

Update from Consultant Team


Neches Regional Flood Planning Group

April 25, 2023

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Agenda

- Task 12 Update
 - City of Tyler Master Drainage Plan
 - City of Jasper Master Drainage Plan
- Task 13 Update
 - Additional FMXs
 - Preliminary Discussion of FMXs to be included in the Amended Regional Flood Plan



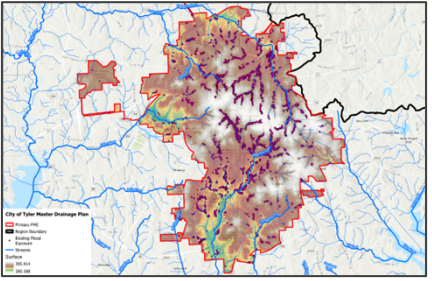
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Task 12 Update

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City of Tyler Master Drainage Plan

- FME ID: 051000058
- Sponsor: City of Tyler
- Perform H&H modeling to identify and define flood risk, develop conceptual alternatives to reduce flood risk, develop OPCC for conceptual alternatives, and rank projects.



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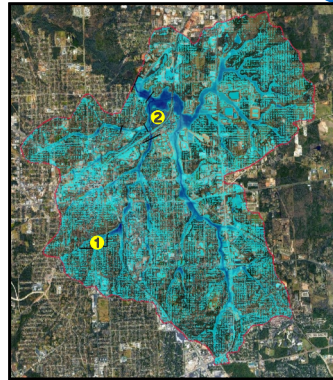
City of Tyler FME Update 5

Study Area: Upper Black Fork Creek Watershed

Preliminary Modeling Results:

- 1 Azalea District
 - 55 Residential Structures improved
 - 24 Commercial Structures improved
- 2 Gentry Regional Detention
 - 40 Residential Structures improved
 - 16 Commercial Structures improved

(all results provided are the 100-year event)



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City of Tyler FME Update – Azalea District 5

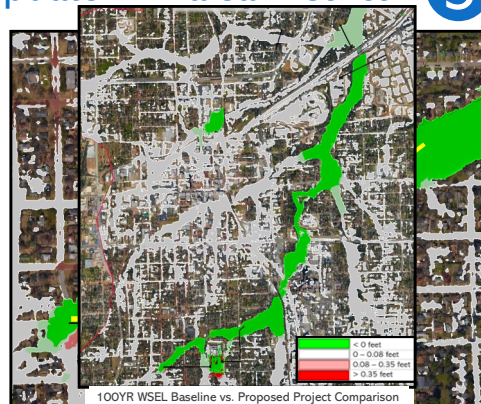
- Reduced to 3.0 acre detention
 - ~65 ac-ft of storage
- Dual-use facility instead of underground detention
 - Terraced limestone walls
 - Soccer field dual-use
- Shorter Outfall Pipe route selected
 - Negligible difference in results, existing storm in street
- Additional channel modifications had negligible affects on results
 - (< 3 inches)
- Minor impacts
 - Limited to ROW and one potential acquisition



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City of Tyler FME Update – Azalea District 5

- 65 ac-ft detention basin
- 8'x6' RCB diversion
- 24" RCP diversion outfall
- 0.25' – 1.3' of WSEL reduction



100YR WSEL Baseline vs. Proposed Project Comparison

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City of Tyler FME Update - Gentry Regional Detention 5

- Approximately 28-Acre Detention Pond
 - 160 ac-ft of storage
 - Detention pond amenity with potential for recreation, trail systems, and park space



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City of Tyler FME Update - Gentry Regional Detention

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- Detention, roadway crossing, and channel improvements
- Three roadway crossing improvements chosen
 - Proposed culvert data provided by City of Tyler
- Channel improvements
 - 1: 1200 LF
 - 2: 1600 LF
 - 3: 700 LF
- Minor impacts
 - Limited to ROW and drainage easements

