

INFRASTRUCTURE CASE STUDY:

US-36 Express Lanes

SUMMARY

PROJECT TYPE	YEAR
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Highway managed lanes and bus rapid-transit	2016
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DEAL STRUCTURE

Phase 1: Design-build

Phase 2: Design-build-finance-operate-maintain agreement

TOTAL COST

Phase 1: \$312.4 million for construction

Phase 2: \$208.4 million for construction

FINANCING

TIFIA loans, private activity bonds private equity

FUNDING

User-paid toll¹

PUBLIC BENEFIT

Less congested highway with alternative modes of travel: dedicated bus rapid-transit and bike lanes



Background

Connecting Denver and Boulder, US-36 first opened as a toll road in 1951. Its tolls paid back its construction costs and the toll booths were removed in 1968. In the decades since, traffic has grown with the region. This led the Colorado Department of Transportation (CDOT) to begin exploring options to rebuild the corridor in the late 1990s. In 2009, an environmental impact statement was completed. The statement described preferred alternative improvements to be completed as funding became available in the future. The solutions identified included a buffered managed lane in each direction, bus rapid-transit (BRT) ramp stations, a bikeway, and auxiliary lanes between most interchanges.

Project Description

CDOT entered into a public-private partnership (P3) agreement to “build much-needed improvements on a highway two decades sooner than we could otherwise afford” because fuel tax revenue had not kept up with the needs of Colorado’s infrastructure.² The US-36 improvements are actually being executed in two phases under two different contracts. Phase 1 is a partnership between CDOT and a consortium, Colorado High Performance Transportation Enterprise; Phase 2 is between CDOT and two groups, one is still the Colorado High Performance Transportation Enterprise and the other is Plenary Roads Finco LP, who is functioning as the Transportation Infrastructure Finance and Innovation Act (TIFIA Loan) borrower. This work has been coordinated with Regional Transportation District (RTD), the transit provider for the Denver area who will be operating BRT in the corridor.

Phase 1 of the US-36 improvements was a P3 design-build model to deliver the first ten miles of construction of highway improvements. This phase cost \$312.4 million and was financed through a \$50 million TIFIA loan, state grants and funds, regional federal funds, a sales tax measure in the region passed to make capital improvements (one-third of the cost), and a small amount of local funds.

The separate Phase 2 agreement requires the private partner to design, build, finance, operate, and maintain (DBFOM) the expanded highway, including operating and maintaining the ten miles completed during Phase 1. The private partner will assume most of the risk in the deal, particularly related to the sufficiency of toll revenues. The contract is a nonexclusive license “to access and use the highway and its structures for the purpose of carrying out the operations” of the contract; however, the state maintains ownership of the highway.³

Phase 2 will cost \$208.4 million and is being financed through private equity, a TIFIA loan, \$20 million in private activity bonds, and toll revenue, as well as state, federal, and local funds.

Other details of the contract include penalties for failing to meet maintenance standards, such as snow plowing or if the express lanes are congested to the point of delaying BRT vehicles. The state can make improvements to the highway at its own cost. The state will also share in revenue generated once minimum returns are met.

Phase 1 of US-36 was completed in summer 2015.⁴ This project delivered ten miles of improvements to the highway, including a high-occupancy vehicle (HOV) toll lane in each direction, multiple bridge replacements, BRT accommodations at stations located on ramps and bus bypass ramps at several interchanges, a bikeway along much of the corridor, modern equipment for tolling and management, and improvement of transit stations in the corridor.

Phase 2, bringing in a DBFOM model, extended the improvements for another five miles, bringing the same improvements farther up the corridor and selecting a partner to provide operation and maintenance of the highway and its HOV-toll lane. Phase 2 was completed at the end of 2015, and RTD began BRT service in January 2016.^{5, 6}

Benefits and Criticisms

CDOT used a unique, two-phase process for the P3. This approach made the project more manageable; CDOT set a clear goal for each phase, and the project came in on time. Second, the department was able to leverage private funds for part of the project. The phased approach allowed the parties to develop a financial plan that worked for all parties, with neither the state nor the private sector bearing the full cost of financing. While shouldering the financing for the first phase, which upgraded a road that the state needed to upgrade regardless, CDOT allowed for private capital to be leveraged in the second phase.

Takeaways

One of the major lessons from the US-36 project is in its innovative inclusion of multiple modes of transportation infrastructure into a P3 framework. It took an existing, congested highway and transformed it into a revenue-generating piece of infrastructure that will help distribute benefits across different types of users—drivers, cargo, transit riders, and bicyclists—through improvements that will: offer users the option to pay to have a less congested route; allow for BRT between Boulder and Denver, alleviating congestion in the corridor; create bicycle infrastructure; and upgrade existing RTD stations in the corridor to incentivize regional rail usage.

It is rare to have a multimodal upgrade packaged into one project, and to do it with expedited delivery, private financing, and limited public risk is a model from which other states and cities can learn.

Endnotes

1. Additional funding includes: CDOT federal/state grant, CDOT Bridge Enterprise funds, regional federal funds (Denver Region Council of Governments), RTD sales-tax revenue, TIGER grant, HPTE capital payment, and subordinated debt.
2. Colorado Department of Transportation, “Update on US-36 Public-Private Partnership: Understanding the Facts,” 2014. <https://www.codot.gov/projects/US36ExpressLanes/update-on-us-36-public-private-partnership-understanding-the-facts>.
3. Colorado High Performance Transportation Enterprise, US-36 Public Private Partnership FAQs. <https://www.codot.gov/projects/US36ExpressLanes/88th-to-table-mesa/faqs-for-us-36-p3>.
4. Colorado Department of Transportation, “US-36 Express lanes Project Overview,” 2016. <https://www.codot.gov/projects/US36ExpressLanes/federal-blvd-to-88th>.
5. U.S. Department of Transportation, Federal Highway Administration, “Project Profiles: US-36 Managed Lane/Bus Rapid Transit Project, Phase 2,” 2014. https://www.fhwa.dot.gov/ipd/project_profiles/co_us36_managed_lanes_phase2.aspx.
6. Regional Transportation District, FasTracks, “Flatiron Flyer is Now in Service.” http://www.rtd-fastracks.com/us36_1.



BIPARTISAN POLICY CENTER

1225 Eye Street NW, Suite 1000 | Washington, D.C. 20005

202-204-2400 | bipartisanpolicy.org