



# Low Water Crossings

City Council  
July 22, 2024

# Background and Overview

At their June 3<sup>rd</sup> meeting, City Council requested an update on flooding and low-water crossings

This report provides an overview of each of the crossings in the city including existing conditions and planned or identified measures to enhance each





# Background - What Actions are Taken During Flooding Now?

## General operations:

For roadways with full-sized gates, the gates are operated to close the roadway by either Police or Public Works staff and reopened after flooding has receded



For roadways with “mini-gates”, the gates are operated by Police or Public Works staff to warn drivers of hazards ahead – these do not close the roadway



For roadways with roadside, post-mounted, flip-down signs, the signs are opened by Public Works staff to warn drivers of hazards – these do not close the roadway



Portable barricades available for deployment at other flood-prone areas as necessary based on individual storm events and conditions

# Low Water Crossings

In general are:

*Roadways that become submerged and impassable during moderate rainfall events by flows from intersecting creeks or streams that otherwise flow beneath the roadways via culverts*

Four city locations considered low water crossings:

- CR 1019 (Hooper Business Park)
- South Fox Lane
- Hulen Street
- SE Tarrant Avenue



Many locations across the city experience flooding during heavy or prolonged rain events but are not considered low water crossings



# CR 1019 (Hooper Business Park)

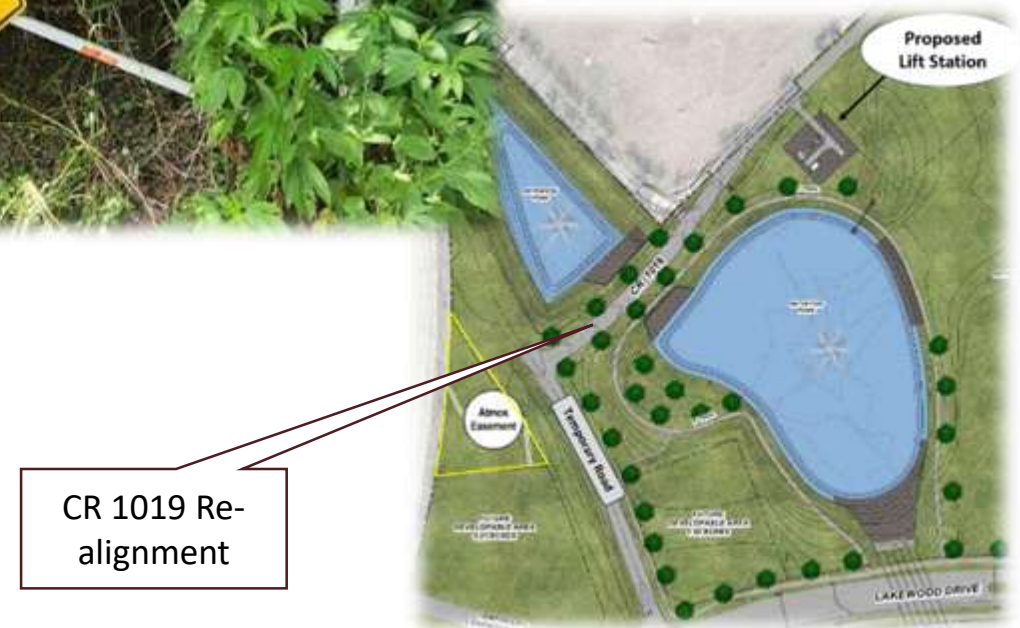
## Existing Conditions

- Annexed with Hooper Business Park
- Floods in moderate rain events
- “Mini” gates with signage



## Planned Short-term Improvements

Low water crossing to be eliminated with realignment of CR 1019 as part of the Hooper Business Park retention project (construction bidding summer 2024) with an estimated paving improvement cost of \$699,672 (total project cost \$6,500,000)



# South Fox Lane

## Existing Conditions

- Floods in moderate rain events
- Flood gauge
- When flooded, there is no public outlet for (or emergency response access to) residents along Fox Ln. and Antonio Ct.
- No gates installed as they would exacerbate the access issue above

