

# City of Flagstaff

Rio de Flag Flood Control Project  
October 15, 2019 Council Update





# Agenda



- **Importance and History of the Rio de Flag Flood Control Project**
- **Completed Preliminary Elements**
- **Efforts to Address Community Concerns**
- **History/Background of Funding and Schedule**
- **Cost Estimate**
- **Project Schedule**
- **Current Topics**
  - US Army Corps, BNSF Railway (BNSF), Property/Environmental, Public Outreach
- **Summary**





# Project Importance



**Flood control for the Rio de Flag is one of the most important issues facing the Flagstaff Community.**

- A significant flood would result in damage to approximately **1,500 structures** valued at over **\$916M** and cause **\$93M** in economic damages for a **total impact of over \$1 Billion dollars**
- **Improvements will provide:**
  - Elimination of hazards of flooding for many Flagstaff residents
  - Opportunity for Downtown and Southside redevelopment
  - Elimination of flood insurance requirements and restrictive floodplain management regulations



# History and Background



- **Feasibility Study conducted in the late 1990s**
- **City entered into a Project Cooperation Agreement with the Army Corps in 2004**
  - City Responsibilities in Project Cooperation Agreement
    - Contribute up to **35%** of cost
    - Provide all Land, Easements, Rights-Of-Way, Relocations & Disposals, including BNSF land
    - Provide full environmental clearance



