A G E N D A
COMMISSION ON STORM WATER ISSUES MEETING

August 3, 2021 at 6:30 p.m.
Heman Park Community Center
975 Pennsylvania Ave., University City, Missouri 63130

1. **MEETING CALLED TO ORDER**

2. **ROLL CALL**

3. **APPROVAL OF AGENDA**

4. **APPROVAL OF MINUTES**

5. **CITIZEN PARTICIPATION**

6. **NEW BUSINESS**

7. **OLD BUSINESS**
   a. Floodproofing Survey – Update and Discussion (Commissioner Stein) – See Attachment #1
   b. Relief Map Project – Update (Commissioner Holly) – See Attachment #2
   c. Critique of US Army Corps proposal – Discussion (Commissioner Criss)
   d. US Army Corps of Engineers Upper River Des Peres Flood Risk Management Study – Update to Commission as follow-up to the USACE 07/26/2021 Public Meeting Review of the General Reevaluation Report (GRE) – See Attachment #3
   e. Flooding Early Warning System – Update

8. **SUBCOMMITTEE REPORTS**
   a. Flood Early Warning System
   b. Communications

9. **MISCELLANEOUS BUSINESS**
   a. Sherwood Lake Update (received from Army Corps) – See Attachment #4

10. **COUNCIL LIAISON COMMENTS**

11. **ADJOURNMENT**

Please call (314) 505-8572 or email salpaslan@ucitymo.org to confirm your attendance.

ATTACHMENT #1

Sinan Alpaslan

From: Eric Stein <emstein1114@yahoo.com>
Sent: Tuesday, July 27, 2021 11:25 PM
To: Todd Thompson; Bob Criss; Eric Karch; Garry Aronberg; Mark Holly
Cc: Sinan Alpaslan; Tim Cusick; John F Mulligan
Subject: Flood proofing survey
Attachments: Floodproofing Survey Draft 4.docx

Commissioners,

Based on what I have read and heard from the USACE presentations, I intend to propose the following motion at the next commission meeting. After checking with Todd regarding protocol, I am sending it in advance because it is long enough and specific enough that commission members may benefit from a written version instead a verbal motion made at the meeting.

The motive behind this motion is that the scoring that led to the selection of alternative 6 as the TSP is heavily dependent on the actual participation rate from homeowners. The TSP is based on the unrealistic assumption of 100% participation in floodproofing measures that would significantly alter the livability and value of the homes involved, making it reasonable to assume that a number of homeowners will not participate. It is pointless to forge ahead with selecting or endorsing a plan without first gathering more realistic data on participation, which in turn will affect the scoring of alternatives and perhaps the viability of the proposed TSP. Time is of the essence, since the USACE will be zeroing in on their final selection in August and September and has expressed interest in the survey results. I have attached a copy (Draft 4) of the proposed survey.

Eric S

Proposed motion:

The commission recommends the following:

- That the city provide the USACE, before mid-October at the latest, an estimate of participation in the proposed TSP from the approximately 500 property owners that are identified in the USACE's report as being at 25-year flood risk.

- That this estimate be based on a survey targeted specifically to that group and distributed by 1st class mail.

- That the survey instrument used be the one titled *University City Floodproofing and Elevation Survey, Draft 4 (Final) July 26, 2021* which incorporates recommendations by the USACE (attached).

- That the city ask the USACE to recalculate the applicable BCR (Table 12 in the report) and Fulfillment of Objectives scores (Table 13) based on the estimated participation rate, and evaluate the effect on their TSP recommendation.

- That these actions be complete before the selection of a final plan.

University City Floodproofing and Elevation Survey
Draft 4 (Final) July 26, 2021

University City is partnering with the U.S. Army Corps of Engineers (USACE) on a study that is examining ways to reduce the risk of flood damage to homes and businesses due to flooding from the River Des Peres in University City. The University City Commission on Storm Water Issues, appointed by the City Council to advise the city on such issues, would like your opinion on some of the measures being looked at in the study. You are receiving this survey because the USACE has identified your address as being at risk for future floods. Even if you have never experienced flooding in the past, your response to this survey is important.

The USACE is looking at various floodproofing measures that might be offered at no cost to homeowners who have experienced flooding from the river, or who are in danger of experiencing such flooding. Measures that could be taken for homes at risk of main floor flooding are currently being studied. For those at risk of only basement flooding from the river, one measure that could be taken is "wet floodproofing" . One version of this method is to allow water to enter the basement but to elevate the utilities such as furnace and water heater to a level above the anticipated flood level, as well as removing everything vulnerable to flooding from the basement. Another version of this method is to eliminate the basement entirely by filling it in, leaving a crawl space under the house that would be allowed to flood during high water. The utilities would be moved up to the main floor, either to an existing space or possibly some kind of add-on space. While this may seem extreme, it could save some homeowners a significant amount of money. NFIP flood insurance premiums are determined by how high (the "elevation") your main floor is compared to the height of a 100-year flood. The basement is counted as a floor, so eliminating the basement has the effect on insurance premiums of elevating the structure by 8 feet or so. In some cases (if your main floor is not a flood risk), this could reduce your premiums to a fraction of their current level. The other advantage is that you do not have to worry about your basement and all its contents being damaged by a flood. The obvious disadvantage is losing the space afforded by a basement, while also losing space upstairs to accommodate the utilities (unless space is added for that). Also, there would likely be no direct compensation to make up for the probable loss of value of your home by loss of the basement.

To be clear, the measures being examined for this study would only address flooding that occurs when the river comes out of its banks and reaches your home (so called "overland" flooding). The study does not address flooding due to a basement drain backing up due to overload of a combined sewer line at your location, which falls under the jurisdiction of the Metropolitan Sewer District (MSD).

Your participation in this survey will help us greatly by advising the city and the USACE on the level of interest in these types of floodproofing and elevation measures:

A. How likely would you be to participate in a (voluntary) program to “wet floodproof” your basement at no cost to you if it reduced your flood insurance premiums significantly?
    1. No way
    2. Maybe (please elaborate in the comment space below)
    3. Very likely
B. How likely would you be to participate in a (voluntary) program to “wet floodproof” your basement at no cost to you if it did not reduce your flood insurance premium?
    1. No way
    2. Maybe (please elaborate in the comment space below)
    3. Very likely
C. Another kind of floodproofing called “dry floodproofing” involves keeping the basement but taking steps to keep water from getting in, such as installing glass block windows or barriers around the windows. Also included might be either a barrier around any walkout stairway or possibly filling it in. Authorities generally disfavor this method because water standing around a foundation exerts a significant pressure on it, which depending on its condition, could seriously damage the foundation. It is not clear that this will be an option in the program, but if it is and a qualified professional determines that it is OK for your home, how likely would you be to participate in this (voluntary) kind of “dry floodproofing” program?
    1. No way
    2. Maybe (please elaborate in the comment space below)
    3. Highly likely
D. In some cases, elevating the entire home to above the level of the flood is a better option than floodproofing for reducing flood risk. Elevating a home consists of raising the entire structure and eliminating indoor space below the level of the flood. Elevation would eliminate flood insurance premiums entirely. How likely would you be to participate in a (voluntary) program to elevate your home at no cost to you?
    1. No way
    2. Maybe (please elaborate in the comment space below)
    3. Highly likely
E. In the time you have lived at your current address, how often have you experienced overland flooding from the River Des Peres or its tributaries?
    1. Never
    2. Once
    3. More than once

Comments:

ATTACHMENT #2

University City Commission on Storm Water

Relief Map Project

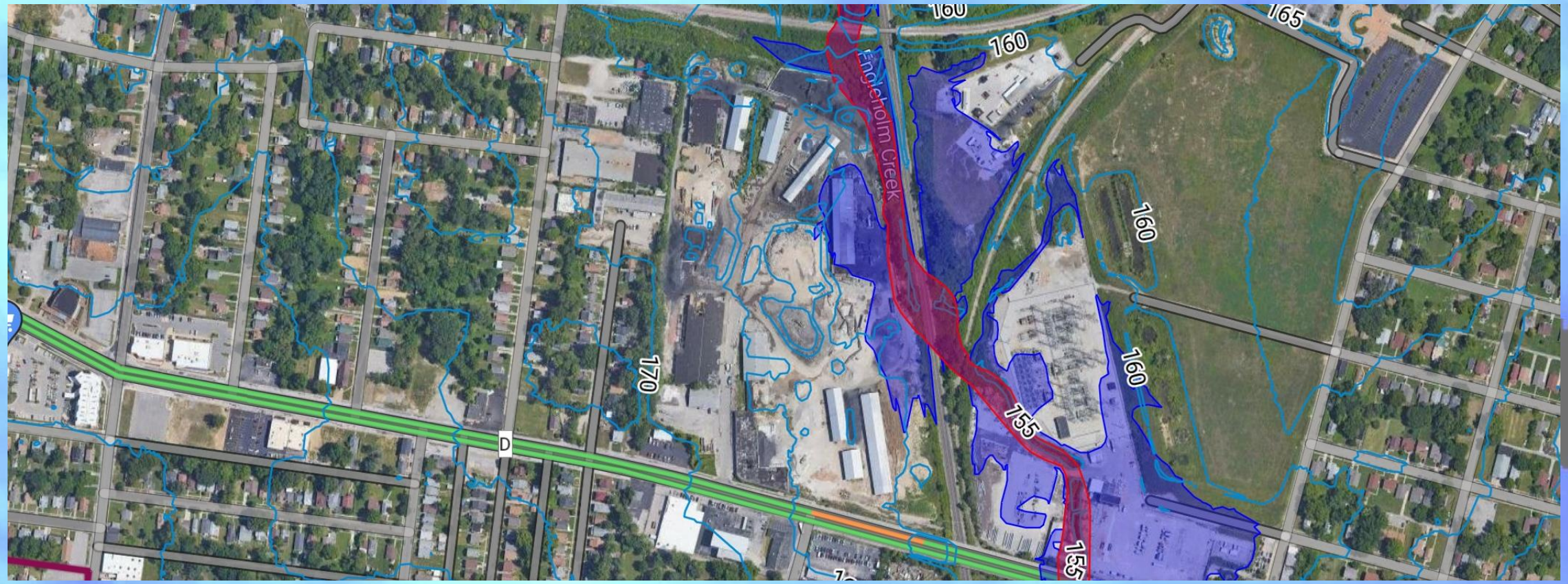
Progress Since Last Commission Meeting

- Commission Endorsed proceeding on map on June 1, 2021
- 3-D Printing is proceeding swiftly . . . Printer has expanded since original estimates
- Sinan, artists & I inspected first sections to be printed
- Artists have submitted "Statement of Work" and estimate to Sinan
- Other QGIS explorations
- A commercially available easel has been acquired to map
- An elevation profile of the Sherwood Lake Dam was created

Printing Progress

- Weighed & measured dimensions of printed blocks
  - Estimated total weight of assembled panel excluding seal and paint ~ 53.4 lbs
- Four sections printed, one had a major error and was being reprinted. Each block was taking about 1 workday. Two printers dedicated to our job
- Investigated the bumps in the upper east section

Investigation of Bumps in the Upper East Section



Recycle Facility Has Large Piles of Reclaim on Property Near Engleholm Creek

Lake Sherwood Dam Profile

Commercial Easel Acquisition

Large Sale at Art Mart

- I purchased to take advantage of limited time frame. Prepared to donate of ineligible for compensation
  - $150 50% Off
  - Adjustable features
  - Folds-up with carrying handle

Work Ahead

- Commission Endorsed proceeding on map on June 1, 2021
- Continue working with artists to finalize work statement and determine compete materials list based upon easel selection to get artist PO underway
- Continue with QGIS exploration of features to support commission and city

ATTACHMENT #3

RIVER DES PERES, UNIVERSITY CITY, MO

General Reevaluation Report

Public Meeting

& Start of Public Comment Period

26 July 2021, 6-8pm

US Army Corps of Engineers®

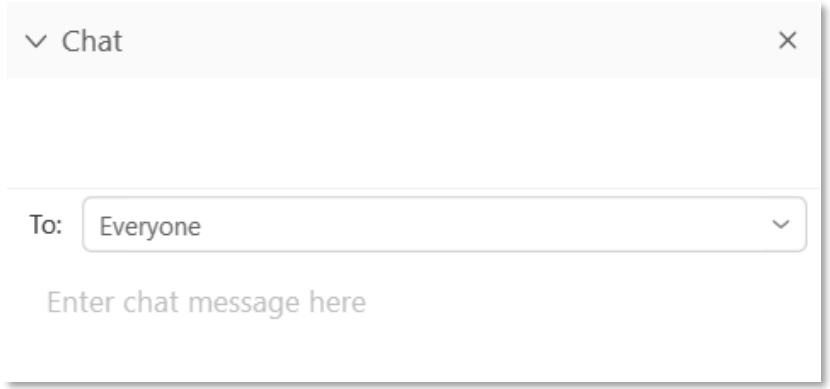
Project website

Photo: University City, 2019. Inset: KSDK, 2019

AGENDA

1. Opening remarks
2. Presentation: Study Process & Tentatively Selected Plan
3. How to provide comments
4. Q&A

At any time during the meeting, you may submit a question or comment in the Chat box.



Type your comment here

You may also email ucityfloodrisk@usace.army.mil during or after the meeting, or visit the project website.

Opening remarks

Sponsor: City of University City, Missouri

with support from the

Commission on Storm Water Issues

LOCAL SPONSOR:

City of University City, Missouri

AGENCY COORDINATION

Metropolitan St. Louis Sewer District

FEMA

SEMA

Great Rivers Greenway

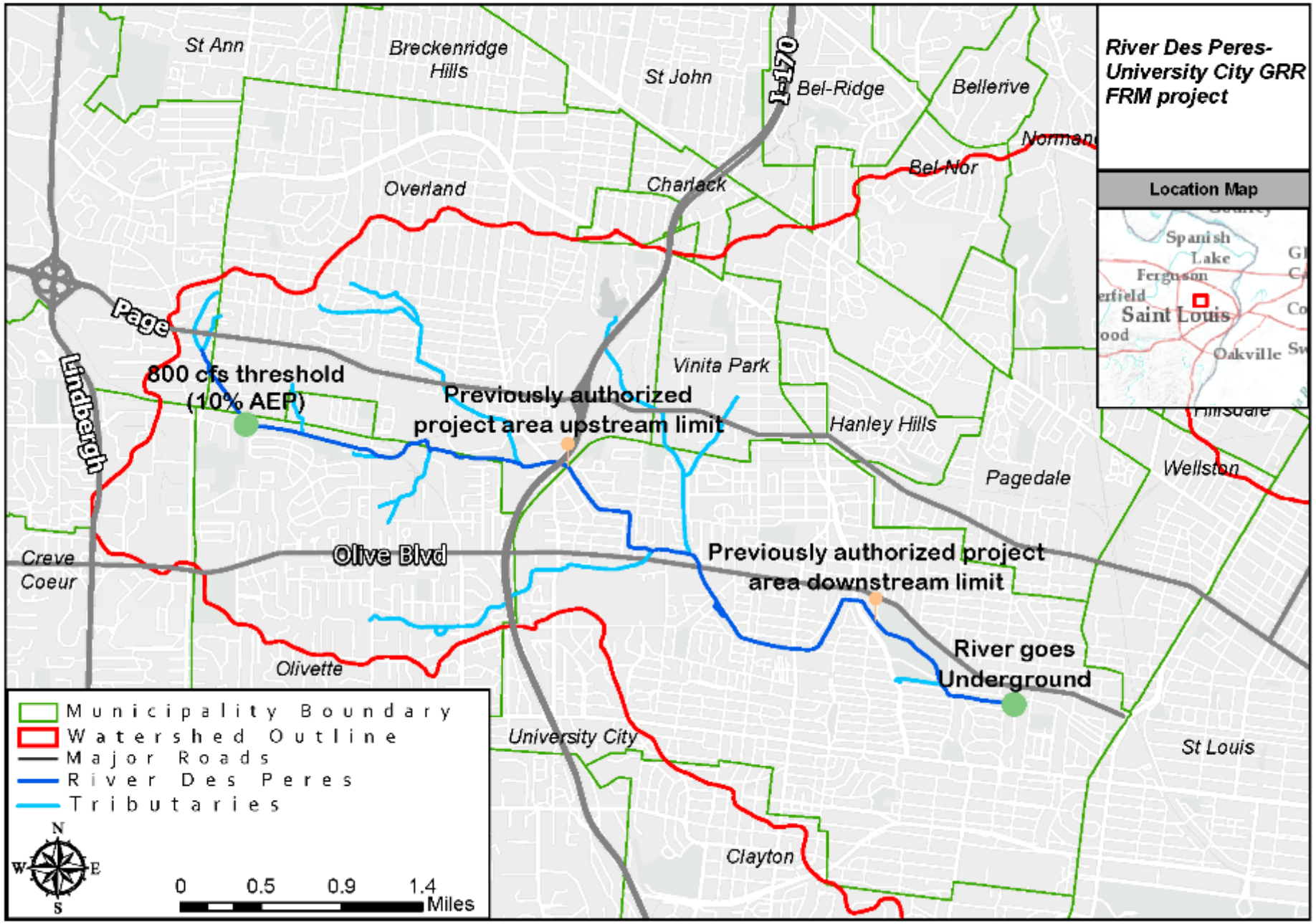
MISSOURI DEPARTMENT OF NATURAL RESOURCES