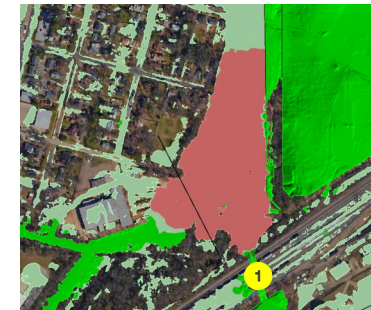


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City of Tyler FME Update – Gentry Regional Detention

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- Crossing #1
 - Existing 11'x6' RCB → Proposed 2-12'x12' RCBs



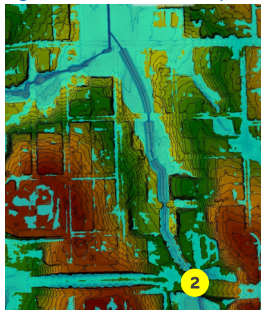
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City of Tyler FME Update – Gentry Regional Detention

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Crossing #2

- Existing 10'x10' RCB → Proposed 2-10'x10' RCBs

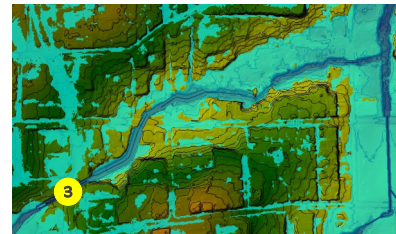


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City of Tyler FME Update – Gentry Regional Detention

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- Crossing #3 Improvements
 - Existing 11.5'x7' RCB → Replace with 2-10'x7' RCBs

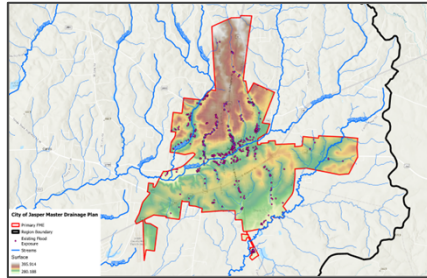


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City of Jasper FME Update

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- FME ID: 051000052
- Sponsor: City of Jasper
- Perform H&H modeling to identify and define flood risk, develop conceptual alternatives to reduce flood risk, develop OPCC for conceptual alternatives, and rank projects.

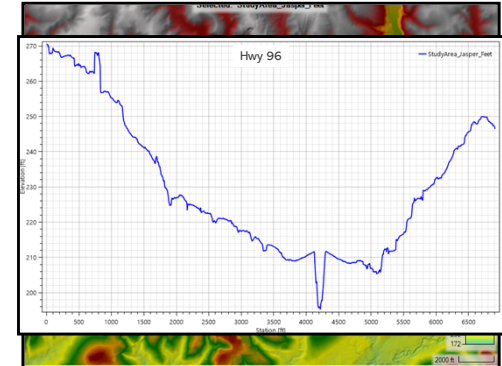


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City of Jasper FME Update

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- Study Area: Sandy Creek Watershed
 - City limits within creek valley
- Projects Evaluated
 - Detention Ponds
 - Detention Ponds with Diversion Culverts
- Area experiences flooding during more frequent rain events
 - 5-YR 25-HR event, 6.17 in

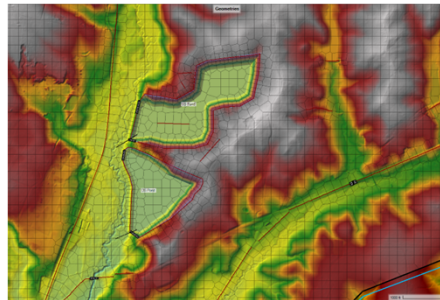


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City of Jasper FME Update

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- Twin Detention Pond alternative further examined
 - Ponds edited to typical detention design
 - 4:1 side slopes
 - 30 ft maintenance berm
 - Ponds redesigned to tie into existing terrain as best as possible
 - Elevations to tie into ranged from 226 ft to approximately 290 ft
- Total Storage Volume
 - **1194.2 ac-ft**
 - 711.3 ac-ft for US Pond
 - 482.9 ac-ft for DS Pond

