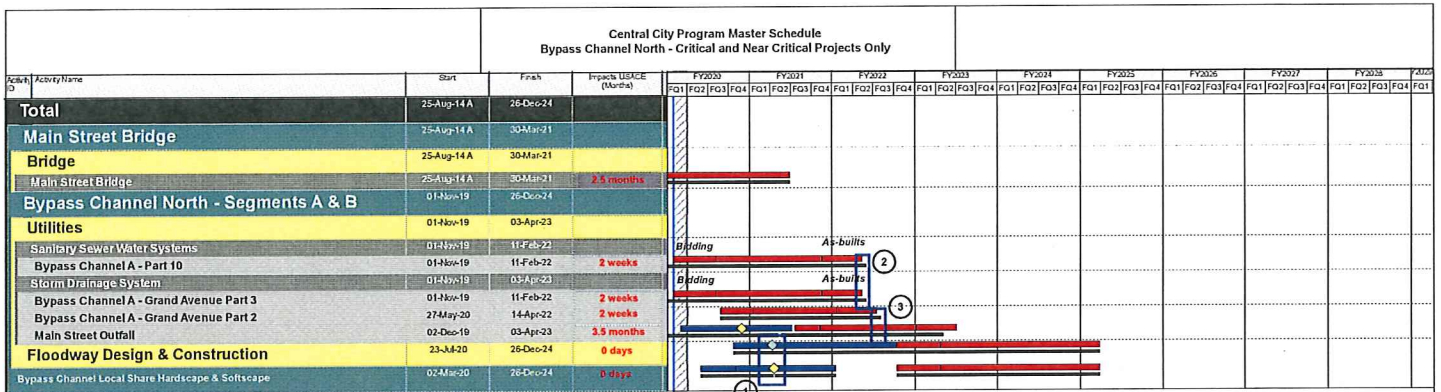


EXHIBIT "C"



SUMMARY (JANUARY 2020):

- 1) **CRITICAL:** Pedestrian Bridge design needs to begin in March of 2020 or the 60% submittal will be delayed and will impact the start of Bypass Channel North design.
RECOMMENDED ACTION: TRWD staff plans to submit the design contract to the TRWD Board for approval in February for a March design start, in order to stay on schedule.
- 2) **NEAR CRITICAL:** Based on status updates received from CoFW, Sanitary Sewer Part 10 and Storm Drainage Part 3 and Part 2 have become near critical.
RECOMMENDED ACTION: City staff plans to advertise these projects in January for award in May, in order to stay on schedule.
- 3) **NEAR CRITICAL:** Any delays in CoFW, Sanitary Sewer Part 10 and Storm Drainage Part 3 and Part 2 may impact the incorporation of as-builts into the final design of USACE Bypass Channel North design.
RECOMMENDED ACTION: City staff plans to advertise these projects in January for award in May, in order to stay on schedule.

Schedule reflects only critical and near critical components of Bypass Channel North. This schedule contains the best information from Project Partners through the end of December 2019 and is subject to change.




<p>Construction-Critical (Red bar)</p> <p>Design-Critical (Blue bar)</p> <p>October Board Dates (Black bar)</p>	<p>60% Design (Yellow diamond)</p> <p>USACE Resume 60% Design (Green diamond)</p> <p>Summary Note (Circle with 1)</p>	<p>TRVA: Summary Level Schedule - by WBS</p> <p>Page 1 of 1</p>	<table border="1"> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> <tr> <td>03-Jan-20</td> <td>January Board Meeting</td> <td></td> <td></td> </tr> </table>	Date	Revision	Checked	Approved	03-Jan-20	January Board Meeting		
Date	Revision	Checked	Approved								
03-Jan-20	January Board Meeting										










Central City Risk Register as of 1/8/2020 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	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		Less Than 4 months		4 months to 6 months	6 months to 12 months	12 months to 24 months	More Than 24 months
	Certain	Very Likely	Likely	Unlikely	Very Unlikely	Low		Certain	Very Likely	Likely	Unlikely	Very Unlikely	Low
	Moderate	Moderate	High	High	High	Low		Moderate	Moderate	High	High	High	High
	Low	Moderate	High	High	High	Moderate		Low	Moderate	High	High	High	High
	Low	Moderate	High	High	High	High		Low	Moderate	High	High	High	High
	Low	Low	Moderate	Moderate	High			Low	Low	Moderate	Moderate	High	High
	Low	Low	Low	Low	Moderate			Low	Low	Low	Low	Moderate	Moderate

Central City Risk Register modeled after USACE's Cost Engineering Center of Expertise Cost and Schedule Risk Analysis template.

