

Risk Matrix

		Financial Impacts of Occurrence				
		Negligible	Marginal	Significant	Critical	Crisis
		Less Than \$2,500,000	\$2,500,000 to \$9,500,000	\$9,500,000 to \$14,000,000	\$14,000,000 to \$23,500,000	More Than \$23,500,000
Likelihood of Occurrence	Certain	Moderate	Moderate	High	High	High
	Very Likely	Low	Moderate	High	High	High
	Likely	Low	Moderate	High	High	High
	Unlikely	Low	Low	Moderate	Moderate	High
	Very Unlikely	Low	Low	Low	Low	Moderate

Legend
Low
Moderate
High

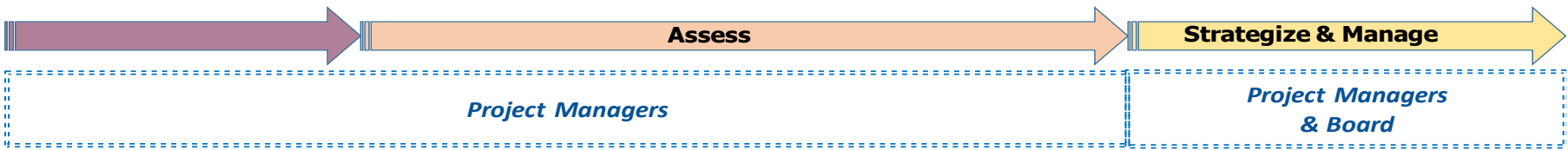
		Schedule Impacts of Occurrence				
		Negligible	Marginal	Significant	Critical	Crisis
		Less Than 4 months	4 months to 6 months	6 months to 12 months	12 months to 24 months	More Than 24 months
Likelihood of Occurrence	Certain	Moderate	Moderate	High	High	High
	Very Likely	Low	Moderate	High	High	High
	Likely	Low	Moderate	High	High	High
	Unlikely	Low	Low	Moderate	Moderate	High
	Very Unlikely	Low	Low	Low	Low	Moderate




TRVA Risk Register modeled after USACE's Cost MCX CSRA risk template.


















Central City Risk Register as of 12/3/19 for North Bypass Channel







Financial Impacts of Occurrence						Legend	Schedule Impacts of Occurrence						
Likelihood of Occurrence		Negligible	Marginal	Significant	Critical		Crisis	Likelihood of Occurrence		Negligible	Marginal	Significant	Critical
		Less Than \$2,500,000	\$2,500,000 to \$9,500,000	\$9,500,000 to \$14,000,000	\$14,000,000 to \$23,500,000	More Than \$23,500,000	Less Than 4 months			4 months to 6 months	6 months to 12 months	12 months to 24 months	More Than 24 months
Likelihood of Occurrence	Certain	Moderate	Moderate	High	High	High	Likelihood of Occurrence	Certain	Moderate	Moderate	High	High	High
	Very Likely	Low	Moderate	High	High	High		Very Likely	Low	Moderate	High	High	High
	Likely	Low	Moderate	High	High	High		Likely	Low	Moderate	High	High	High
	Unlikely	Low	Low	Moderate	Moderate	High		Unlikely	Low	Low	Moderate	Moderate	High
	Very Unlikely	Low	Low	Low	Low	Moderate		Very Unlikely	Low	Low	Low	Low	Moderate

TRVA Risk Register modeled after USACE's Cost MCX CSRA risk template.



Project	Risk Description	Inherent Risk Likelihood of Occurrence	Inherent Risk Impacts		Jurisdictional Agency	Response Timing (If..., Then...)	Risk Management Strategies	Status
			Financial	Schedule				
Local Funding	Funding mechanisms for local funds are not put in place in Q1 of FY20.	Very Likely	●	●	 TRVA	If local funding mechanisms are not put in place in Q1 of FY20 then the predecessor local work falls further behind putting the receipt of Federal funds further at risk.	Avoidance: Extend the TIF or provide other funding mechanisms in order to fund the FY20 projects so the USACE remains eligible for Federal funding.	Active
Utilities in North Bypass Channel	Contracting for Utility construction in the North Bypass Channel has been delayed 3 years which impacts the ability to move forward on design and construction of the North Bypass Channel	Certain	●	●	 FORT WORTH	As of December 2019, utilities in the North Channel are currently on the critical path for the North Bypass Channel Design. If the COFW and Franchise do not complete construction and close-out documents by April of 2022, then it will delay design and construction of North Bypass Channel. Additional congestion is anticipated in the work zones as a result. This could impact cost and schedule.	Mitigation: We may need USACE to allow for ongoing utility construction during Channel construction if we cannot overcome schedule impacts. USACE has not agreed to this at this time.	Active
Federal Funding	The USACE does not receive the entire (\$38M) Federal funding request for FY20	Unlikely	●	●	 USACE	If USACE does not receive Federal funding USACE will be required to postpone the design work identified in the capability request for FY20. If this occurs, the local partners may be less encouraged to fund the local components necessary for the USACE to maintain shovel ready. The critical path requires the USACE bypass channel design to begin in FY21.	Mitigation: If USACE is shovel ready they petition HQ for additional funds when available due to lack of other Districts not obligating funds. Alternatively, Local Sponsor could provide funding to USACE to maintain critical path if desired.	Active

