

# SPRING CREEK — BIRCH CREEK DETENTION

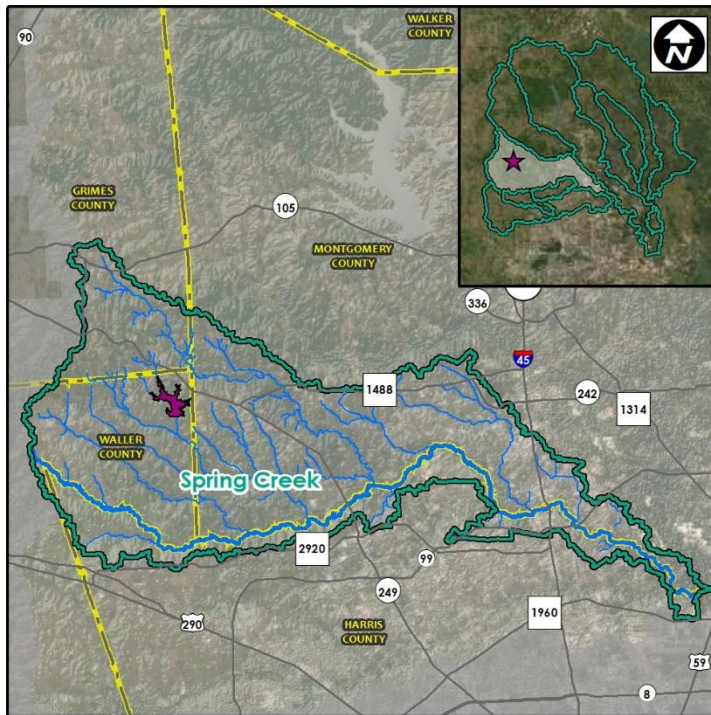
*(Recommend Project in SJMDP)*

**LOCATION:** Approximately 12 miles U/S of Spring Creek on Birch Creek

**OBJECTIVE:** Reduce flooding along Spring Creek

**HOW IT WORKS:** Dry dam detention facility impounds stream flow during flood events

**IMMEDIATE DOWNSTREAM BENEFIT:** Incremental Atlas 14 WSEL reduction – 1% ACE to 2% ACE



## IMPROVEMENT SPECIFICATIONS

- Dry dam detention facility
- 873 acres (1% ACE)
- 917 acres (PMF)
- 7,731 acre-feet (1% ACE)
- Embankment: 460k cubic yards
- Max dam height: 41 ft
- Dam length: 0.7 miles

## ESTIMATED BENEFITS

- Structures removed from 1% ACE floodplain: 815
- Reduction in instances of flooding over 50-year period: 1,084
- Benefited areas:
  - The Woodlands, Tomball, Stagecoach
- Reduces 1% ACE WSEL at least 0.5 feet for 25.9 miles along Spring Creek
- Improves ponding depths on 13 road/rail crossings
- Net Present Value Benefit: \$66.0M

## OPPORTUNITIES AND CHALLENGES

### POTENTIAL PARTNERS

Waller County, Montgomery County, SJRA, USACE, MUD 386, The Woodlands Township, Woodlands Water Agency, City of Tomball, TWDB, GLO, FEMA, HCFCD

### REQUIRED REAL ESTATE

- 71 parcels within PMF
- 15 parcels within 1% ACE WSEL

### DESKTOP ENVIRONMENTAL MITIGATION

- 2.1 acres of potential wetlands
- 1,370 linear feet of NHD streams

### RELOCATIONS/RECONSTRUCTION\*

- 1 oil & gas pipeline conflicts
- 0.6 miles of roads (PMF)
- 0.3 miles of roads (1% ACE)

## ESTIMATED COSTS

Design Cost.....	\$3M
Construction Cost.....	\$23M
Environmental Cost.....	\$6M
ROW Cost.....	\$48M-\$88M
<b>TOTAL COSTS.....</b>	<b>\$80M-\$120M</b>
20-Year Escalation Cost .....	\$121M-\$181M

**BENEFIT-COST RATIO: 0.55-0.83**

\*Costs for these items are not explicitly included in the project estimate; however, a 30% contingency was added to the project that may cover all or a portion of these relocations. More detailed information should be provided during project development.