# History and Background



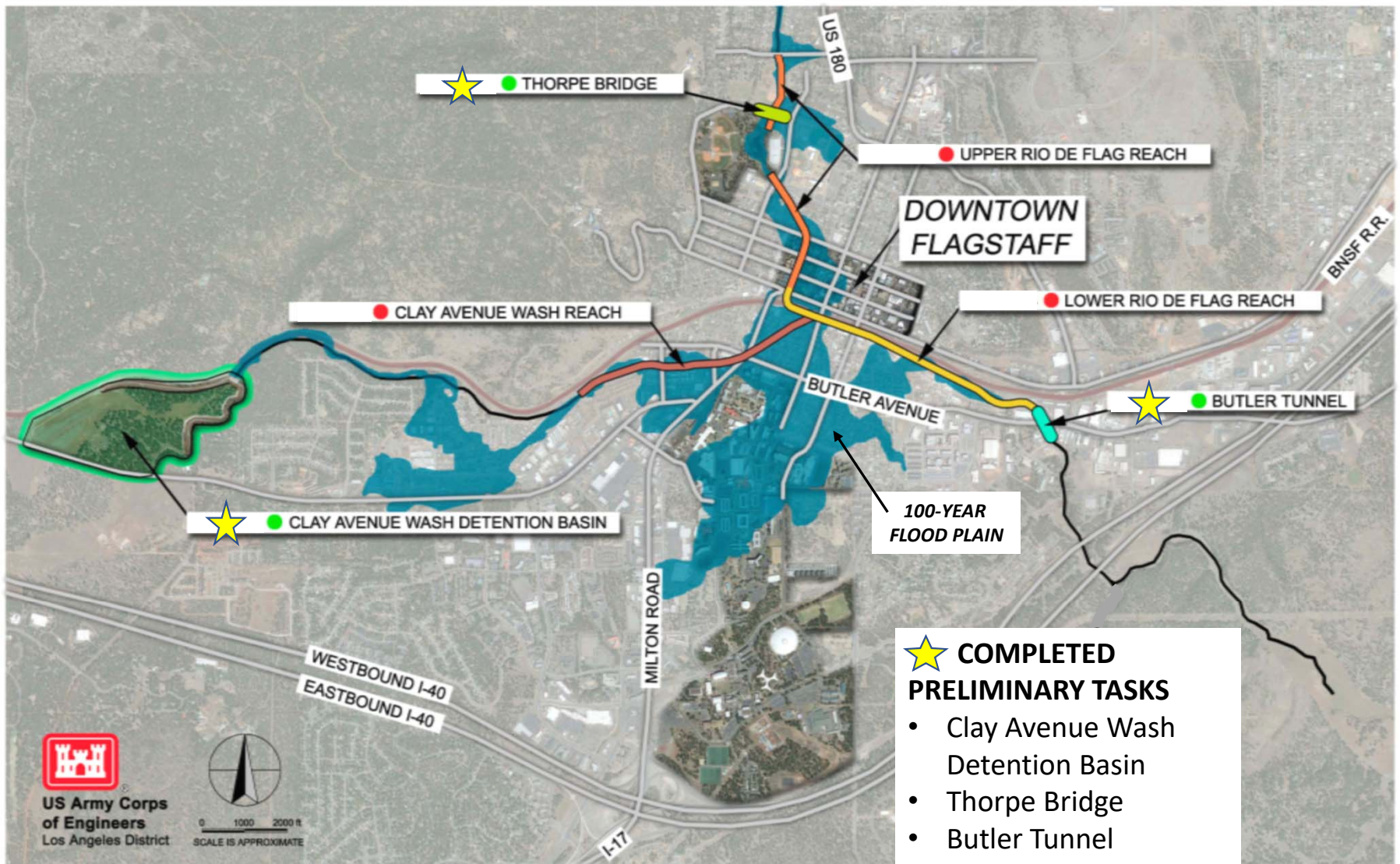
## Cost/Funding History

- Originally authorized in the Water Resources Development Act of **2000 for \$24M**
- Reauthorized in **2008 for \$54M**
- Now authorized for **\$102.9M** (Water Infrastructure Improvements Act for the Nation 2016)
- Stormwater fee was increased to fund City Stormwater projects, including the Rio de Flag. Fee was initiated in **July 2019**
- Current estimate is **\$121M**
- In 2018, Federal funding was received (**\$1.3M**) to complete 100% Design. The City provided a match in the amount of **\$700K** for the design completion.



# Break for Questions





**RIO DE FLAG MAINSTEM PROJECT MAP**



# Clay Wash Detention Basin





# Butler Tunnel





# Thorpe Bridge





# Completed Preliminary Project Elements



- Clay Avenue Wash Detention Basin - **2009 (\$6.4 M)**
- Butler Tunnel - **2010 (\$3.6M)**
- Thorpe Bridge - **2012 (\$2.7M)**
- Dredged Frances Short Pond
- Army Corps Cost-to-Date: **\$28M**
- City of Flagstaff Cost-to-Date: **\$17M**
- Conducted multiple rounds of Value Engineering
- Property acquisition, environmental clearances and public engagement continue
- Project design is nearing completion with eight (8) consultants working to meet **May 2020 deadline**



# Break for Questions





# Thorpe Park Ball Fields





# ADDRESSING COMMUNITY CONCERNS

## *Detention and Floodwalls*



### **Thorpe Park Detention Alternative - 2000 Feasibility Study**

- Negative input from community - Breach risk and impacts to Thorpe Park
- Included tall floodwalls and extensive levees adjacent to private parcels
- Restricted recreational use for Thorpe Park
- Channel culvert size reduced downstream
- Did *NOT* include keeping RDF flows in existing Southside alignment
  - Southside alignment along railroad tracks - preferred alternative (>25 years)
  - Utilizes historic channel (pre-development of Flagstaff)
  - Natural topography and lack of development support this concept