Project	Risk Description	Inherent Risk Likelihood of Occurrence	Inherent Risk Impacts		Jurisdictional Agency	Response Timing (If..., Then...)	Risk Management Strategies	Status
			Financial	Schedule	COFW; USACE; TXDOT; TRVA; TRWD		Acceptance; Avoidance; Mitigation; Transference	Active; On Hold; Closed
Bypass Channel North Design	The USACE does not receive requested capability for Bypass Channel Design in FY20. (\$5M-\$10M)	Unlikely	Negligible 	Significant 		If USACE does not receive requested capability by FY21 then the design of the Bypass Channel will be delayed. Design could resume in Q3 of FY20, however as of December 2019, there is a year of float and the critical path does not require the USACE Bypass Channel design to begin until FY21.	Mitigation: Continue to stay ahead of USACE with Bypass Channel relocations so USACE is shovel ready. Making the project more competitive and likely to receive Federal funds.	Active
Bypass Channel Local Share Hardscape & Softscape Design	Failure to execute contract by March of 2020 will delay start of Bypass Channel Design.	Unlikely	Negligible 	Significant 	TRWD 	HNTB completed Value Engineering. Design is on hold awaiting TRVA Funding. Design of the local components must be at 60% for USACE to start Bypass Channel design. If HNTB contract is not awarded by March of 2020 then USACE will be delayed in starting design of Bypass Channel. As of December 2019, we have 4 months to execute this contract to prevent delay to the Bypass Channel Design.	Avoidance: Go to Board for contract approval by March of 2020	Active
TXDOT Main St	Potential TXDOT bridge delays and change orders, thereby delaying follow on projects and impacting our ability to move forward on construction of North Bypass Channel	Unlikely	Marginal 	Marginal 	TXDOT 	Main Street Bridge completion is needed to finish utilities in the North Channel. As of December 2019, if Main Street Bridge does not complete by June 2021, then it becomes critical and will delay the completion of utilities which will delay the design of the North Bypass Channel. However right now TXDOT is reporting Main to be completed well before that		Active
Local Cash	Impact of not receiving any Federal funding in FY17, FY18, FY19.	Certain	Negligible 	Negligible 	Contingency	If USACE does not receive Federal funding in Q2 of FY20, then local costs will be impacted, however USACE had funds in hand to complete construction that was already designed, and USACE asks for additional capacity to stay ahead.		Active
Oncor Segment A Crossing	Failure for Oncor to mobilize by Q1 of FY21 to get out of the way of USACE construction.	Unlikely	Negligible 	Marginal 	COFW 	Discretionary Service Agreement signed and approved. Work ready to begin. Oncor received the signed DSA, however we have not seen mobilization yet. As of December 2019, there are 12 months of float in the schedule, however if Oncor does not mobilize by the end of Q1 of FY21 then USACE construction will be delayed.		Active
HEC-RAS Modeling	Additional HEC-RAS modeling and Federal permitting needed for any design changes and as-builts.	Very Likely	Negligible 	Negligible 	USACE 	Additional modeling needs are confirmation exercises. No negative impacts are anticipated from the pedestrian bridge value engineering. If there are major design change proposals however, then it could majorly impact the schedule or program design.		On Hold

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Oxbow H&I Valley Storage	Valley storage project not completed on schedule.	Unlikely	Negligible 	Marginal 		Contract was awarded late May 2019 with an NTP of July 25, 2019 and construction is underway and going well. If the project is not completed as planned, then there is float in the schedule and it will not impact follow on projects, however there may be minor impacts until Site I and the haul roads are returned to the Parks Department.		Active
Riverside Park Valley Storage	Project is Complete.	N/A	N/A 	N/A 				Closed