River Des Peres Watershed Coalition

STUDY OVERVIEW

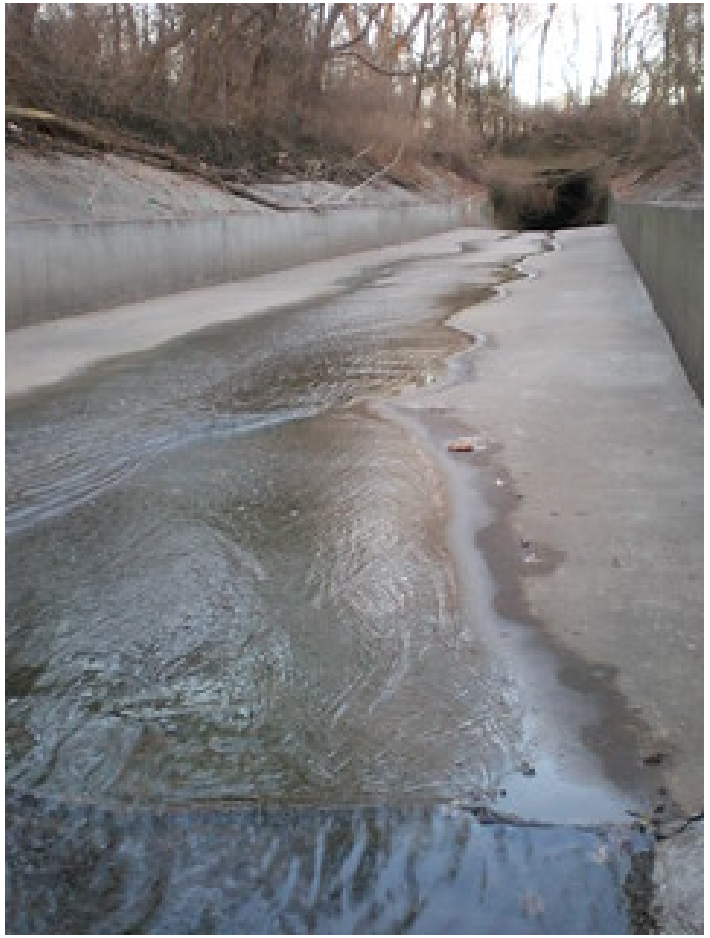
- Purpose: Reevaluate the flooding problems and potential plans to reduce flood risk and confirm the authorized project or identify a revised recommendation.
- Schedule: Started April 2020; 3 years to completion
- Study Authority Limits
  - Limited to University City Branch watershed of upper River Des Peres
  - Flood Risk Management is the only authorized purpose
- Period of Analysis
  - 50 years (roughly 2025 to 2075)

River Des Peres-University City Study Area



IMAGES FROM THE GROUND

River Des Peres at the entrance to the Tubes (downstream end of study area)



Images (above and left): Paul Sableman (Flickr)

Flooding

2008 flooding. Image: YouTube

2014 flooding. Image: University City

Image (right): St Louis Post Dispatch

PROBLEMS

- Risks to life safety associated with riverine flood inundation.
  - This includes direct life loss, flooding of critical infrastructure, flooding of evacuation routes, health concerns with flooded structures (mold, etc.)
- Economic damage resulting from riverine flood inundation.
  - This primarily focuses on direct structure inundation (structure, content and vehicles) but can also consider traffic disruption, emergency costs, etc.

OPPORTUNITIES

- Increased outdoor recreation;
- Improved risk communication;
- Reduced sewer backups;
- Improved water quality, including reduced sedimentation/turbidity;
- Re-established natural wildlife habitat such as wetlands;
- Increased community resiliency to flood events, such as reduced response/recovery time; and
- Improved mental & physical health.

Recent flooding in the study area:

2008

2011

2013

2014

2019

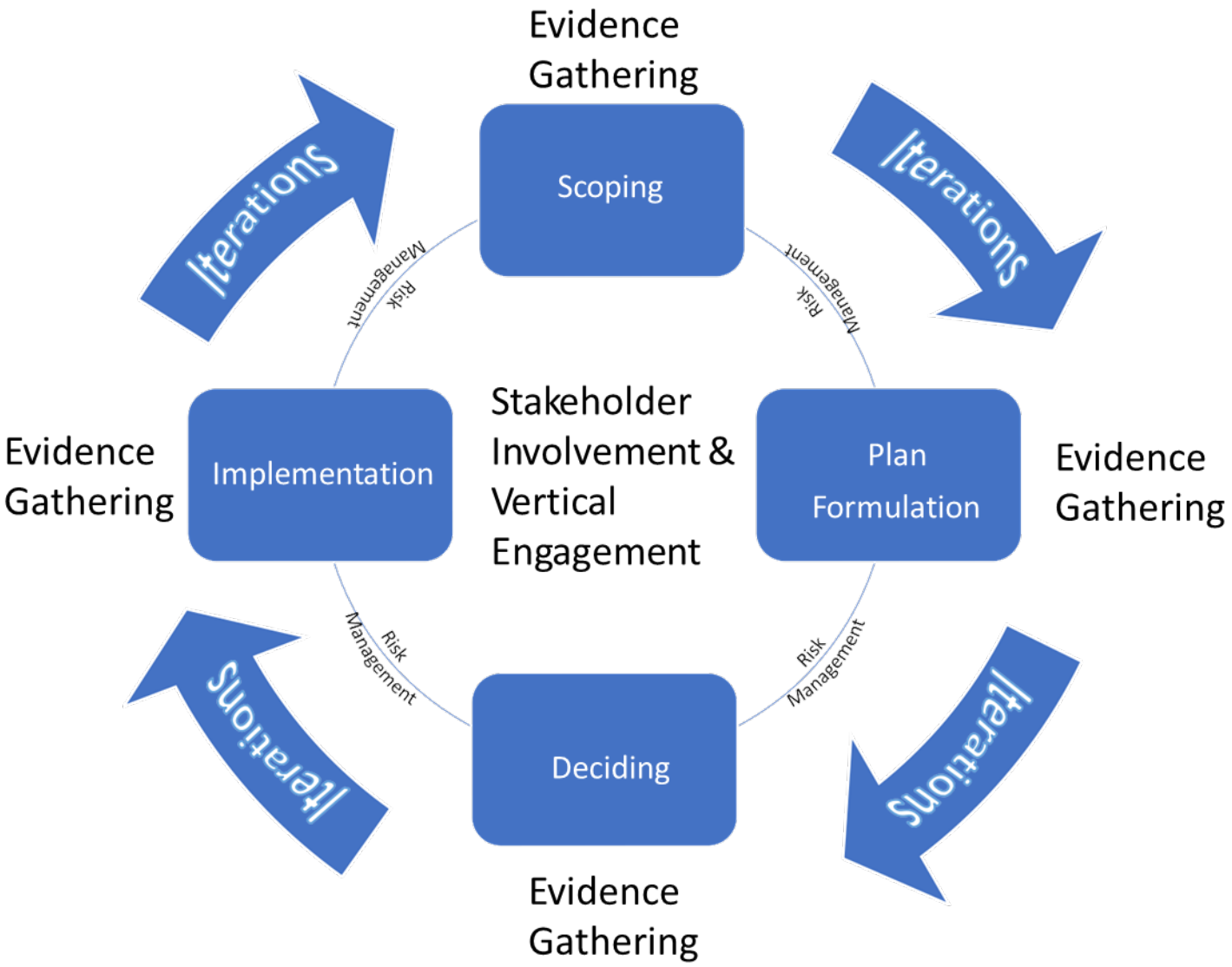
2020

STUDY OBJECTIVES

- Reduce life safety risk due to flooding, including inundation of structures & public infrastructure, in the Upper River Des Peres watershed over the period of analysis.
- Reduce economic damage due to flooding in Upper River Des Peres over the period of analysis.
- Increase recreational opportunities associated with FRM features over the period of analysis.

OUR PROCESS

- Start with what's been previously studied
- Stakeholder involvement - throughout
- Gather evidence - throughout
- Analyses:
  - H&H analysis
  - Structure inventory
  - Life safety
  - Economic analysis
  - Impacts to cultural resources
- Create several alternatives
- Select Plan



STUDY SCHEDULE

Start date (funding received)	29 April 2020
Alternatives Milestone Meeting (AMM)	25 August 2020
Public Scoping Meeting	30 September 2020
Tentatively Selected Plan (TSP) Meeting	26 May 2021
Draft Report Released to the Public	July 2021
Public Meeting	July 2021
Agency Decision Milestone (ADM)	November 2021
Final Report Submitted for Approval	September 2022
Report Approval (Chief's Report)	April 2023

Push to Feb 2022 if LPP requested

THE IMPORTANCE OF PUBLIC INPUT

- As part of the planning process, we need your input on:
  - Significant issues/impacts to be addressed
  - Potential project features/alternatives

- People living in the affected communities have the best first-hand knowledge of flooding and flood impacts
- We don’t know what we don’t know!

Flooding in University City, 2014

EXISTING CONDITIONS

Study area: 5,900-acre watershed above the entrance to the Tubes

Hydrologic & Hydraulic Modeling: Model generated inundation for flood events of various sizes (2008 flood used as calibration event; high water marks provided by Commission)

Structures: 1,098 structures are impacted by 500-year flood

Minority population of University City: 52% (state average is 20%)

Critical infrastructure: Four critical infrastructure locations in the 500-year floodplain (3 schools & a fire department/EMS)

Cultural & historic resources: Two areas – University Heights Subdivision Number 1, and University City Education District

Flood damage: Estimated at $5.8M annual damages (1% probability flood)

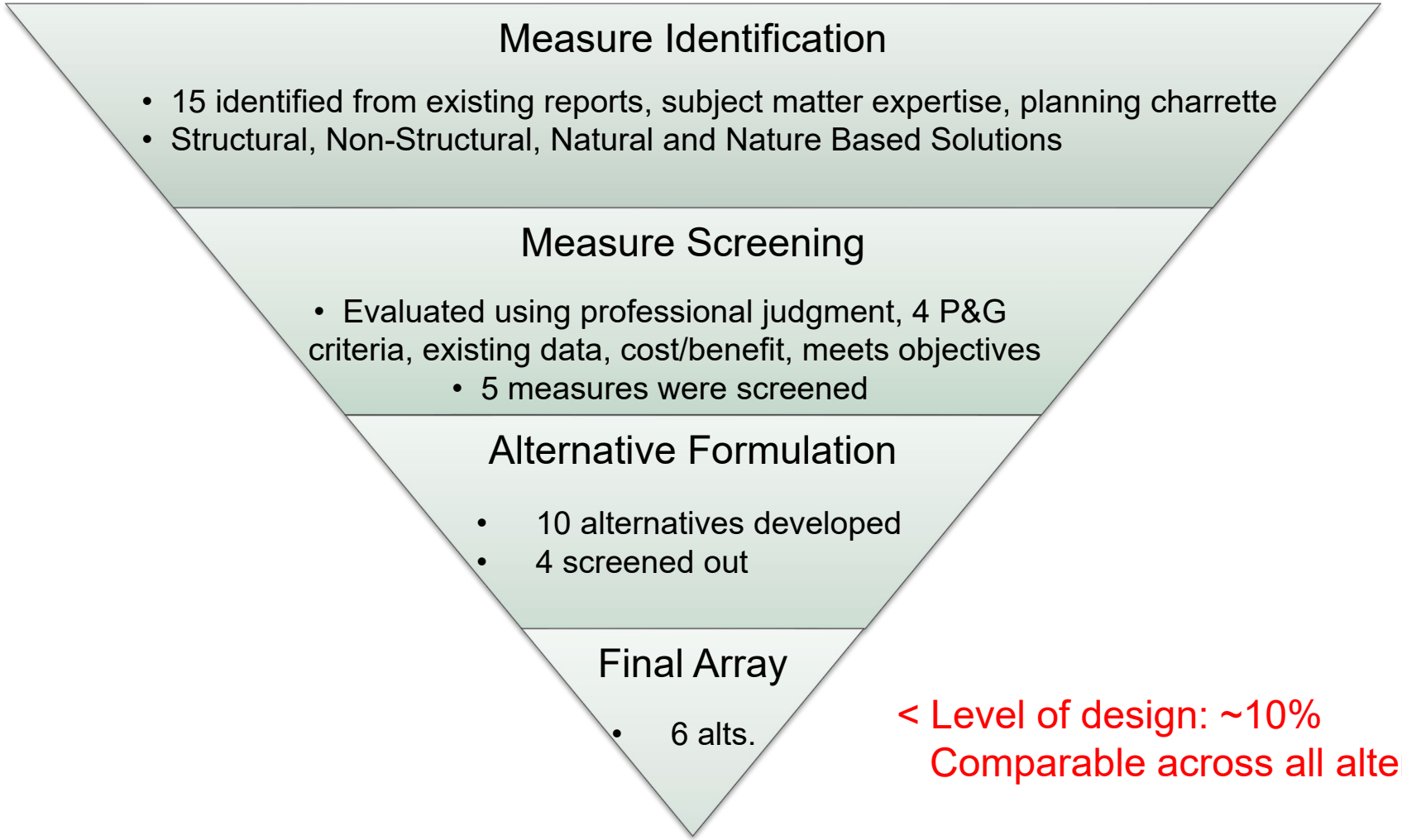
Other conditions examined include climate, land use, water quality, demographics

FUTURE WITHOUT PROJECT CONDITIONS

- What will the conditions be in the future (50 years) if no project is implemented?
- Conditions not shown are either no change or low concern

Existing Condition*	Future Without Project Condition
Climate (temperature and precipitation)	Upward trends in temperature, precipitation, and runoff
Future development and sewer infrastructure	Sewer authority (MSD) identified 55 proposed projects in study area
Water quality, incl. current *E. coli* concerns	Improvement in water quality due to MSD sewer improvements
Cultural resources – two areas of concern	Potential minor adverse effects to areas of concern; potential new areas of concern added within 50-yr period of analysis
Flood damage to structures	No substantial change expected
Population and socio-economics, incl. minority & low-income populations	Projected downward population trend; in 20% AEP, dilapidated structures, vacant lots, minor adverse socioeconomic impacts
Population at Risk (3,000 at 2 a.m.) & critical infrastructure (4)	PAR and existing critical infrastructure would continue to be threatened