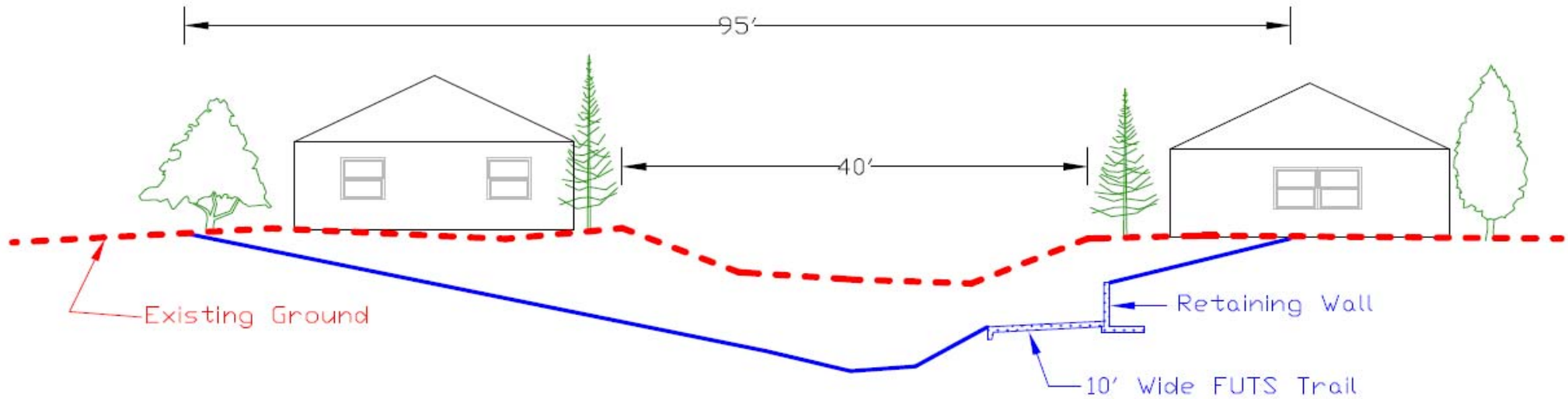
# Break for Questions





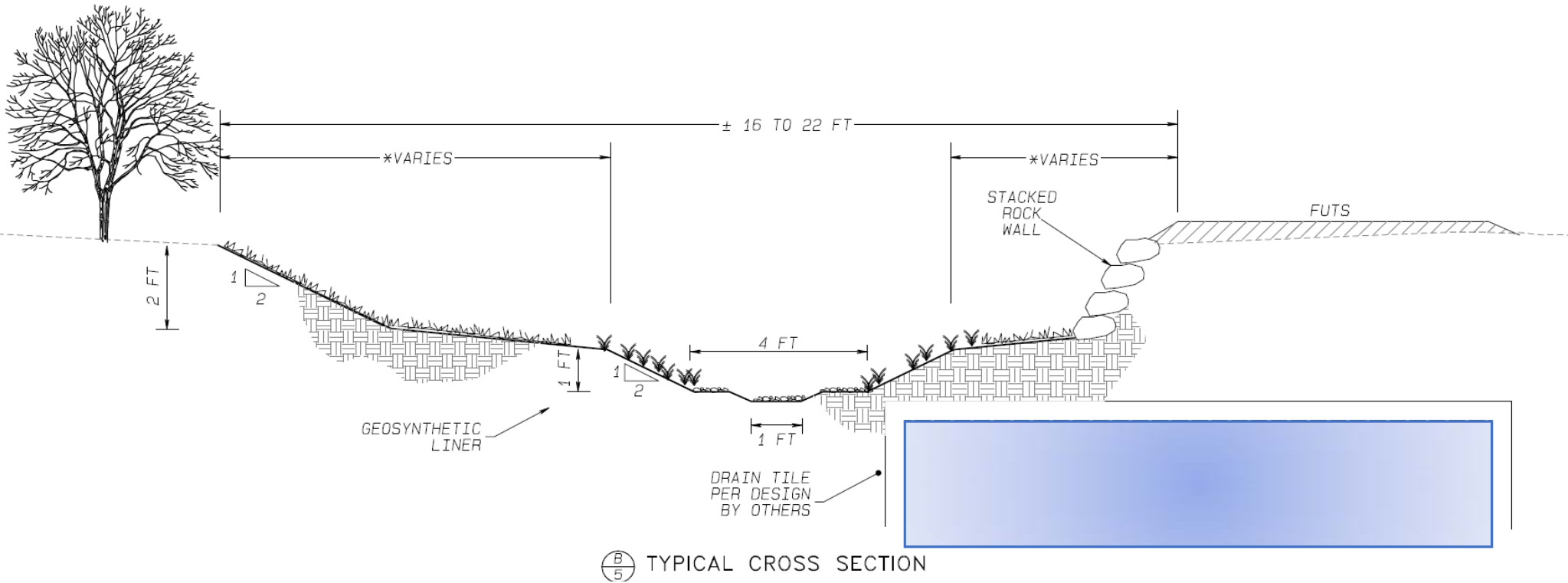


# Open Channel





# Composite Channel – Upper Reach





# Break for Questions

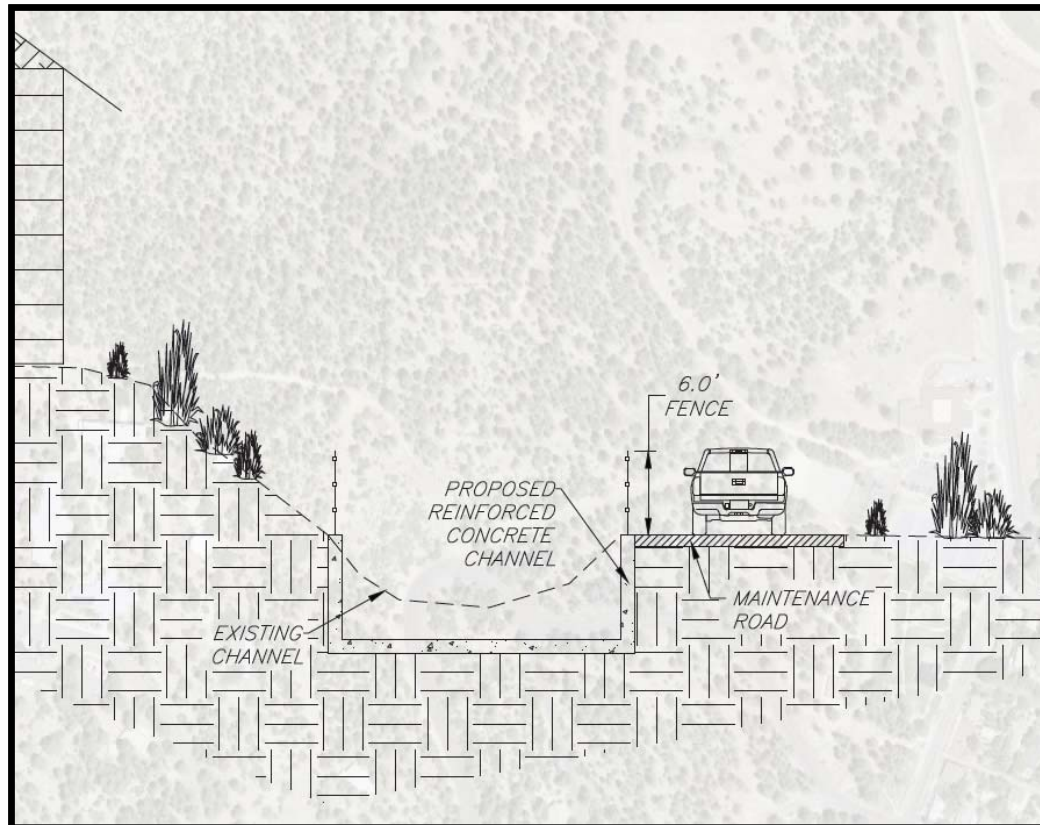




# Clay Avenue Reach Cross Sections



## West Section - Open Channel Millpond Apartments to Blackbird Roost

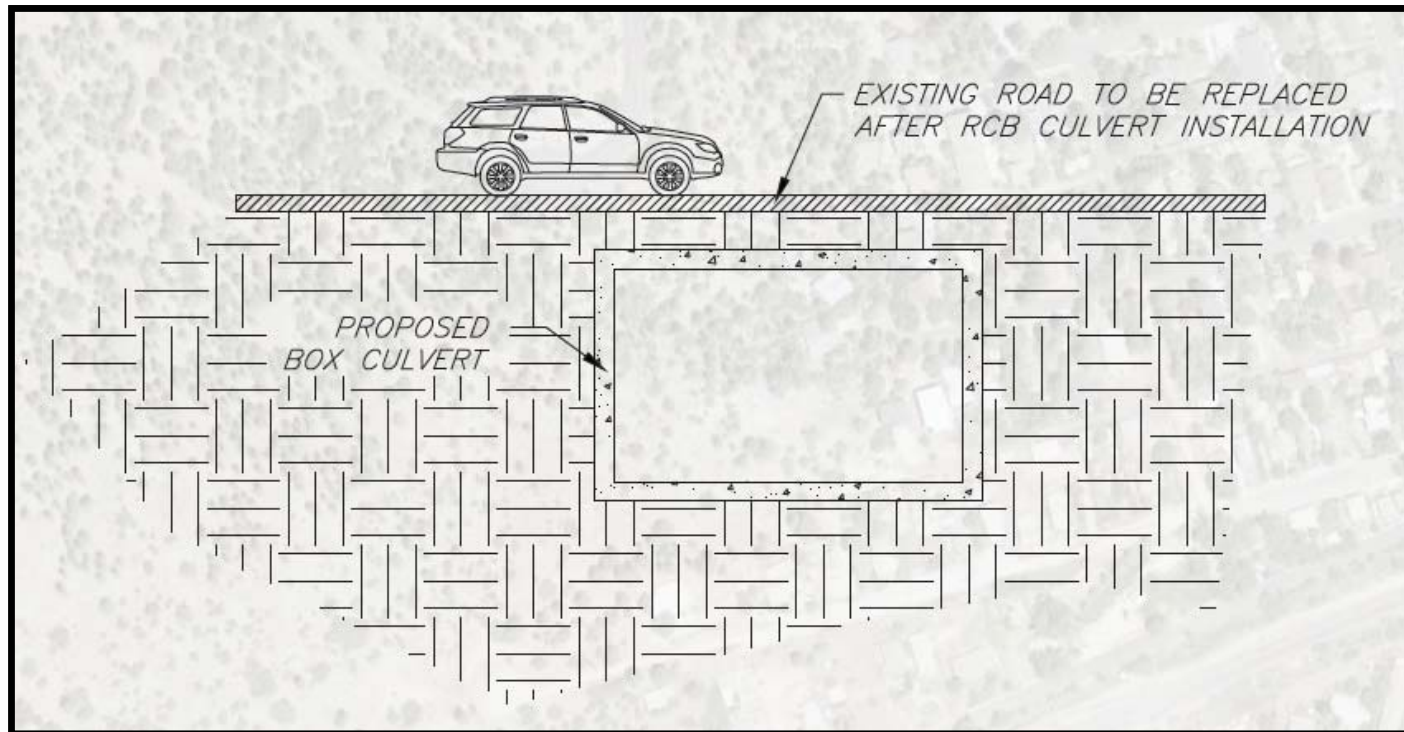




# Clay Avenue Reach Cross Sections

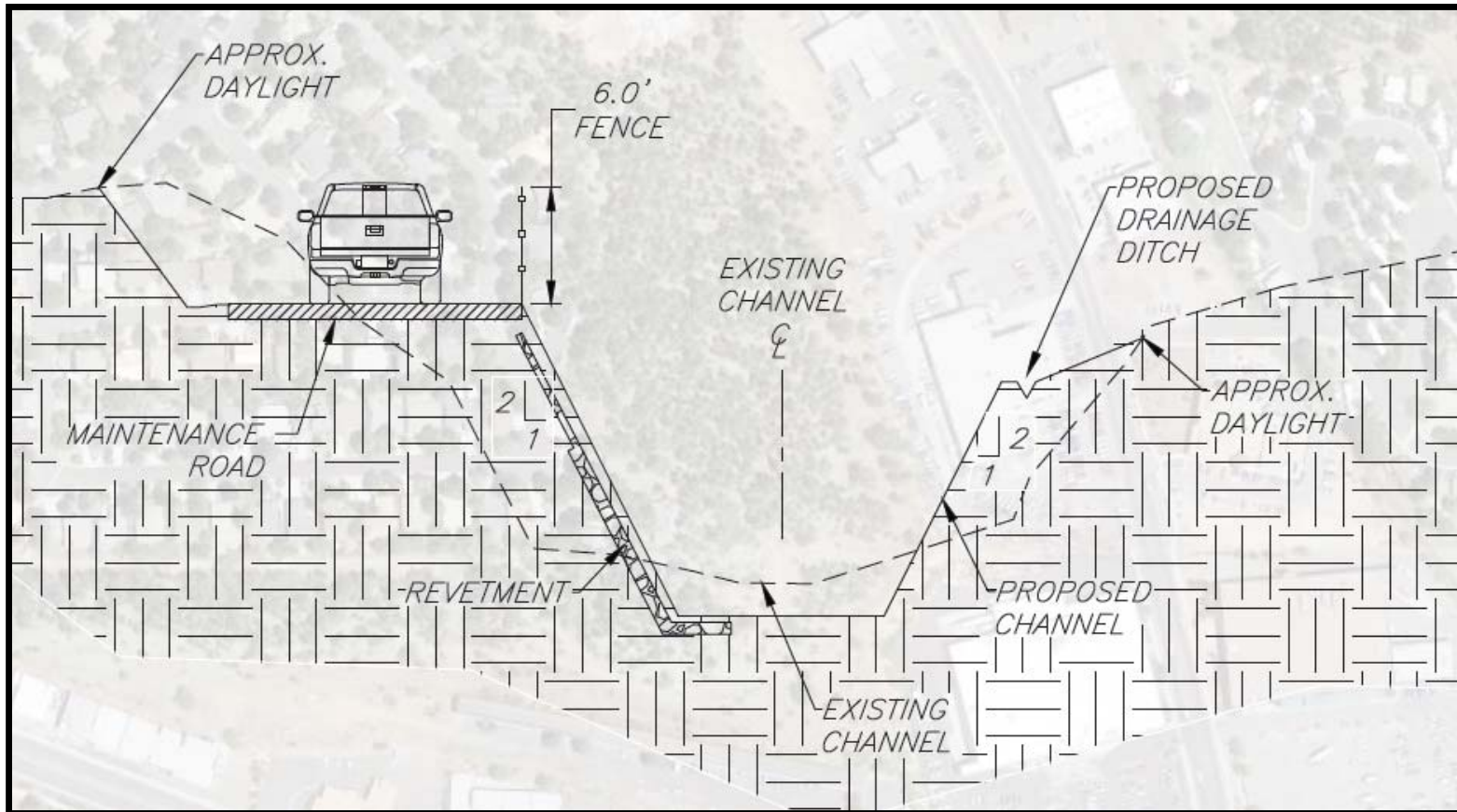


## East Section - Closed Channel Blackbird Roost to Phoenix Avenue



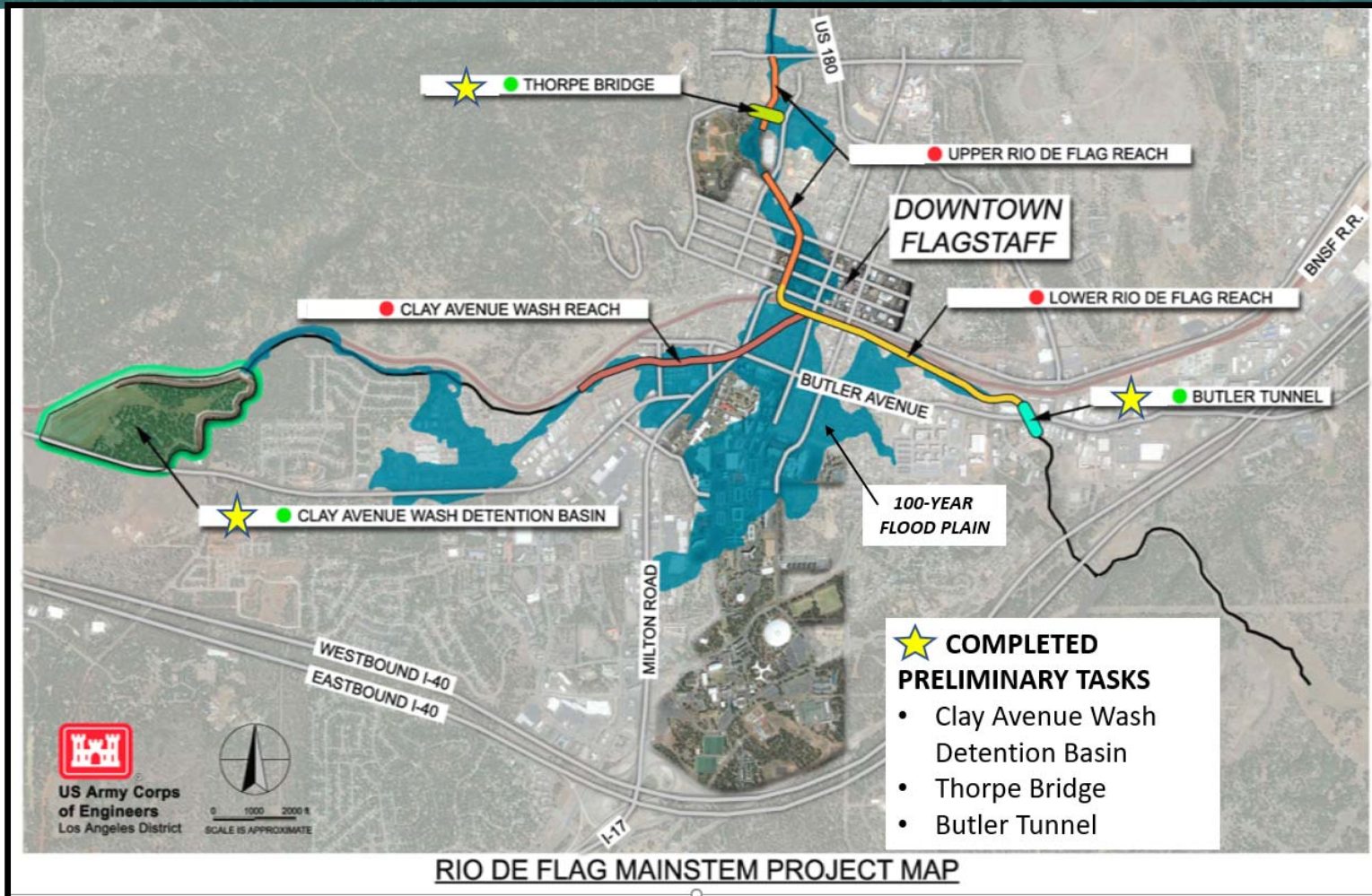


# Lower Reach Cross Section





# Break for Questions





# ADDRESSING COMMUNITY CONCERNS

## *FEMA Design Concept