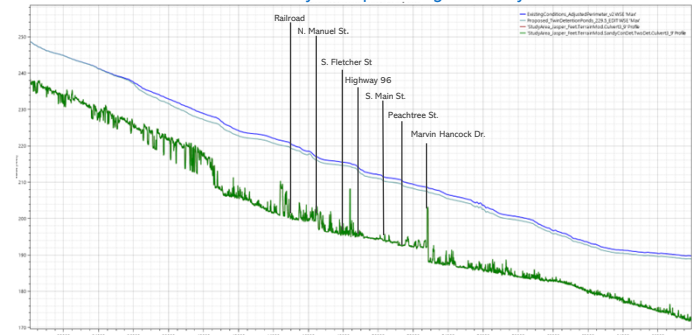


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City of Jasper FME Update

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- 1194.22 ac-ft of storage
 - ~1.1' reduction in WSE within the City of Jasper during the 100-year event

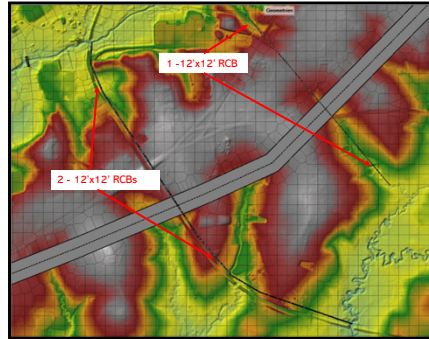


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City of Jasper FME Update

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- Diversion from Sandy Creek to Big Walnut Run
 - 3 – 12'x12' RCB
- Diversion intended to be implemented in conjunction with dual detention pond layout

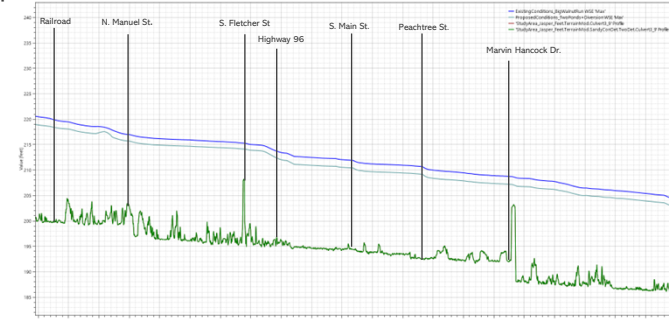


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City of Jasper FME Update

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~1.5' of WSE reduction achieved within the city of Jasper upon implementation of both alternatives

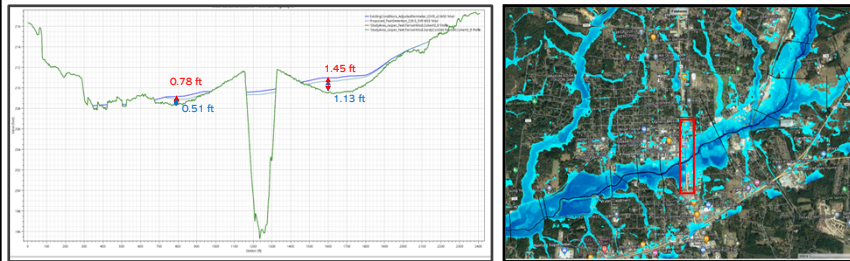


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City of Jasper FME Update

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- Atlas-14 5-YR Event
 - 24 HR rainfall = 6.17 in