## Future Potential Improvements

- Additional signs/flashers – Estimated cost \$125,000 - \$150,000
- Explore connection to Hidden Creek Parkway to provide additional public egress and emergency response access
- Gates if connection to Hidden Creek Parkway is made





# Hulen Street

## Existing Conditions

- Constant flow of water except in prolonged dry conditions
- “Watch for Water” / “Turn Around Don’t Drown” signs
- Flood gauges
- Moderate rain events result in flooding
- Gates are manually closed to prevent vehicles from accessing

## Future Identified Improvements

- Bridge over railroad
- Estimated Cost - \$20m - \$25m (2024 dollars)
- Currently un-funded; exploring grants



# SE Tarrant Ave

## Existing Conditions

- Floods in moderate rain events with frequent road closures
- Low water crossing signs
- No gates, temporary barricades deployed

## Pending Improvements

### SE Tarrant Sewer Erosion Control Project

- Council approved design contract in May 2024, construction anticipated early 2025
- Project addresses erosion threatening sewer infrastructure
- Project raises crossing subject to downstream adverse impacts to reduce the frequency of flooding the road
- Total project estimated cost - \$1,100,000

### Texas Water Development Board Grant Application

- Grant application includes safety improvements at this location
- Anticipated notification in August
- Estimated \$124,000 (includes signs and flashers)





## Examples of roadways that flood in heavy or prolonged rain events

- Alsbury Blvd
- Bethesda Rd
- Bowden Circle
- CR 714
- CR 914
- CR 1021
- Dobson Rd
- N. Fox Lane
- Johnson Ave
- Hillery St
- E Miller St
- Suzanne Terrace