Report*



**In 2014, the City conducted a study to evaluate the cost and feasibility of reducing the project capacity to FEMA 100-year flood standards. Findings included:**

- Size of drainage structures were reduced
- Did not remove requirements for underground box structure in upper reach
- Requires City to break Cooperation Agreement with Army Corps
- Requires City to provide **100% of project funding (\$63M)**; no funding source
- Council decided to “Stay the Course” with the Army Corps and the current design



# Break for Questions





# Project Cost



- Previous Total Project Cost **\$106M**
- Rio de Flag Total Project Cost is **\$121M**
  - Inflation Cost
  - Increases in Construction Cost
- City of Flagstaff share - **\$42M**
- Army Corps share - **\$79M**





# Project Schedule



## Design

- Draft 100% plans City's second review - **Oct 2019**
- Army Corps Agency Technical Review - **Dec 2019**
- Safety Assurance Review - **Feb 2020**
- Approved Design, Bid-Ready - **May 2020**

## Construction (Army Corps Preliminary Schedule)

- Lower Reach - **2 years**
- Clay Avenue Reach - **2 years**
- Upper Reach - **2 years**



# Break for Questions





# CURRENT TOPICS



## US Army Corps

- District funding request in **Oct 2019 - \$62M**
  - Tentative confirmation of funding in **Spring 2020**
- Responsible for Tetra Tech's contract
- Revise Environmental Impact Statement