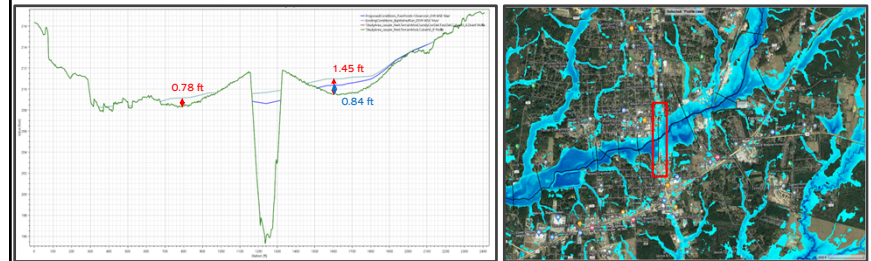


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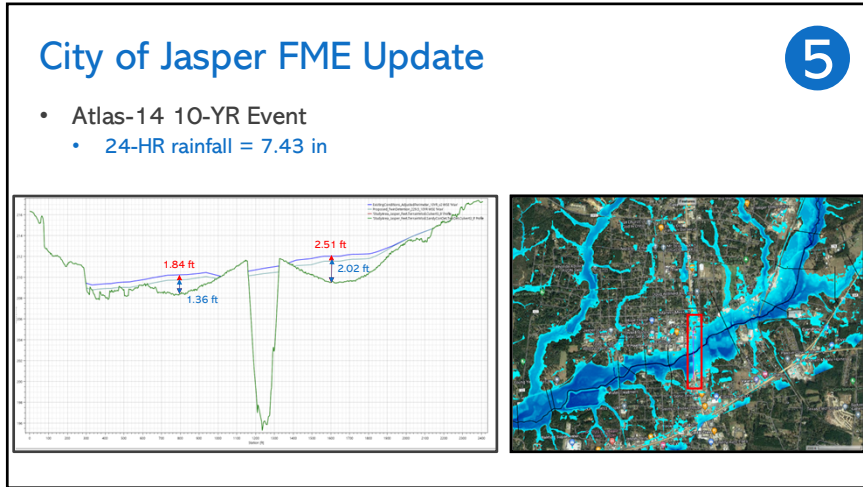
City of Jasper FME Update

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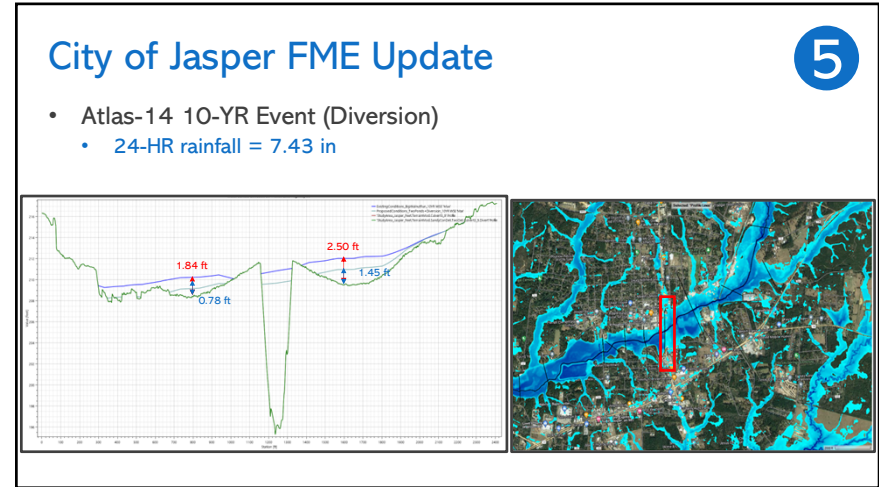
- Atlas-14 5-YR Event (Diversion)
 - 24 HR rainfall = 6.17 in