PLAN FORMULATION PROCESS (up to this point)



< Level of design: ~10%
Comparable across all alternatives

Tentatively Selected Plan (TSP)

MEASURES EXPLORED

Structural

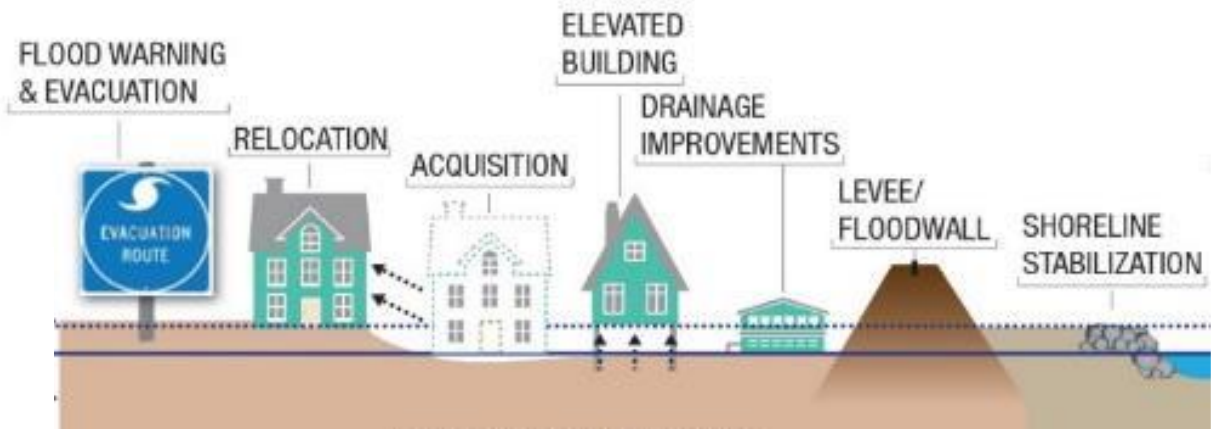
- Detention basins
- Levee/floodwall
- Channel & bridge modifications
- Modifying the Tubes
- Diversion

Non-Structural

- Floodproofing (wet & dry)
- Elevation of structures
- Relocation of structures
- Acquisition (buyouts)
- Flood warning system
- Risk communication/education
- Ordinances/regulations
- Other: Outdoor recreation

Nature-Based

- Floodplain storage
- Removal of invasive species
- Constructed wetlands



MEASURES DEVELOPED INTO ALTERNATIVES

Measures:

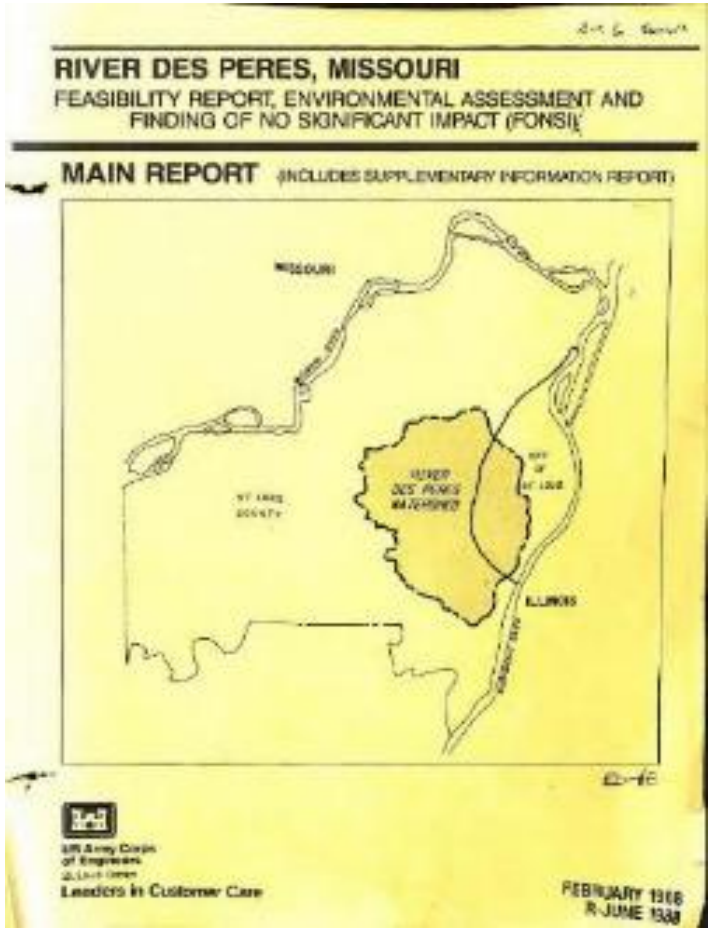
1. Detention basins
2. Levees/floodwalls
3. Channel and bridge modification
4. Elevation of structures
5. Floodproofing
6. Acquisition (buyouts)
7. Flood warning system
8. Risk communication/education
9. Other: Outdoor recreation

STRUCTURAL

NONSTRUCTURAL

RE-EVALUATING RECOMMENDATIONS IN THE 1988 FEASIBILITY REPORT

- 1988 Feasibility Report for River Des Peres watershed
- WRDA 1990 authorized project
- University City recommended features:
  - Approx. 2.5 miles of channel modification, including bridge replacement, bank stabilization and grade control – x Confirmed measure U-12 causes downstream impacts
  - Flood forecasting and warning plan – ✓ Rainfall gages in upper watershed; new technology can improve plan
  - Recreation features – ✓ 1.85 miles of trail alongside channel modification, incl. one small park with amenities
  - Environmental features (not much detail for U City branch) – x Environmental features were compatible with channel modifications; do not mitigate downstream impacts; not complete as standalone measures



CHANNEL MODIFICATION (STRUCTURAL)

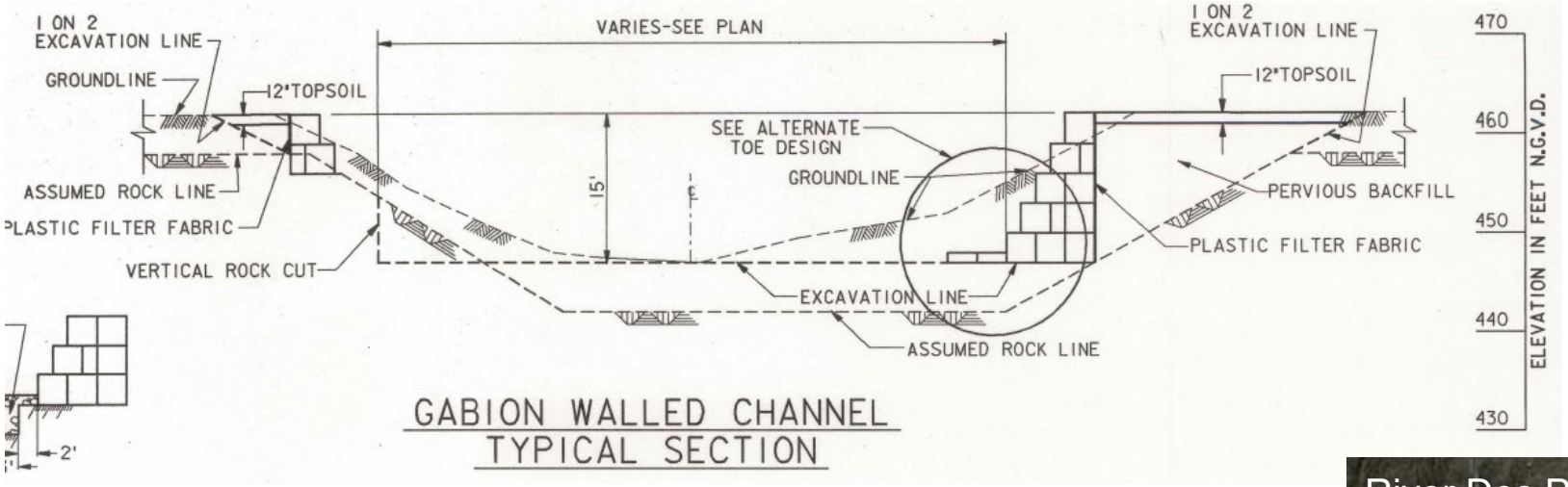


Image: 1988 Feasibility Study (USACE)

