

I-25, SH 402 to SH 14 Project Risk Register

Risk		Description	Mitigation	Likelihood (1-5)	Impact (1-5)	Order of Magnitude
Project Management	Funding availability	Pre-construction and construction funding pipeline is currently in a dynamic environment.	Submit applications for grants nationally and at state level. Identify local partnerships available through cities, counties, and developers to meet regional mobility needs. Develop a draw-down forecast for the project vision for pre-construction and construction activities.	4	5	20 - Major time delays and construction cost increases if project is pushed out into future years. Loss of mobility for users. Increases maintenance costs until project is constructed.
	Construction cost estimating	Inaccurate or incomplete current cost data for bid items on design-build projects. Inaccurate estimates and a possible funding shortage.	Develop project plans and bid documents that are based on maximizing the amount of work completed for the budgeted dollars. Prepare estimates that recognize risks with a high and low estimate. Develop likely costs for major and unique work elements independently. Provide a contingency factor for inflation and unknowns.	3	5	15 - Possible loss of funding or unable to award construction contract due to scope and estimated costs do not meet funding availability expectations.
Right of Way	ROW clearance	40-50 Parcels of ROW needed.	Hire multiple acquisition consultants to balance work load. Use incentive program - property owners receive 30% above fair-market value if sign within 30 days of offer.	5	3	15 - Possible condemnation on a few parcels, causing significant delays of being able to work in that specific parcel.
		1-5 local agency parcels needed.	Project Team has been meeting with LA's for over a year; partnerships with LA's may be possible through negotiations and land deals.			
		ROW unable to be obtained prior to DB contract NTP.	Include conditional ROW clearance.			
ROW Cost Escalation	Cost to acquire ROW parcels will escalate with time and land use changes.	Preliminary engineering has taken the plans to a level of design to confidently identify ROW impacts for the EIS preferred alignment. ROW needs should be shared with LA's to coordinate land use and oil & gas development plans.	4	5	20 - Major cost increases could occur when agricultural land is changed to a higher value use.	
Utilities, Ditches, and Railroads	Utility agreements	Multiple utility relocations needed.	Continue early coordination to develop initial utility agreements. Utility agreements detail work, roles, and responsibilities.	5	4	20 - Major time and cost delays if utility company does not relocate facilities when necessary, will delay contractor work.
	Railroad design approvals	Union Pacific and Great Western railroad bridge designs require railroad approvals.	Continue early coordination to develop initial railroad agreements.	4	3	12 - Possible moderate time delays if multiple iterations of railroads design submittals are needed. The railroad bridge construction delay may also hinder other work from being completed.

Key - Cost Impact and Time Delay Based on Order of Magnitude Score

Order of Magnitude (score)	Time Delay (months)	Cost Impact (\$)
0-6 (minimal)	<1	<500,000
7-12 (moderate)	1-3	500,000-1,000,000
13-25 (high)	>3	>1,000,000

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Utilities, Ditches, and Railroads	Ditch agreements	Ditch relocations must meet environmental mitigation commitments.	Continue early coordination to develop initial ditch relocation agreements to include in procurement package. May require additional traffic control measures during peak ditch flow time periods.	3	3	9 - Possible need for water diversion which would add cost; Possible moderate time delay if ditch company takes issue with something.
	Utility agreements	Multiple utility relocations needed.	Continue early coordination to develop initial utility agreements. Utility agreements detail work, roles, and responsibilities.	5	4	20 - Major time and cost delays if utility company does not relocate facilities when necessary, will delay contractor work.
	Railroad design approvals	Union Pacific and Great Western railroad bridge designs require railroad approvals.	Continue early coordination to develop initial railroad agreements.	4	3	12 - Possible moderate time delays if multiple iterations of railroads design submittals are needed. The railroad bridge construction delay may also hinder other work from being completed.
Tolling	ITS	ITS devices are needed for the express lanes, will gather travel time and traffic volumes, speed, and congestion data	A Systems Engineering Management Plan will need compiled that identifies engineering challenges, schedule, and necessary actions needed for success.	3	2	6 - Possible minimal project time delays if ITS equipment is not functioning properly.
	E-470 Tolling Authority Coordination	The E-470 Tolling Authority will be responsible for installing tolling equipment and collecting tolls.	The Project Team will consist of Segment 2 and 3 members so "lessons learned" and installation and testing knowledge can be transferred to Segment 7 and 8. A task order with will need executed with E-470 that will detail work, timing, and roles and responsibilities.	3	2	6 - Possible minimal project time delays if tolling equipment and/or billing is not functioning properly.
NEPA	Noise Analysis	Using a Phase I Template may require an updated noise analysis and additional neighborhood coordination.	The Project Team will investigate this concern early in the project schedule to ensure noise analysis and mitigation is addressed.	2	2	4 - Possible additions/change to project scope based on stakeholder demands that could have minimal impact on project cost and time

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	Biological Surveys	Additional biological surveys may be required for threatened and endangered species.	The Project Team will investigate this requirement as an early action item so any required surveys can begin now. If species are found where they were not previously present, we will have time to properly mitigate impacts.	2	3	6 - Possible moderate time delays if multiple years of surveys are required to clear an area for construction.

