans because they seem too big – maybe more than we could handle." Increasingly, the nation's highways need more maintenance and reconstruction. Project scopes have grown larger. Planners have streamlined the development and environmental review processes. Engineers can find ways to accelerate design through national working groups like ACTT. There is still, however, the issue of funding. As projects get larger, more money is required at one time. Projects that can be completed in phases allow for a more fluid cash flow process. However, they require more complex organization and scheduling, and only careful integration of project phases and parts will avoid redundant expenditures.

For the I-15 NOW project, "The legislature wanted it done the whole way, and they elected to fund it to be all done at once." The I-15 NOW project does not qualify as a megaproject by FHWA standards, which is a project valued at \$1 billion or more. However, I-15 NOW is one of the largest projects ever undertaken in Utah. Large projects can benefit an area in many ways

beyond transportation. Opportunities for joint infrastructure were identified during the I-15 planning and development through meetings among the various cities along the corridor. Opportunities included further development of the local trail system; storm water system improvements; and additional aesthetic treatments of design features such as structures, lighting, and landscaping. In some places I-15 is both a physical and financial barrier to trail implementation. Some of the storm water features provided by the I-15 storm water system could assist local municipalities in updating or establishing portions of their own systems. These potential benefits require that municipalities have adequate growth plans in place, and have potential funding sources that will enable them to take advantage of joint development opportunities when they arise. Methods to accelerate design and lower delivery costs have allowed highway projects to get bigger. They also lead to questions regarding indirect impacts to other sectors of land use, urban planning, and community growth. Ultimately, for the I-15 NOW project, potential joint development opportunities were left to be finalized during the design-build phase of the project and it is unclear whether any have moved forward.

Conclusions

The planning and development of the I-15 NOW project was a successful outcome of an overall high-quality process. There were key decisions made along the way, but as part of an efficient process those decisions were not large risks but simply steps in the planning and development scenario. The design-build approach to delivery, although not yet complete, is surely a cost savings. With the state's investments in substantial long-range transportation planning as well as a commitment toward creative contracting structures, such decisions can be made with confidence. Program assistance such as FHWA's ACTT process provides additional supporting resources that allow states to explore new project structures while minimizing the potential for risks. The next step is aligning the funding considerations earlier and integrating them into the process in the same way.

SOURCES

Carter & Burgess

2002 *Inter-Regional Corridor Alternatives Analysis*. Available online through the Mountainland Association of Governments:

http://www.mountainland.org/index.php?option=com_content&task=view&id=62&Itemid=22

2001 *Utah County I-15 Corridor Management Plan*.

Dye Management Group, Inc.

1999 *Rural Transportation Planning Workshops: Colorado Workshop, including Arizona, Texas, and Utah*. Report prepared for the FHWA, Washington D.C. by Dye Management Group., Bellevue, WA

Envision Utah

2007 *Wasatch Choices 2040: A Four County Land Use and Transportation Vision*.

(<http://www.wfrc.org/cms/publications/wasatchchoices2040report.pdf>)

Federal Register

2001 Notice of Intent. Volume 66, Number 70, Page 18844. April 11, 2001

Fehr and Peers Associates, Inc.

2001/2002 Travel Demand Model [computer software]. (Adapted from Wasatch Front Regional Council Travel Demand Model, 2001.)

FHWA

2007a *ACTT Workshop: Utah Spanning the Future*. State Workshops Report for Utah. Available at: <http://www.fhwa.dot.gov/construction/accelerated/wsut0500.cfm>

2007b ACTT NOW. Website of the Turner-Fairbank Highway Research Center. Hosted by FHWA at <http://www.tfhrc.gov/FOCUS/oct05/01.htm>

2004 I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.

FHWA and USACE

2005 Legacy Parkway Final Supplemental EIS/Reevaluation and Section 4(f), 6 (f) Evaluation.

Hanmer, Rebecca

2000 Letter to Byron Parker and David C. Gibbs, September 2000.

<http://utah.sierraclub.org/ogden/legacyEPA2.html>

Intermountain Contractor

2006 Special Report Intermountain Contractor's Top Projects of 2006 in Utah and Idaho. A publication of The McGraw-Hill Companies, Inc.. available online at:

http://intermountain.construction.com/features/archive/06_Top_Projects.asp

Gochnour, Natalie

2000 Letter to Byron Parker, October 24, 2000.

<http://governor.utah.gov/rplr/rdcc/Comments/UT980925-140.PDF>

Road to Ruin

2004 *Legacy Highway Project, Utah, Cost to Federal Taxpayers \$1.4 Billion*. A Website supported by Taxpayers for Common Sense, Washington DC. Available at: <http://www.taxpayer.net/road2ruin/roads/legacyhighway.htm>

Michael Baker Jr. Inc.