# SPRING CREEK — WALNUT CREEK DETENTION

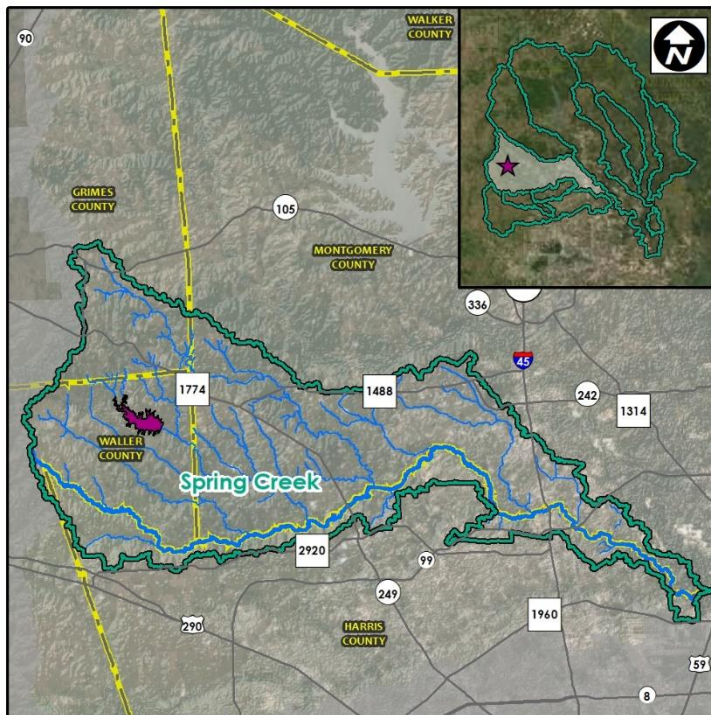
*(Recommend Project in SJMDP)*

**LOCATION:** Approximately 12 miles U/S of Spring Creek on Walnut Creek

**OBJECTIVE:** Reduce flooding along Spring Creek

**HOW IT WORKS:** Dry dam detention facility impounds stream flow during flood events

**IMMEDIATE DOWNSTREAM BENEFIT:** Incremental Atlas 14 WSEL reduction – 1% ACE to 2% ACE



## IMPROVEMENT SPECIFICATIONS

- Dry dam detention facility
- 1,218 acres (1% ACE)
- 1,279 acres (PMF)
- 12,159 acre-feet (1% ACE)
- Embankment: 670k cubic yards
- Max dam height: 46 ft
- 1.2 miles in length

## ESTIMATED BENEFITS

- Structures removed from 1% ACE floodplain: 1,205
- Reduction in instances of flooding over 50-year period: 1,653
- Benefited areas:
  - Tomball, The Woodlands
- Reduces 1% ACE WSEL at least 0.5 feet for 41.2 miles along Spring Creek
- Improves ponding depths on 13 road/rail crossings
- Net Present Value Benefit: \$101.2M

## OPPORTUNITIES AND CHALLENGES

### POTENTIAL PARTNERS

Waller County, Montgomery County, SJRA, USACE, MUD 386, City of Tomball, The Woodlands Township, Woodlands Water Agency, TWDB, GLO, FEMA, HCFC, Harris County

### REQUIRED REAL ESTATE

- 37 parcels within PMF
- 30 parcels within 1% ACE WSEL

### DESKTOP ENVIRONMENTAL MITIGATION

- 6 acres of potential wetlands
- 840 linear feet of NHD streams

### RELOCATIONS/RECONSTRUCTION

- 1 oil & gas pipeline conflicts
- 1.3 miles of roads (PMF)
- 1.3 miles of roads (1% ACE)

## ESTIMATED COSTS

Design Cost.....	\$4M
Construction Cost.....	\$37M
Environmental Cost.....	\$8M
ROW Cost.....	\$49M-\$84M
<b>TOTAL COSTS.....</b>	<b>\$97M-\$132M</b>
20-Year Escalation Cost .....	\$147M-\$200M

**BENEFIT-COST RATIO: 0.77-1.04**

\*Costs for these items are not explicitly included in the project estimate; however, a 30% contingency was added to the project that may cover all or a portion of these relocations. More detailed information should be provided during project development.