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Public Information Outreach	Local Agencies	Larimer County, City of Loveland, Town of Johnstown, Town of Windsor, Town of Timnath, City of Fort Collins, Colorado State Patrol and the Port of Entry exist along project corridor .	The Project Team will coordinate with LA representatives to encourage the LA's to be informed about the project schedule and work type. If work is occurring that involves direct impacts to LA's, the Project Team will communicate early and often.	2	2	4 - Possible additions/change to project scope based on stakeholder demands that could have minimal impact on project cost and time
	Stakeholders	Many stakeholders (Developers, business owners, etc.) exist along the 14-mile project corridor. Possibility for many competing concerns may cause opposition to parts of the project.	The Project Team will participate with the North I-25 Coalition and business owner associations meetings and report project progress and issues.	1	2	2 - Possible additions/change to project scope based on stakeholder demands that could have minimal impact on project cost and time
Bid Items	Material Lead time	Some items, such as sign structures, light poles, signs, etc. will have long lead times and could impact the schedule of a D-B contractor.	The Project Team will identify long lead time items to understand construction time frames.	3	2	6 - Could cause a minimal time delay if items are backordered or not ordered at the appropriate time.
	Oil Price	Oil prices have the potential to fluctuate greatly over the three-year project construction duration.	The Asphalt/Cement Cost Adjustment and Fuel Cost specifications and cost allowances contain money to help cover fuel costs increases during the construction duration. Opportunity: Low asphalt prices may be included with bids based on recent low oil prices.	3	2	6 - Oil prices will likely go up, which will translate into higher asphalt prices. Could have a moderate cost impact due to amount of asphalt quantities
	Item overrun/underrun and Additions	Project items quantities will likely fluctuate from those specified in plans. Additional items may need to be added to the contract based on varying field conditions.	Allowances will be made to help cover unforeseen project costs, including over and under runs/ added construction items.	3	3	9- Minor overruns/ underruns/ additions will have a slight cost impact. Major overruns or major item addition will have a moderate cost impact.
Miscellaneous	Seasonal Weather	The length of paving seasons is highly dependent on night time temperatures.	Weather days will be forecasted into construction contract schedule. Public information outreach will include educating the public if delays are caused by weather.	2	2	4 - Paving may be delayed because of low night time temperatures. Could cause project to be minimally delayed
	Extreme Weather Event	The project area includes several major drainage basins that have recently experienced extreme weather related events. The Corridor needs to provide a high level of mobility for the general public and emergency responders during a variety of extreme weather.	Accelerating project delivery will reduce the exposure of the project and corridor to extreme weather events.	1	5	5 - With recent extreme weather events, I-25 was closed due to high water, project staff and contractors had been redirected to emergency projects, and the short supply of materials and labor sharply increased the cost.

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Risk

Right of Way	Conditional ROW Clearance
Utilities	Farmers Reservoir and Irrigation Company
	Xcel
	EagleNet/CDOT Fiber Lines
	Others
Tolling	ITS
	E-470 Tolling Authority Coordination
Public Information Outreach	Local Agencies
	RTD
	Stakeholders
Bid Items	Material Lead time
	Oil Price
	Item overrun/underrun and Additions
Misc.	Weather
	Project Staff Turnover

Segment 3 Construction Risk Register

Description
83 Parcels of ROW needed 53 parcels have signed MOA; 5 parcels have been acquired 13 local agency parcels needed; 2 parcels have been acquired
I-25 bridge replaced with a box culvert that conveys the Bull Canal under I-25
Multiple Xcel electrical and copper line relocations needed
Shared-trench fiber lines need relocating along 83% of project length on the east side of I-25; Many end users and emergency response use fiber lines
Gas, fiber, electrical, water, and sewer lines need relocating
ITS devices are needed for the Express lanes, will gather travel time and traffic volumes, speed, and congestion data
The E-470 tolling Authority will be responsible for installing tolling equipment and collecting tolls.
Adams County, Broomfield, Broomfield County, Northglenn, Thornton, Westminster exist along project corridor
RTD has a bus underpass that is getting extended, bus bypass ramp that is being constructed, and will be allowed to use the express lanes
Many stakeholders (NATA, developers, business owners, etc.) exist along the seven-mile project corridor
Some items, such as sign structures, light poles, signs, etc. will have long lead times
Oil prices have the potential to fluctuate greatly over the three-year project duration
Project items quantities will likely fluctuate from those specified in plans. Additional items may need to be added to the contract based on varying field conditions
The length of paving seasons is highly dependent on night time temperatures
Project duration will span three years, so staff turnover is likely