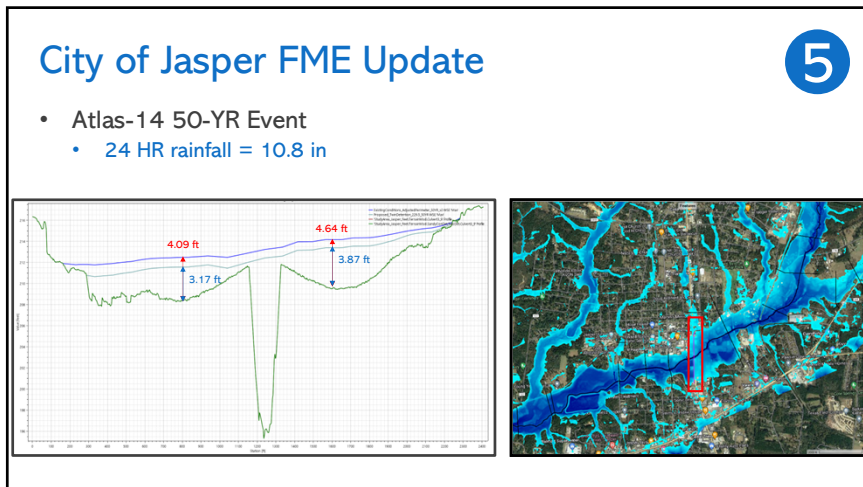
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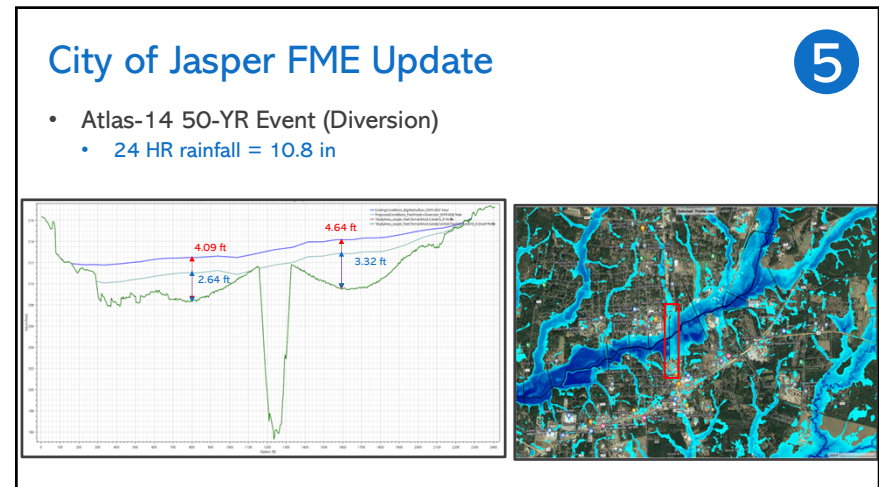
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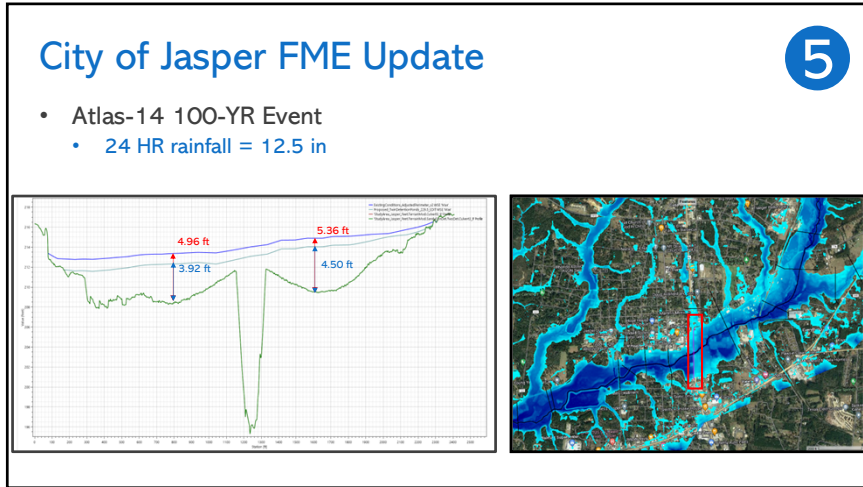
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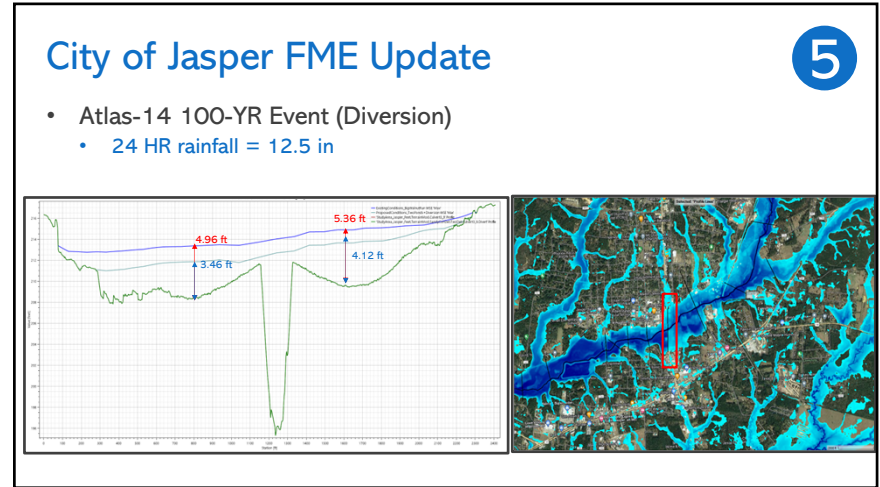
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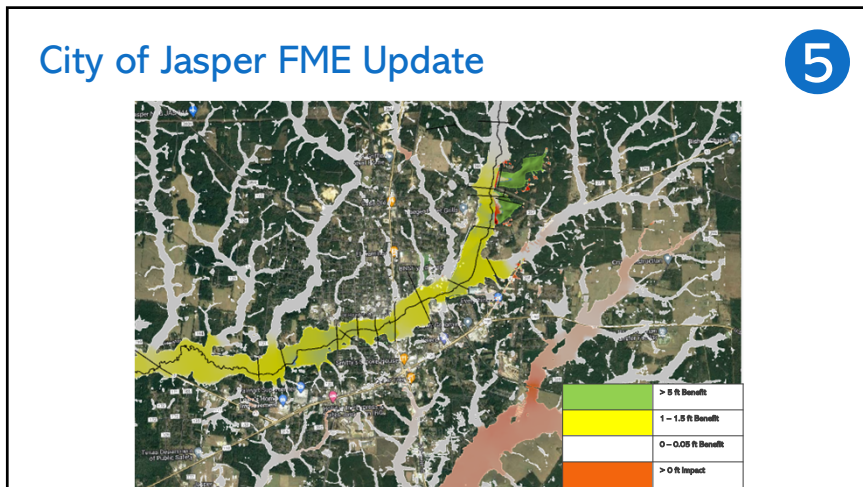
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Task 12 – FMX Updates

