CITY OF VICTORIA
DRAINAGE MASTER PLAN UPDATE
STAKEHOLDER PRESENTATION

January 12, 2021
Outline

• Team and Stakeholder Introductions
• History of Drainage Master Plan
• Proposed Study Update
• Scope of Work
  – Priority One: Independent Study Areas
  – Priority Two: Drainage Criteria Manual Update
  – Priority Three: Storm Sewer System Evaluation
  – Priority Four: Roadside Open Ditch Evaluation
  – Priority Five: Major Outfalls
• Sample of Preliminary Results
• Stakeholder Input
Introductions

• City of Victoria
  – Ken Gill, P.E., Director of Public Works/City Engineer
  – Jesús Garza, City Manager
  – Mike Etienne, Assistant City Manager

• Consultant Team
  – Melvin Spinks, P.E., Program Director, CivilTech Engineering, Inc.
  – Mike McGovern, P.E., Project Manager, CivilTech Engineering, Inc.
  – Ray Bridges, P.E., Deputy Project Manager, Urban Engineering, Inc.

• Stakeholders
  – Name, Company & Affiliation
History of Drainage Master Plan

- First Storm Drainage Master Plan in 1982 by Urban Engineering, Inc.
- Storm Drainage Master Plan and Drainage Criteria Manual in 1999 and 2007 (Updates) by PBS&J
  - Proposed Improvements to Reduce Flooding Complaints
  - Completed Major Drainage Projects
    - West Outfall Phase I and II
    - Lone Tree Creek Detention Basins
    - Lone Tree Creek Improvements
    - Northcrest Drainage Improvements
Proposed Study Update

- CivilTech Engineering, Inc. and Urban Engineering, Inc.
- Study Time: September 16, 2020 – April 30, 2021
- Scope of Work - Five Priorities
- Deliverables
Scope of Work – Priority One through Priority Five
Priority One –
Independent Study Areas

1) Select up to 30 Parcels for Study (Drainage Needs)
   • Use 2020 Victoria Land Use Study (Verdunity Land Use and Fiscal Analysis) to identify parcels

2) Identify future land use, floodplain fill and detention needs for each parcel

3) Determine outfall drainage needs for each parcel

4) Prepare preliminary drainage design concepts and costs

5) Provide a technical document for each parcel
Priority Two – Drainage Criteria Manual Update

1) Update detention policy and detention design procedures in Drainage Criteria Manual
2) Review detention policies and design procedures for other Texas cities
3) Examine establishing new detention rates and design procedures based on development size
4) Provide an analysis to demonstrate new NOAA Atlas 14 (2018) precipitation values on peak runoff rates and detention storage requirements
5) Prepare a technical memorandum
Priority Three – Storm Sewer System Evaluation

1) Compute drainage flow paths and ponding depths using ArcHydro GIS modeling
2) Perform a 100-year sheet flow analysis using HEC-RAS 2D Rain-On-Grid
3) Perform a level of service analysis for the existing storm sewer systems in the City
4) Provide pipe capacity charts for full flow and partially block pipes (¼ blocked, ½ blocked, ¾ blocked)
5) Prepare cost estimates for storm sewer maintenance such as televising and cleaning storm sewers
6) Prepare cost estimates to replace all pipes under 18-inch diameter with 24-inch pipes
7) Prepare a technical memorandum
Priority Four – Roadside Open Ditch Evaluation

1) Identify miles of roadside ditches in residential areas and along arterial/collector streets in the City
2) Document examples of silt and its effects in roadside ditches
3) Provide ditch capacity charts for full flow and partially block ditch sections (¼ blocked, ½ blocked, ¾ blocked)
4) Prepare cost estimates for ditch maintenance such as reshaping and replacing driveway culverts
Priority Five – Major Outfall Channels

1) Identify miles of open channels and outfalls (grass and concrete lined)

2) Drone video channels to perform a condition assessment for maintenance needs such as de-silting and concrete lining failures

3) Identify on a GIS layer the proposed ROW requirements for the proposed channel improvements identified in the current Storm Drainage Master Plan

4) Evaluate channel reaches where channel improvements could reduce floodplain widths

5) Prepare cost estimates for channel maintenance such as cleaning or reshaping, concrete lining replacements

6) Prepare cost estimates for channel improvements
Jim Branch Outfall to N. Ben Jordan St.
2D 100-Year Storm Overland Flow Animation
Study Timeline

- **Priority One:** Independent Study Areas - Complete by 2/19/2021
- **Priority Two:** Drainage Criteria Manual Update – Complete by 2/26/2021
- **Priority Three:** Storm Sewer System Evaluation – Complete by 2/26/2021
- **Priority Four:** Roadside Open Ditch Evaluation – Complete by 2/19/2021
- **Priority Five:** Major Outfalls – Complete by 2/19/2021
- **Draft Report** - Complete by 3/26/2021
- **Final Report** – Complete by 4/30/2021
Stakeholder Input

1) Drainage Problem Areas
2) Detention Criteria
3) Drainage Improvement Needs
4) Other Issues

Send comments or questions:
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Future Updates

• City of Victoria Web Site
  (https://www.victoriatx.gov/754/Drainage-Master-Plan)

• Next Stakeholder Meeting