Photo: St Louis Post Dispatch

DETENTION BASINS (STRUCTURAL)

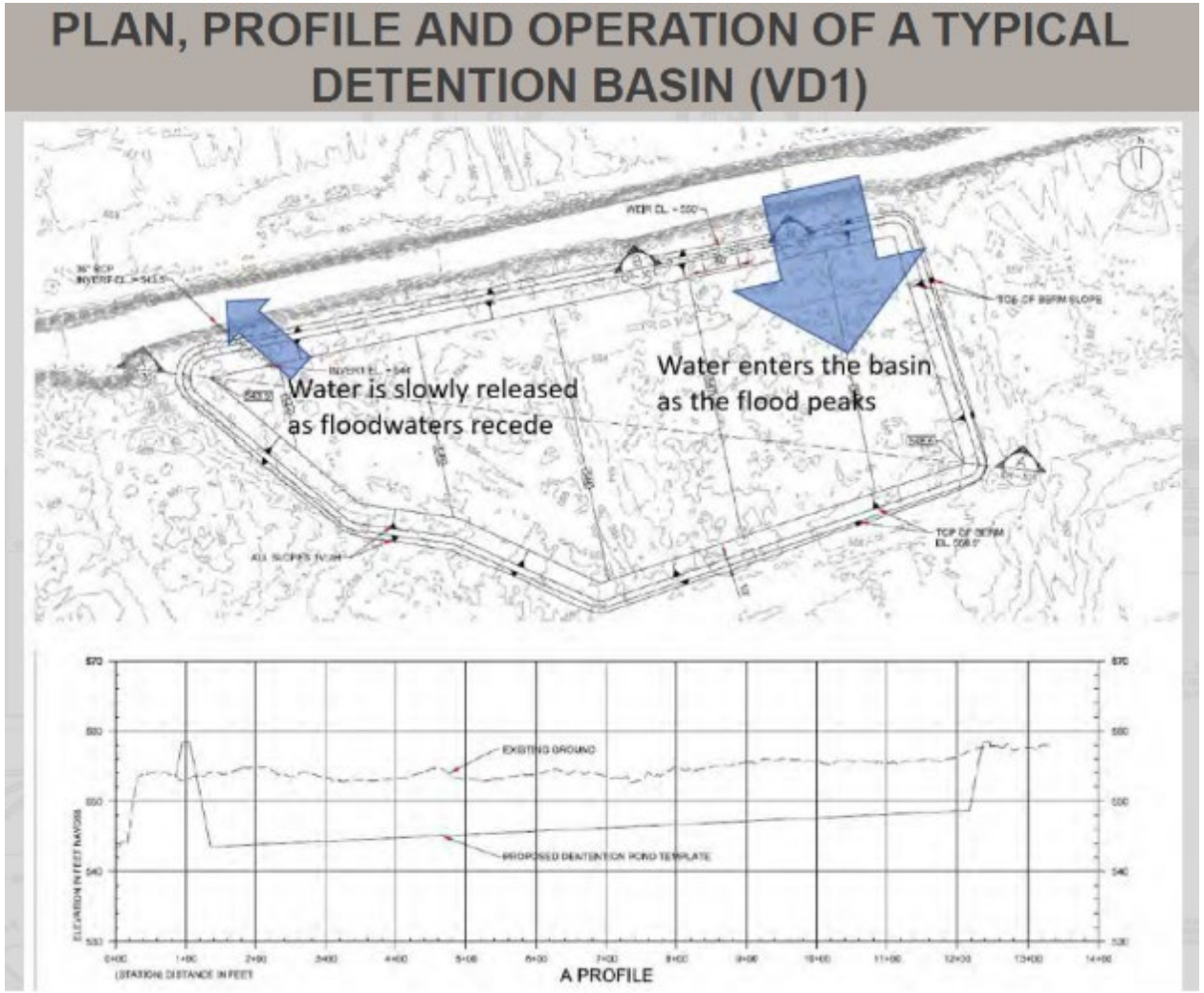


Image: USACE

Image: USACE

LEVEES/FLOODWALLS (STRUCTURAL)

Photo: USACE

Photo: USACE

FLOODPROOFING (NON-STRUCTURAL)

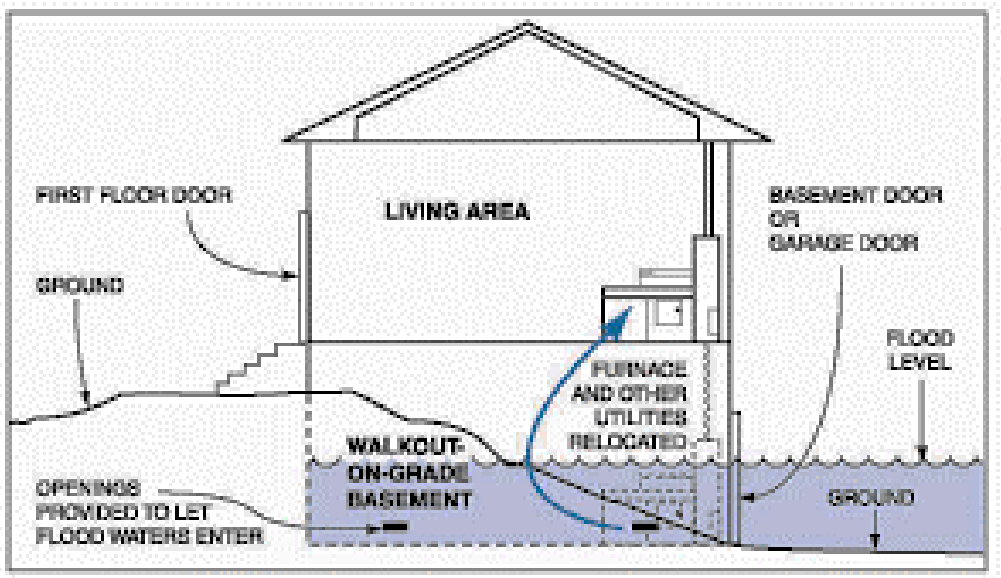
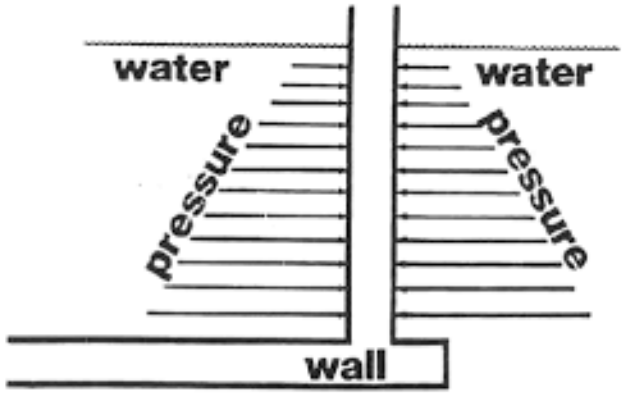