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- Continued coordination with stakeholders in the region to obtain necessary information
- For all Flood Mitigation Actions (FMEs and FMPs):
 - Compile **Project Information** including **Flood Exposure Data**
 - Develop planning-level **Cost Estimates**
 - Identify a willing **Project Sponsor**
 - Identify **Funding Sources**
- For FMPs (and some FMSs):
 - Perform **Benefit-Cost Analysis**
 - Provide **No Negative Impact Certification**

Flood Exposure Data (100-yr Flood)

- Structures
- Population
- Critical Facilities
- Low Water Crossings
- Agricultural Areas
- Roads

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Task 12 – FMX Updates

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- Existing FMP/FME Update
 - FMEs to be removed after stakeholder feedback:
 - Ditch 100A (East Caldwell) Improvements (FME ID 051000097)
 - Upper Johns Gulley Upgrade Drainage Channel (FME ID 051000112)
 - Shreveport Additional Pumping Equipment (FME ID 051000141)
 - Channel 100-A Concrete Repair (FMP ID 053000003) to be re-classified as an FME
 - Further detailed analysis necessary to accurately measure project benefit
- Additional FMP/FME Update
 - Two new FMEs identified
 - Calder Diversions Connections
 - Delaware Detention
 - Crane Bayou Channel Improvements (FME ID 051000124) and Main A Channel Improvements (FME ID 051000118) to remain FMEs
 - Funding will not be acquired in time for actions to be included in the Amended Flood Plan

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Task 12 – Recommendation of FMXs

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- Determine if there are any actions on the list of identified FMEs and FMPs that the RFPG should not support
- Encourage the RFPG to favor inclusion of FMXs while understanding that there is **no obligation to take action and no financial commitment associated with FMX sponsorship**

Final Recommendations Will:

- Align with TWDB requirements and regional goals
- Address areas of greatest need (risk and/or knowledge gaps)
- Demonstrate potential for benefit
- Have sponsor support

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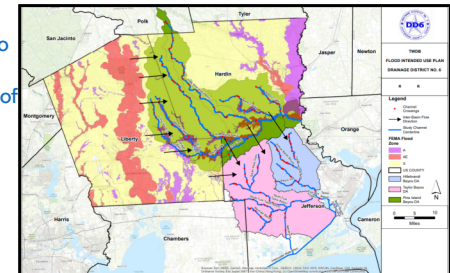
Task 13 Update