CR 714



Hillery St at SH 174



Suzanne Terrace



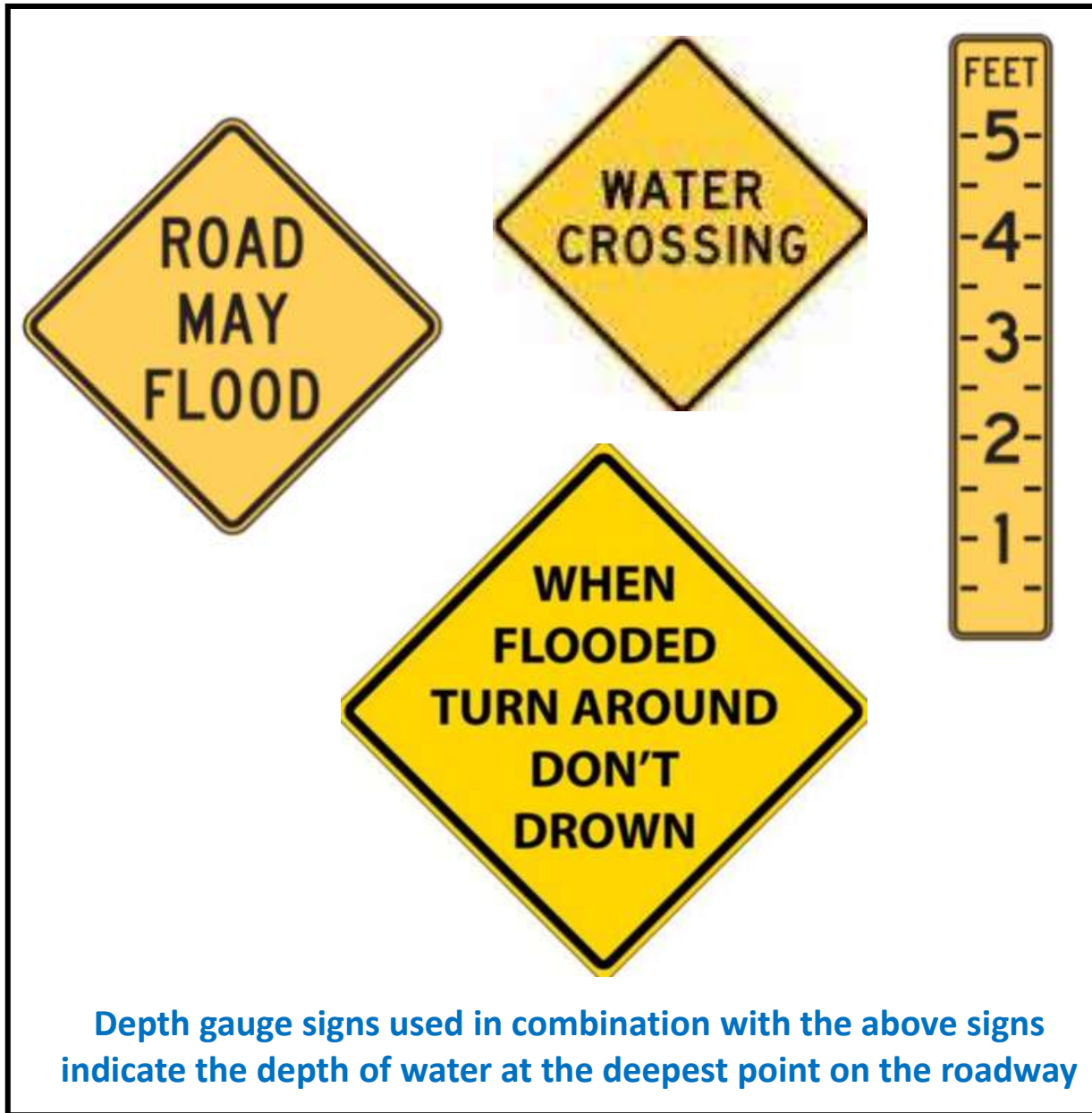
# Typical Flood Warning Signs

**Road May Flood** – used to warn section of road is subject to frequent flooding

**Water Crossing** – used to warn of a dip or low area where road is normally underwater (should not be used where water only occasionally crosses the road in heavy rains)

**When Flooded Turn Around Don't Drown** – used in addition to other warning signs

Staff recently reviewed low water crossings and flood-prone areas and is installing and/or replacing signage for additional visibility and consistency



# Preliminary Costs

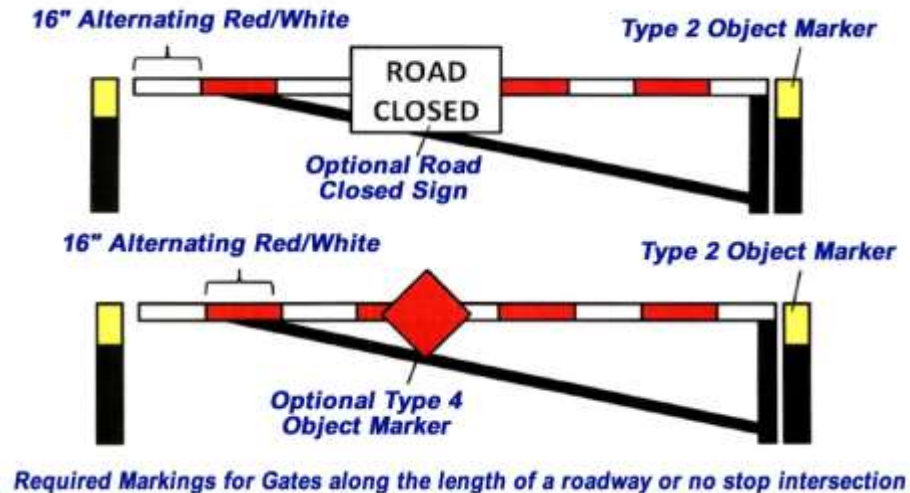
**Manual gates** – \$12,000 to \$24,000 per location depending on roadway width to be closed and site conditions

Note: manual gates require staff to be deployed to operate

**Sensor-activated (Automated) gates** – \$35,000 to \$50,000 per location depending on width of roadway to be closed plus O&M costs (power, staff time to test regularly, etc.)

**Sensor-activated (Automated) Flashers with signs** – \$124,000 - \$145,000 per location plus O&M costs (power, staff time to test regularly, etc.)

## Examples





# Next Steps

Hear Council feedback tonight

Complete signage refresh by August 2024

Receive feedback from Texas Water  
Development Board on grant application  
August / September 2024 and follow up as  
necessary



# Questions / Discussion

## **Staff Contact**

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