- Certify Project Limits





# CURRENT TOPICS



## BNSF Railway

- Review and approve draft 100% plans
- Grant site access for environmental testing and cleanup
- Construction and Maintenance agreement
- Track Window





# CURRENT TOPICS



## City of Flagstaff

- Environmental remediation on all residential and commercial properties
- Property Acquisition
- Utility Relocations
- Lateral Storm Drain Infrastructure
- Betterments, i.e. landscaping beyond base project amenities





# CURRENT TOPICS



## Public Outreach

- Two meetings - **Summer 2019**
  - Property owners and public at large
- Public Outreach going forward
  - Three meetings
  - Three council updates
- City Website
  - Draft Composite Channel

<https://www.flagstaff.az.gov/4189/Rio-De-Flag-Flood-Control>





# SUMMARY



- Project team is aggressively pursuing completion of the final design and pre-construction requirements (e.g. environmental clearances and property agreements)
- Goal for completion and approval is **May 2020**
- Army Corps LA District has requested **\$62M** to contract remaining portions of project
- City staff continues to coordinate with the community on project elements (e.g. composite channel to provide surface flow, desired landscaping)
- Proceeding with Army Corps will result in a 100-year flood protection at a cost of approximately **\$42M** to Flagstaff residents



# Closing



**DISCUSSION**