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Identify		Assess				Strategize & Manage		
Project Managers						Project Managers & Board		
Project	Risk Description	Inherent Risk Likelihood of Occurrence	Inherent Risk Impacts		Jurisdictional Agency	Response Timing (If..., Then...)	Risk Management Strategies	Status
			Financial	Schedule				
Utilities in North Bypass Channel	Due to local funding limitations, 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	●	●	COFW 	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 as-built 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
Local Funding	Funding mechanisms for local funds are not put in place for FY20.	Board Input Requested	Board Input Requested	Board Input Requested	COFW & TRWD  	If local funding mechanisms are not put in place for FY20 then the predecessor projects fall further behind putting the receipt of Federal funds further at risk.	Avoidance: Funding mechanisms have been identified but not fully implemented by local partners in order to fund the FY20 projects so the USACE remains eligible for Federal funding.	Active

Project	Risk Description	Inherent Risk Likelihood of Occurrence	Inherent Risk Impacts		Jurisdictional Agency COFW; USACE; TXDOT; TRWD	Response Timing (If..., Then...)	Risk Management Strategies Acceptance; Avoidance; Mitigation; Transference	Status Active; On Hold; Closed
			Financial	Schedule				
Bypass Channel North Design	The USACE does not receive requested capability for Bypass Channel Design in FY20. (\$5M-\$10M)	Unlikely	Negligible 	Significant 	USACE 	If USACE does not receive approximately \$5 to \$10 Million by July of 2020, then the 6 month procurement of the Bypass Channel design will be delayed. Design of Bypass Channel North is currently on the critical path and must begin by January of 2021.	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 resolution of local 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 January 2020, we have 3 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
Federal Funding	The USACE does not receive the entire (\$38M) Federal funding request for FY20 which was for design of: Bypass North & South; Rockwood & University; 3 Gates; Storm Water Pump Station; Ecosystem & Adaptive Mitigation	Likely	Negligible 	Negligible 	USACE 	Over the past three years the USACE has made similar size requests for funds to have designs completed and construction shovel ready. All USACE design activities in the request currently have 7 months or more of float due to other local requirement predecessor activities which must be completed ahead of USACE. Due to float available in the schedule, if USACE does not receive the full funding request for FY20, then the majority of the USACE designs will not be impacted.	Mitigation: If USACE does not receive all funds requested they can petition HQ for additional funds when available due to lack of other Districts not obligating funds.	Active

**Central City Program Master Schedule
Bypass Channel South - Critical and Near Critical Projects Only**

Activity Name	Start	Finish	Float Bypass Channel South	FY2020		FY2021		FY2022		FY2023		FY2024		FY2025		FY2026		FY2027		FY2028	
				F01	F02	F03	F04	F01	F02	F03	F04	F01	F02	F03	F04	F01	F02	F03	F04	F01	F02
Total	25-Aug-14A	24-Jul-23																			
Henderson Street Bridge	25-Aug-14A	30-Jul-21																			
Bridge	25-Aug-14A	30-Jul-21																			
Henderson Street Bridge	25-Aug-14A	30-Jul-21	0 days																		
Bypass Channel South - Segments C & D	02-Dec-19	24-Jul-28																			
Land, Relocation, Demolition and Environmental Remediation	02-Jan-20	10-Feb-21																			
Bypass Channel C	03-Jan-20	10-Feb-21																			
Demolition and Environmental Remediation - Police and Fire	02-Dec-19	10-Feb-21	2 weeks behind																		
Utilities	03-Dec-19	18-Oct-23																			
Sanitary Sewer Water Systems	13-Feb-20	15-Oct-23																			
Bypass Channel C - Part 14	10-Feb-20	18-Oct-23	2 weeks behind																		
Bypass Channel D - Part 13	01-Apr-20	28-Sep-23	0 days																		
Storm Drainage System	01-Apr-20	31-Mar-23																			
Bypass Channel D - Greenleaf	01-Apr-20	31-Mar-23	6 months																		
AT&T	02-Dec-19	14-Apr-22																			
Bypass Channel D	02-Dec-19	14-Apr-23	5.5 months																		
Oncor	02-Dec-19	28-Apr-23																			
Oncor - Bypass Channel C	02-Dec-19	28-Apr-23	5 months																		
Floodway Design & Construction	10-Feb-22	24-Jul-28	2 weeks behind																		

SUMMARY (JANUARY 2020):

1) **CRITICAL:** If TXDOT Henderson Street Bridge is not re-routed off detour by July of 2021, then construction of CoFW Sanitary Sewer Part 14, Oncor Segment C, and USACE South Bypass Channel will be delayed.

RECOMMENDED ACTION: TxDOT is working with Texas Sterling to remove traffic from detour by summer of 2021.

2) **CRITICAL:** Due to delay in funding and revised duration for TRWD Demolition and Environmental of Police and Fire, completion of this project has become critical and will impact the start of CoFW Sanitary Sewer Part 14 project.

RECOMMENDED ACTION: TRWD staff plans to submit the environmental contract to the TRWD Board for approval in January, in order to stay on schedule.