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Jefferson County Drainage District 6 FIF Update

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- 12 standalone flood mitigation projects identified
 - Calder Diversions Connections to remain an FME
 - Currently evaluating the benefit of each standalone project
- Opinions of Probable Construction Cost (OPCCs) obtained for most of the identified projects
 - Coordination ongoing with both JCDD6 and the JCDD6 FIF team



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Task 13 Update – New FMPs

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	FMP Name	Project Type	Sponsor(s)	Cost
1	City of Tyler Improvements*	Comprehensive	City of Tyler	TBD
2	City of Jasper Improvements*	Comprehensive	City of Jasper	TBD
3	Hardin County SE Area Drainage System*	Comprehensive	Hardin County	TBD
4	Bridge City Drainage Outfall Improvement Project*	Channel	Orange County Drainage District	TBD
5	Pevitot Gully Improvement System	Comprehensive	Jefferson County Drainage District 6	\$333,636,509
6	Willow Marsh Bayou Phenlan Blvd Detention	Comprehensive	Jefferson County Drainage District 6	\$210,664,840
7	Willow Marsh Main Improvement System	Comprehensive	Jefferson County Drainage District 6	\$1,174,212,087
8	Willow Marsh Downstream Improvement System	Comprehensive	Jefferson County Drainage District 6	\$122,080,814
9	Tyrell Park Improvements	Channel	Jefferson County Drainage District 6	\$25,095,036
10	Rosedale Improvement System	Comprehensive	Jefferson County Drainage District 6	\$333,908,394
11	Nome Conveyance Improvements	Comprehensive	Jefferson County Drainage District 6	\$163,293,623
12	Sour Lake Channel Improvements	Channel	Jefferson County Drainage District 6	\$962,391
13	Green Pond Flow Diversion	Comprehensive	Jefferson County Drainage District 6	\$7,779,028
14	Mayhaw Bayou Regional Detention Basin	Detention	Jefferson County Drainage District 6	TBD

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Task 13 Update – New FMPs

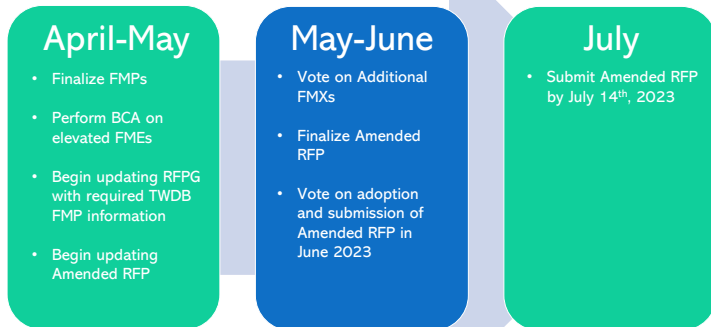
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No.	FMP Name	Project Type	Sponsor(s)	Cost
15	North Taylors Regional Detention Facility	Detention	Jefferson County Drainage District 6	\$35,782,849
16	South Taylors Bayou Regional Detention	Detention	Jefferson County Drainage District 6	TBD
17	Tevis Diversion	Channel	Jefferson County Drainage District 6	\$97,327,200
18	South Park Diversion*	Channel	Jefferson County Drainage District 6	\$99,908,750
19	Blanchette Diversion*	Channel	Jefferson County Drainage District 6	\$99,173,000
20	Tyrell Park Detention	Detention	Jefferson County Drainage District 6	TBD
21	East China Relief	Comprehensive	Jefferson County Drainage District 6	TBD
22	South Nome Relief	Comprehensive	Jefferson County Drainage District 6	TBD
23	Ditch 505 Detention	Detention	Jefferson County Drainage District 6	TBD
24	Virginia Street Detention	Detention	Jefferson County Drainage District 6	\$9,751,456
25	Delaware Diversion (II)*	Channel	Jefferson County Drainage District 6	TBD
26	Borley Heights Relief	Comprehensive	Jefferson County Drainage District 6	TBD

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Planning Schedule

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