Image: FEMA



WET FLOODPROOFING

- intentionally flooded
- non-damageable activities

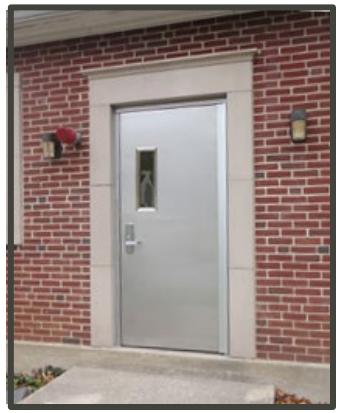
Image: FEMA

Image: USACE

FLOOD BARRIERS – CLOSURE DEVICES

Dry Flood Proofing





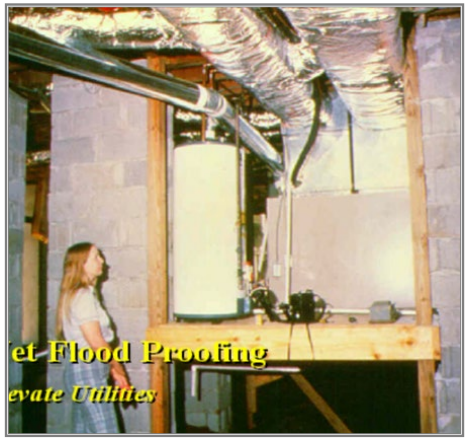


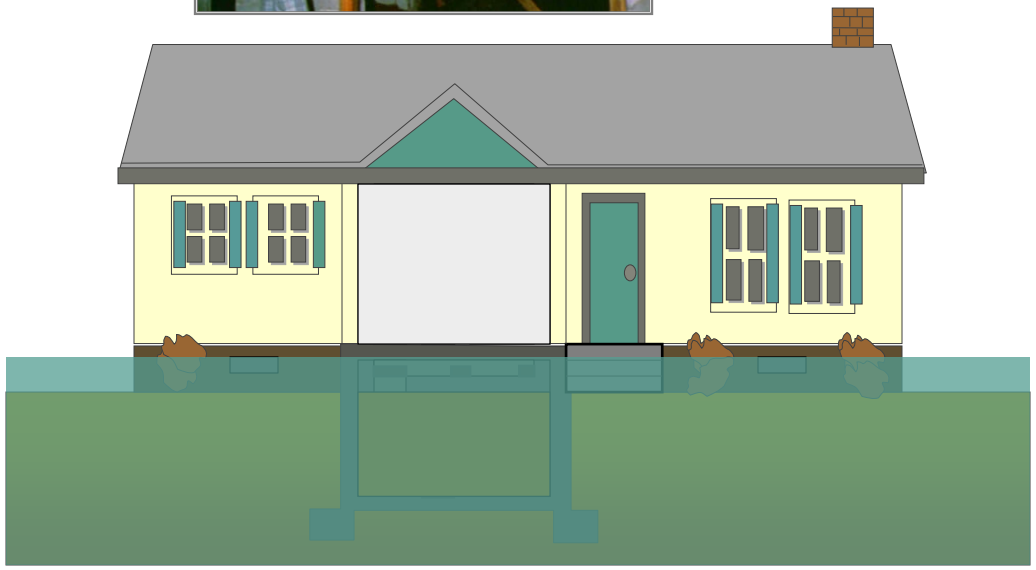
FLOOD RISK ADAPTIVE MEASURES

Elevation & Wet Flood Proofing (Historic Structure)

FLOOD RISK ADAPTIVE MEASURES

Elevated Equipment / Utilities / Appliances

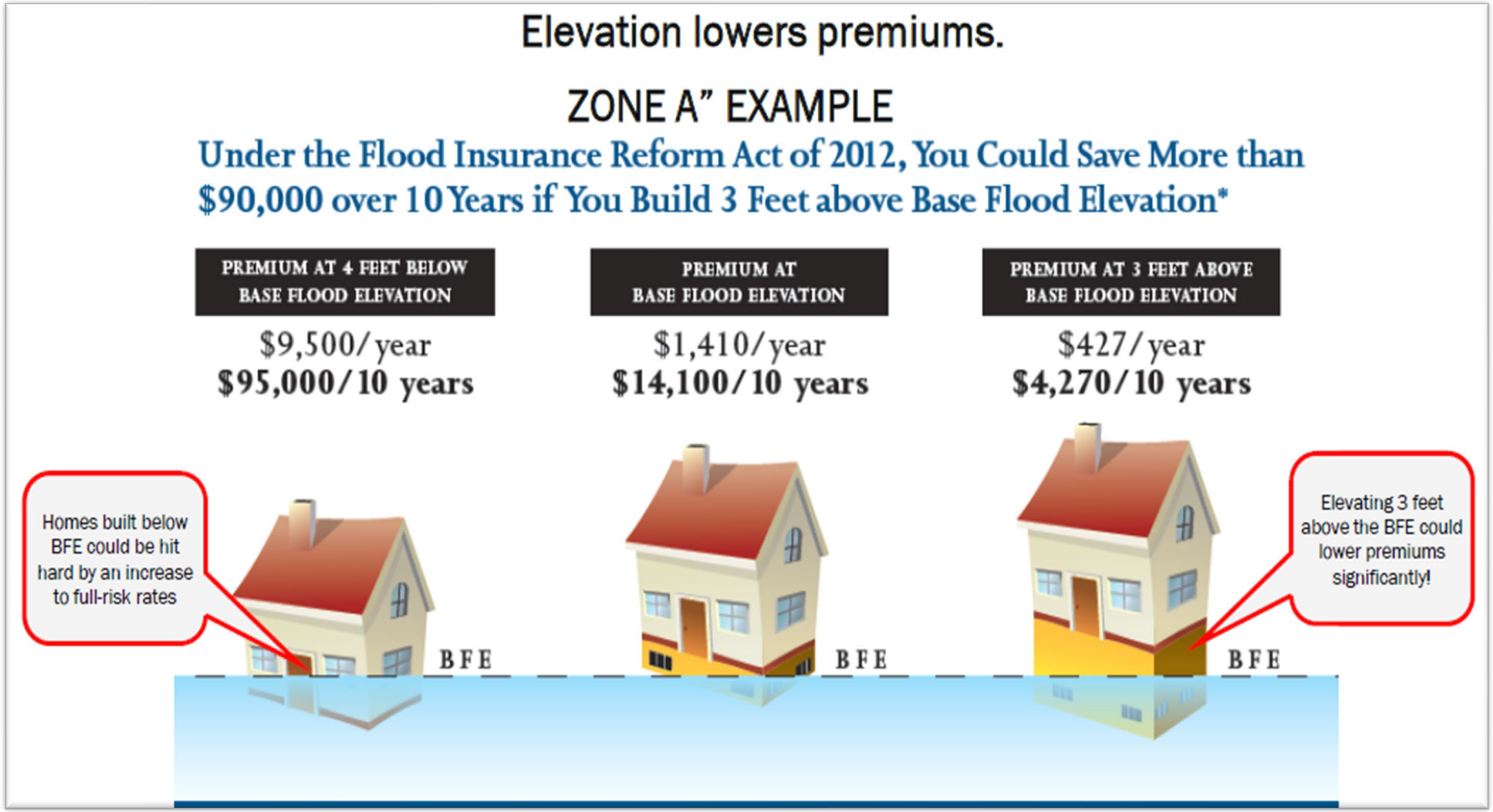




ELEVATION (NON-STRUCTURAL)

Images: USACE

Flood Risk and Flood Insurance



ACQUISITION/BUYOUTS (NON-STRUCTURAL)