2001a Infrastructure and Geometric Conditions. Technical Memorandum.

2001b Traffic Operations Deficiencies, Crash Analyses, and System Inventory. Technical Memorandum.

2003 Concept Development and Evaluation. Technical Memorandum Number 3.

Rocky Mountain Construction

2007 Edition from June 11, 2007. Associated Construction Publications. Reed Business Information, a division of Reed Elsevier Inc.

State of Utah

2007 Now You're the Expert, Construction Photos, Weber River Girders. Part of the UDOT Website. Available online at: http://www.udot.utah.gov/i15now/photos/31st_Street.pdf

Stop the Legacy Highway

n.d. Website available at: <http://www.stoplegacyhighway.org/>

UDOT

2007 Job Announcement, Engineering Manager II, Innovative Contract Engineer. <https://statejobs.utah.gov/jobAnnouncement.jsp?rid=13057>

Weber County Board of Commissioners

2005 MINUTES OF THE BOARD OF COMMISSIONERS OF WEBER COUNTY Tuesday, June 7, 2005 - 10:00 a.m. Available online at: http://goldenspikeeventcenter.com/commission/show_content.php?id=250

WFRC

2006 Council Meeting Minutes. January 26, 2006.

**Baker**

Interstate 15 31st Street in Ogden to 2700 North in Farr West

An Environmental Impact Statement (EIS) is being developed to address traffic and safety concerns associated with I-15. In addition to I-15 mainline improvements, modifications are being considered at the 24th Street and 21st Street interchanges which affect local traffic and some area residences and businesses. Due to potential community impacts, the Utah Department of Transportation (UDOT) and their consultant, Michael Baker Jr., Inc., invite you to participate in one of the following workshops designed specifically for area businesses and the West Ogden neighborhood. Your participation is important to help the project team understand how I-15 can best serve your community. Each meeting includes a brief presentation followed by workshops focusing on specific alternatives.

24th Street / 21st Street Interchange Area Focus Workshops

**Workshops will be held at the Hopkins School
F Avenue and West 25th Street in Ogden**

Businesses

Wednesday, October 9, 2002, 4:00 to 5:30 p.m.

Residents

Wednesday, October 9, 2002, 6:30 to 8:00 p.m.

(Bring your children - play area available)

Spanish translators will be available

Meeting room is ADA accessible, for other ADA accommodations

Please contact Andy Neff, 620-1641

UDOT Region 1 Public Involvement Coordinator

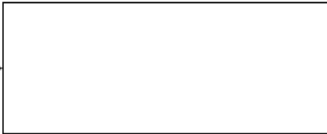
A Project Open House for the entire project will also be held on
Wednesday, November 13, 2002 at the Ogden Union Station,
Browning Theater, 2501 Wall Avenue in Ogden. You can attend
the open house anytime between 4:30 p.m. — 7:00 p.m.



DATA SHEET – Location Specific Concerns
I-15, from 31st Street to 2700 North in Weber County
24th Street / 21st Street Residents Workshop 10/9/02

Data Sheet No. _____

Please identify the location of your home by placing the attached post-it flag on any of the project maps located at your workshop.



Name: _____
Telephone: _____ E-mail: _____
Street address: _____
Mailing address (if different): _____
City: _____ State: _____ Zip: _____

If you live in the area, please note the name of your neighborhood and identify your home on the map: _____

Please describe your neighborhood (*for example: in walking distance of "xyz", lots of kids, quiet, daycare in neighborhood, home renters or owners, you know most of your neighbors, etc.*):

What do you like or not like about your neighborhood: _____

What community or public facilities and recreation resources serve your neighborhood (*for example, my kids play ball at the Serge Simmons Ball Field and I value having churches in my neighborhood*): _____

What safety concerns do you have for your neighborhood, existing concerns or anticipated concerns as a result of the proposed project (*personal or traffic safety*): _____

Please describe how you typically travel to get to work and/or school (*for example: I get on the bus at 24th Street and I-15 to get to work in downtown Ogden*): _____

Please describe how you typically travel to get to other regular activities (*such as shopping, community activities, and recreation*): _____

Will your travel patterns to work, school, and other regular activities be affected by the proposed alternatives, if so how: _____

What transportation improvements would help enhance economic viability of your community:

Please note any additional comments or concerns on an additional sheet.