3) **NEAR CRITICAL:** As built for the following projects are near critical and are needed to complete USACE design: Sanitary Sewer Part 13, Storm Drainage Greenleaf, and Franchise AT&T Segment D and Oncor Segment C.

RECOMMENDED ACTION: City staff plans to progress these projects in accordance with the required schedule.

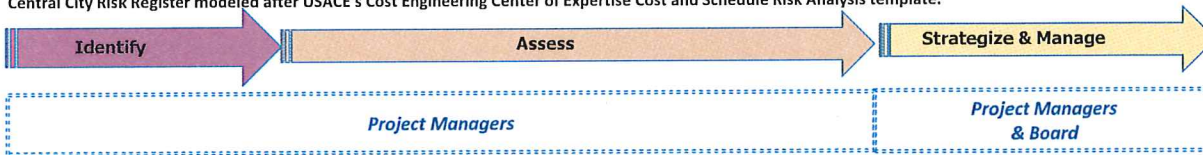
Schedule reflects only critical and near critical components of Bypass Channel South. This schedule contains the best information from Project Partners through the end of December 2019 and is subject to change.

Construction-Critical Design-Critical October Board Dates	① Summary Note	TRVA: Summary Level Schedule - by WBS Page 1 of 1	Date 08-Jan-20	Revision January Board Meeting	Checked	Approved
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Central City Risk Register as of 1/8/2020 for South Bypass Channel




Financial Impacts of Occurrence						Legend		Schedule Impacts of Occurrence					
Likelihood of Occurrence	Negligible	Marginal	Significant	Critical	Crisis	Low	Moderate	High	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 \$25,500,000	More Than \$25,500,000				Less Than 4 months	4 months to 6 months	6 months to 12 months	12 months to 24 months	More Than 24 months
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	Moderate	Moderate	High	High	High				Moderate	Moderate	High	High	High
	Low	Moderate	High	High	High				Low	Moderate	High	High	High
	Low	Moderate	High	High	High				Low	Moderate	High	High	High
	Low	Low	Moderate	Moderate	High				Low	Low	Moderate	Moderate	High
	Low	Low	Low	Low	Moderate				Low	Low	Low	Low	Moderate

Central City Risk Register modeled after USACE's Cost Engineering Center of Expertise Cost and Schedule Risk Analysis template.



Project	Risk Description	Inherent Risk Likelihood of Occurrence	Inherent Risk Impacts		Jurisdictional Agency	Response Timing (If..., Then...)	Risk Management Strategies	Status
			Financial	Schedule				
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	Marginal	Crisis	TXDOT 	As of January 2020, if the traffic shift off of Henderson St Detour 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.	1. Acceptance and Transference (seeing very little mitigation outside of quality related issues). Need to keep pressure politically on TXDOT. 2. Mitigation: Discuss schedule with TXDOT to shift traffic off of Henderson St. detour sooner to not delay Part 14, Oncor Segment C, and South Bypass Channel design.	Active

Project	Risk Description	Inherent Risk Likelihood of Occurrence	Inherent Risk Impacts		Jurisdictional Agency COFW; USACE; TXDOT; TRWD	Response Timing (If..., Then...)	Risk Management Strategies Acceptance; Avoidance; Mitigation; Transference	Status Active; On Hold; Closed
			Financial	Schedule				
Water/ Sewer Part 14	Easement acquisition may 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 	COFW 	Design of Part 14 is scheduled to start in February of 2020 to maintain the critical path. Removal of Henderson St. Detour is required before Part 14 work construction can begin. If easement is not acquired by November of 2020, then it delays the start of Part 14 construction. If Part 14 does not complete construction and as-built documents by September of 2023, then it will delay design and construction of the South Bypass Channel.	1. Mitigation: Discuss schedule with TXDOT to shift traffic off of Henderson St. detour sooner to not delay Part 14. 2. Avoidance & Transference: Part 14 potentially can be done by USACE and money fronted by locals.	Active
Utilities in South Bypass Channel	Due to local funding limitations, 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 completion of South Bypass Channel Design. 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: The COFW to get a commitment from Oncor to stay on current schedule.	Active
Remaining Demolition and Environmental Work	Remaining Demolition and Environmental work is on hold waiting for local funding. All properties must be demolished and environmentally clean for USACE to start.	Very Unlikely	Negligible 	Negligible 	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

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; TRWD		Acceptance; Avoidance; Mitigation; Transference	Active; On Hold; Closed
Bypass Channel South Design	As-builts of Part 14 and Part 13 impact the USACE design completion of the South Bypass Channel.	Unlikely	Negligible 	Negligible 	USACE 	If USACE does not receive the Part 14 and Part 13 as-builts by September of 2023, then their review and incorporation of the as-builts into the South Bypass Channel Design cannot be completed, 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