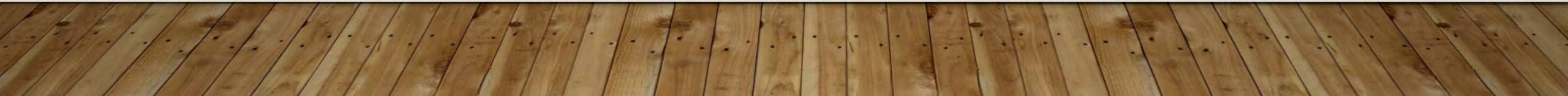


# FLOOD MITIGATION

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OCTOBER 2020 UPDATE



# WHAT CAUSED FLOODING

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Both local AND regional issues

- Too much water came downstream too fast
  - Atlas 14, SJRA Release, population growth upstream
  - Bad development practices, sand mining, impervious cover, lack of detention in MoCo
- Blockages in river backed water up into neighborhoods
- Gates on dam, spillway couldn't let water out fast enough
  - Lake Conroe gates have 15x more capacity than Lake Houston's
- Sedimentation reduced conveyance of ditches/streams

# FOUR-PART SOLUTION

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- Upstream detention
- Dredging
- Gates
- Ditch restoration

# UPSTREAM DETENTION

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SAN JACINTO RIVER  
BASIN MASTER DRAINAGE  
STUDY

DRAINAGE FROM  
535-SQ MILES IN 7  
COUNTIES CONVERGES  
ON HUMBLE/KINGWOOD  
AREA

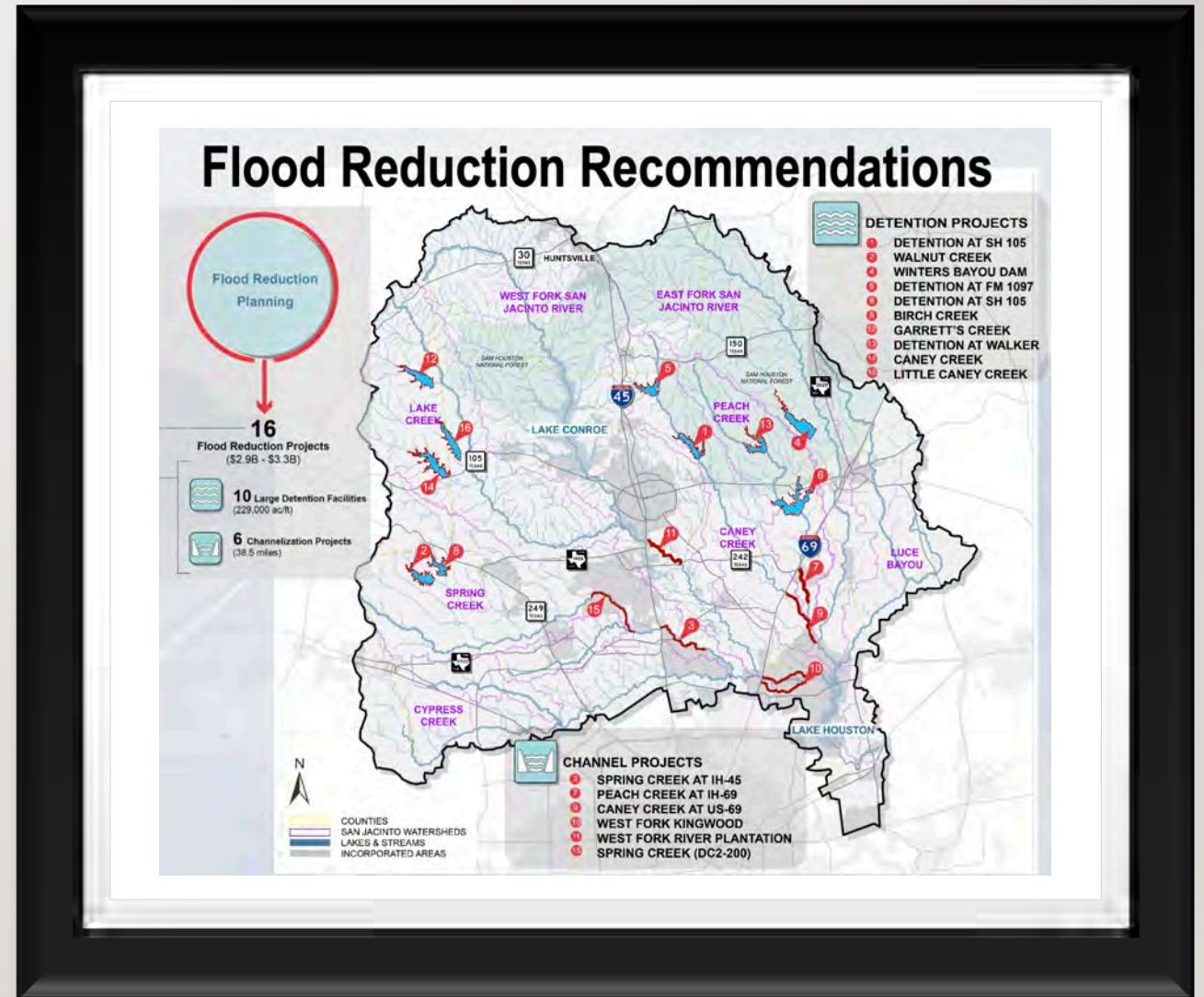




# UPSTREAM DETENTION

16 POTENTIAL PROJECTS  
IDENTIFIED AT COST  
OF \$2.9 TO \$3.3 BILLION

\$755 MILLION IN ESTIMATED  
DAMAGE REDUCTION OVER  
NEXT 50 YEARS



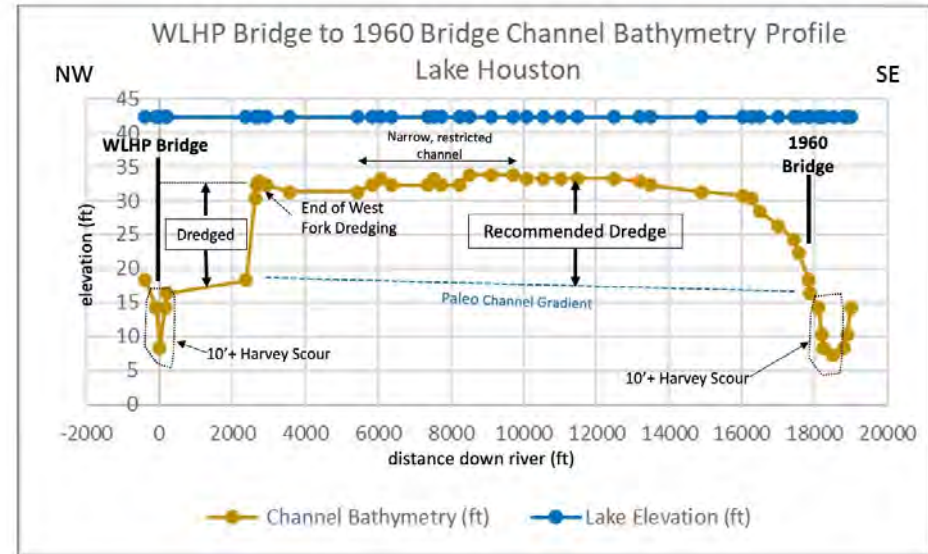
# DREDGING

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- Phase I – 1.8 million cubic yards from River Grove to Kings Harbor
- Phase II – 500,000 cubic yards south of mouth bar
- Phase III – 400,000 cubic yards in mouth bar
- Phase IV – 1 million cubic yards for Channel through underwater plateau
- Phase V – \$30 million from Huberty + \$10 million from Flood Bond

# DREDGING

18 FOOT UNDERWATER  
PLATEAU BETWEEN  
FOSTERS MILL AND FMI 960