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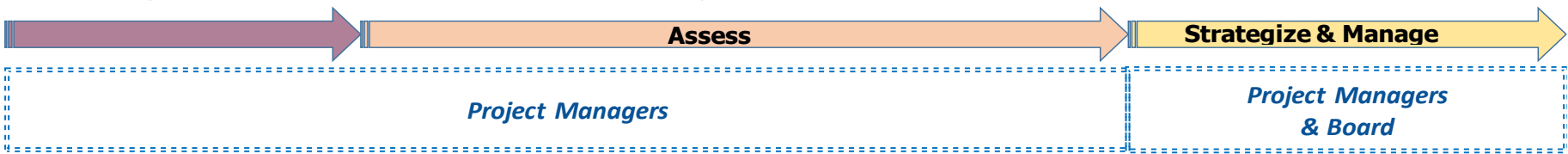
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TXDOT Henderson	Potential TXDOT bridge delays and change orders, thereby delaying follow on projects and impacting our ability to move forward on construction of utilities and design of South Bypass Channel based on the current finish date in Q4 of FY21.	Very Likely	●	●	 COFW; USACE; TXDOT; TRVA; TRWD	As of December 2019, if Henderson St. Bridge does not complete by July of 2021, then construction of Part 14, Oncor Segment C, and South Bypass Channel design will be delayed by the same duration. This will impact cost and schedule. Cost impacts include temporary construction easement extension by TXDOT.	1. Acceptance and Transference (seeing very little mitigation outside of quality related issues). Need to keep pressure politically on TXDOT. 2. Mitigation: Purchase more property for Part 14 and Oncor Segment C to minimize delays caused by bridge construction schedule.	Active
Remaining Demolition and Environmental Work	Remaining Demolition and Environmental work is on hold waiting for TRVA funding. All properties must be demolished and environmentally clean for USACE to start.	Very Likely	●	●	 TRWD	Demolition and environmental work is needed before utility work can begin in the South Channel. If demolition and environmental work is not started by January of 2020 and completion is delayed beyond November of 2020, then it becomes critical and will delay the bidding of Part 14.	Mitigation: Continue to stay ahead of USACE with Bypass Channel relocations so USACE is shovel ready. Making the project more competitive and likely to receive federal funds.	Active

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Water/ Sewer Part 14	Easement acquisition will require condemnation which may impact the schedule and may be costly. Work will be installed between USACE hardwall piers with narrow room for error. This project is also in the Henderson St Detour footprint and can only start 2 months prior to the detour removal.	Very Likely	Marginal 	Critical 	 	Design of Part 14 is scheduled to start in January of 2020 to maintain the critical path. Removal of Henderson St. Detour is required before Part 14 work construction can begin. If Part 14 does not complete construction and close-out documents by September of 2023, then it will delay design and construction of the South Bypass Channel.	1. Avoidance & Transference: Work potentially can be done by USACE and money fronted by locals. 2. Mitigation: Purchase additional property to move the alignment of Water/Sewer line out of Detour.	Active
Utilities in South Bypass Channel	Contracting for Utility construction in the South Bypass Channel has been delayed 3 years which impacts the ability to move forward on design and construction of the South Bypass Channel	Likely	Negligible 	Significant 	COFW 	If Part 13 and AT&T Segment D design does not begin by April of 2020, then they will become critical and will delay the design of the South Channel.	Mitigation: We may need USACE to allow for ongoing utility construction during Channel construction if we cannot overcome schedule impacts. USACE has not agreed to this at this time.	Active
Oncor Segment C Crossing	Crossing design has not begun and work impacts Bypass Channel North Plug B Oncor removal. This project is also in the Henderson St Detour footprint.	Unlikely	Negligible 	Significant 	COFW 	If the project does not start before Q3 of FY20, then the project will become critical because it will prevent USACE from completing design of the South Bypass Channel.	Avoidance: Make sure Oncor knows critical nature of project.	Active
Bypass Channel South Design	Part 14 and Part 13 as-builts impact the completion of the South Bypass Channel Design.	Unlikely	Negligible 	Negligible 	USACE 	If the City does not complete the Part 14 and Part 13 as-builts by September of 2023, then the USACE cannot complete their review and incorporation of the as-builts into the South Bypass Channel Design, which will delay the start of channel construction.	Mitigation: Continue to stay ahead of USACE with Bypass Channel relocations so USACE is shovel ready. Making the project more competitive and likely to receive federal funds.	Active

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