Thanks for taking the time to help the project team better understand resources and concerns that are important to your community!

ENDNOTES

- ¹ Carter & Burgess 2001. Utah County I-15 Corridor Management Plan.
- ² FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.
- ³ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.
- ⁴ Rocky Mountain Construction 2007. Edition from June 11, 2007. Associated Construction Publications. Reed Business Information, a division of Reed Elsevier Inc.
- ⁵ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.
- ⁶ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.
- ⁷ Carter & Burgess 2002. *Inter-Regional Corridor Alternatives Analysis*. Available online through the Mountainland Association of Governments:
http://www.mountainland.org/index.php?option=com_content&task=view&id=62&Itemid=22
- ⁸ Carter & Burgess 2002. *Inter-Regional Corridor Alternatives Analysis*. Available online through the Mountainland Association of Governments:
http://www.mountainland.org/index.php?option=com_content&task=view&id=62&Itemid=22. page 1-5
- ⁹ Dye 1999. *Rural Transportation Planning Workshops: Colorado Workshop, including Arizona, Texas, and Utah*. Report prepared for the FHWA, Washington D.C. by Dye Management Group., Bellevue, WA
- ¹⁰ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.
- ¹¹ Michael Baker 2001a. Infrastructure and Geometric Conditions. Technical Memorandum.
- ¹² Michael Baker 2001b, Traffic Operations Deficiencies, Crash Analyses, and System Inventory. Technical Memorandum.
- ¹³ Michael Baker 2003. Concept Development and Evaluation. Technical Memorandum Number 3.
- ¹⁴ <http://www.udot.utah.gov/legacy/>
- ¹⁵ www.stoplegacyhighway.org/myths.htm
- ¹⁶ Parker 2000
- ¹⁷ Hanmer 2000. Letter to Byron Parker and David C. Gibbs, September 2000.
<http://utah.sierraclub.org/ogden/legacyEPA2.html>
- ¹⁸ FHWA & USACE 2005.

¹⁹ For an overview on the legal debates surrounding Legacy see *Road to Ruin 2004*; or <http://legacyhotsheet.blogspot.com/>

²⁰ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.

²¹ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.

²² Michael Baker 2003. Concept Development and Evaluation. Technical Memorandum Number 3.

²³ WFRC TDM 2001

²⁴ Fehr and Peers Associates Inc. 2002. 2001/2002 Travel Demand Model [computer software]. (Adapted from Wasatch Front Regional Council Travel Demand Model, 2001.)

²⁵ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation.

²⁶ State of Utah 2007. Now You're the Expert, Construction Photos, Weber River Girders. Part of the UDOT Website. Available online at: http://www.udot.utah.gov/i15now/photos/31st_Street.pdf

²⁷ FHWA 2007. *ACTT Workshop: Utah Spanning the Future*. State Workshops Report for Utah. Available at: <http://www.fhwa.dot.gov/construction/accelerated/wsut0500.cfm>

²⁸ FHWA 2007. ACTT NOW. Website of the Turner-Fairbank Highway Research Center. Hosted by FHWA at <http://www.tfrc.gov/FOCUS/oct05/01.htm>

²⁹ Envision Utah 2007. *Wasatch Choices 2040: A Four County Land Use and Transportation Vision*. (<http://www.wfrc.org/cms/publications/wasatchchoices2040report.pdf>)

³⁰ Carter & Burgess 2002. Inter-Regional Corridor Alternatives Analysis. Available online through the Mountainland Association of Governments: http://www.mountainland.org/index.php?option=com_content&task=view&id=62&Itemid=22

³¹ UDOT 2007. Job Announcement, Engineering Manager II, Innovative Contract Engineer. <https://statejobs.utah.gov/jobAnnouncement.jsp?rid=13057>

³² Weber County Board of Commissioners 2005. Minutes of The Board Of Commissioners Of Weber County. Tuesday, June 7, 2005 - 10:00 a.m. Available online at: http://goldenspikeeventcenter.com/commission/show_content.php?id=250

³³ Intermountain Contractor 2006. Special Report Intermountain Contractor's Top Projects of 2006 in Utah and Idaho. A publication of The McGraw-Hill Companies, Inc.. available online at: http://intermountain.construction.com/features/archive/06_Top_Projects.asp

³⁴ WFRC 2006. Council Meeting Minutes. January 26, 2006.

³⁵ FHWA 2004. I-15, 31st Street to 2700 North in Farr West, Weber County, Utah, Final Environmental Impact Statement and Final Section 4(f) Evaluation. ; 2-27.