Data Points from TRG/RDK Depth Soundings September 2020



# LAKE HOUSTON GATES

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- FEMA grant for up to \$50 million to increase output capacity
- Two phases
  - Preliminary engineering + environmental surveys/permits
  - Construction
- 5 options identified
- Benefit/Cost ratio will determine whether any constructed



# GATES – OPTIONS TO INCREASE OUTPUT

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1. Add *tainter* gates to spillway
2. Add *gated* spillway to east embankment
3. *Uncontrolled* spillway in east embankment
4. *Crest* gates in east embankment
5. *Crest* gates in existing spillway



# DITCH RESTORATION/EXPANSION

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- Kingwood Area Drainage Analysis now complete
- Ben's Branch down to 2-year level of service
  - Conveyance reduced dramatically in places
  - Five projects identified, three completed
  - Restoration from KW Drive to Rocky Woods next
- Diversion ditch expansion next year
- Open minor ditches to allow better flow under KW Drive
- Taylor Gully expansion/possible regional detention basin if Woodridge Village purchased

# GOAL: RESTORE 100-YEAR “LEVEL OF SERVICE”

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- Engineers measure capacity of ditches to handle flow in terms of “level of service”
- When your house was built, it had a “100-year” level of service
  - Would safely withstand a 100-year rain without flooding
- But things change
  - Sedimentation
  - Upstream development
- Through maintenance/capital improvement projects, must restore original level of service



MONITOR PROGRESS

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[ReduceFlooding.com](https://ReduceFlooding.com)