Images: USACE

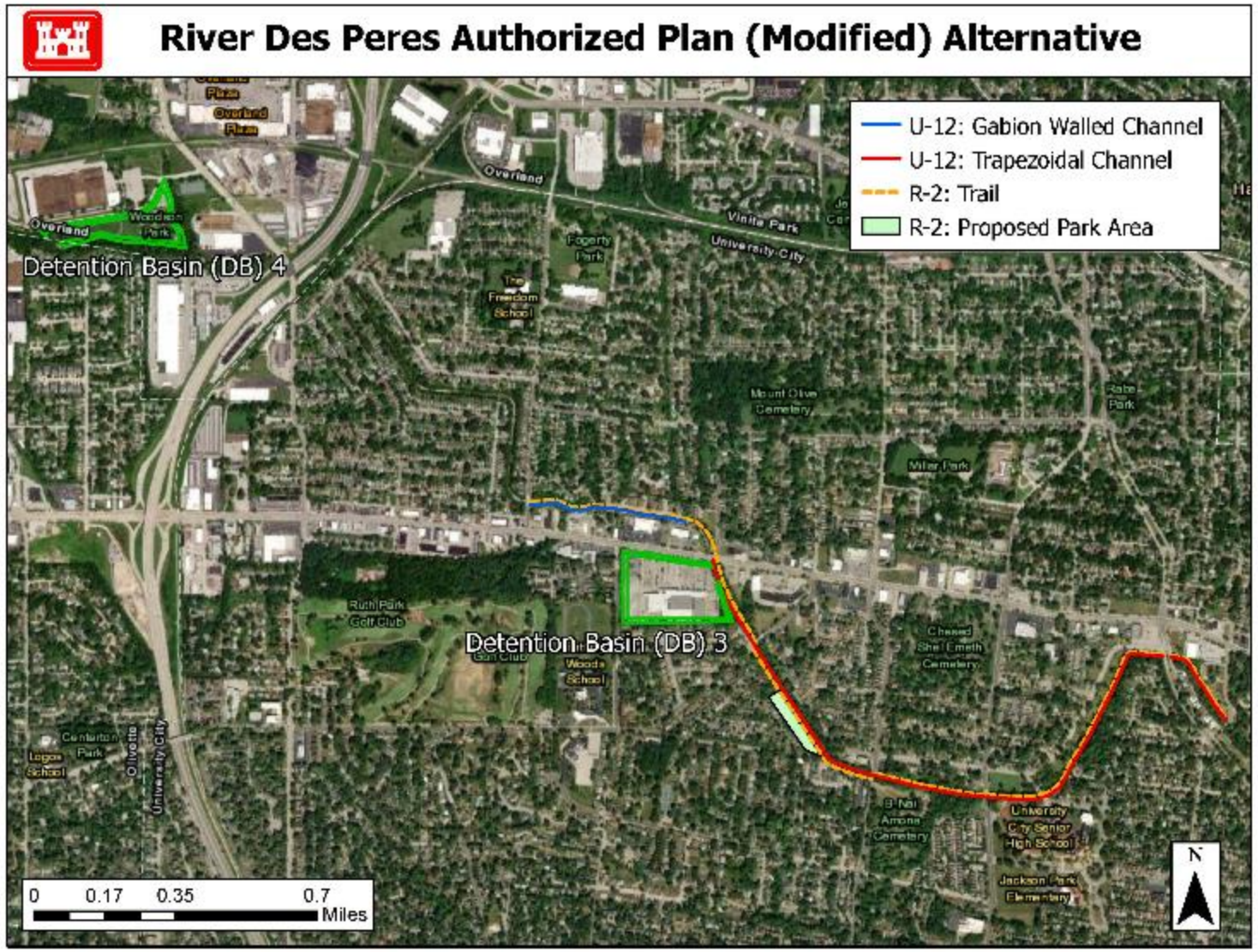
FLOOD WARNING SYSTEM (NON-STRUCTURAL)

- Commission developing municipal system for University City
- Data available:
  - >20 years of 5-minute-interval data from USGS stream gage at Purdue Ave
  - >10 years of mostly 5-minute-interval data from 6 MSD rain gages in or proximal to the watershed
- Database and statistical protocols for flood prediction based on the actual measurements
- Warning system components: 3 rain gauges, cloud-based data center, alarms issued
- Public portal: https://www.wqdatalive.com/public/1473

Photo: Radio NB

ALTERNATIVES

2. AUTHORIZED PLAN WITH MODIFICATIONS

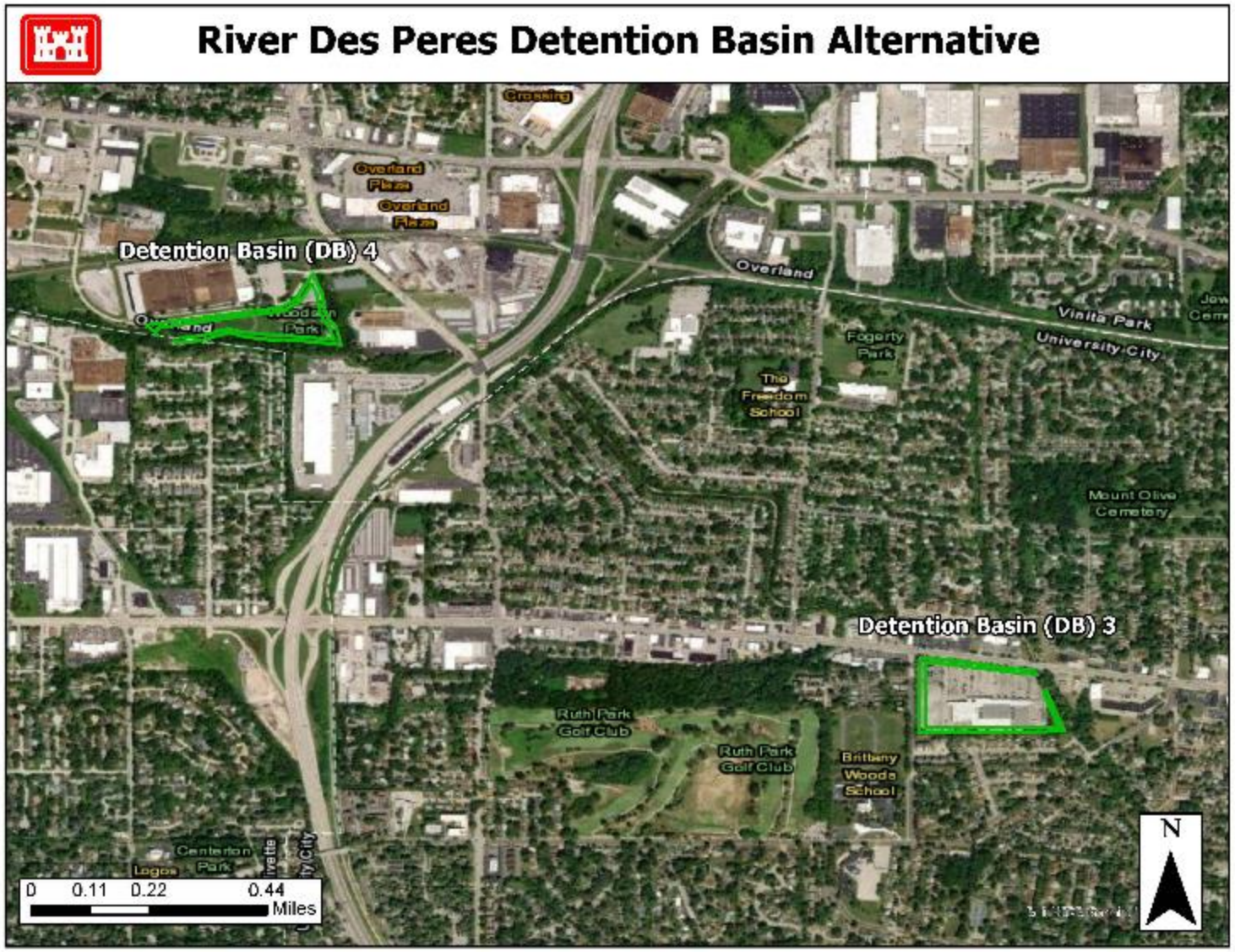


Features:

- Channel and bridge modifications from measure U-12 in authorized plan
- Detention basins added to mitigate downstream impacts/address induced flooding

ALTERNATIVES

3. DETENTION BASINS



Features:

- 5 examined, 2 determined hydraulically feasible
  - Greater effect higher upstream in the watershed
  - Greater effect from larger areas on higher ground
- DB3: 15 acres, businesses adjacent to Olive Blvd
- DB4: 9 acres, dog park at Woodson Rd Park
- Dry detention for maximum storage during storms

Alternative 3.a. DB3 and DB4

Alternative 3.b. DB4 only

ALTERNATIVES

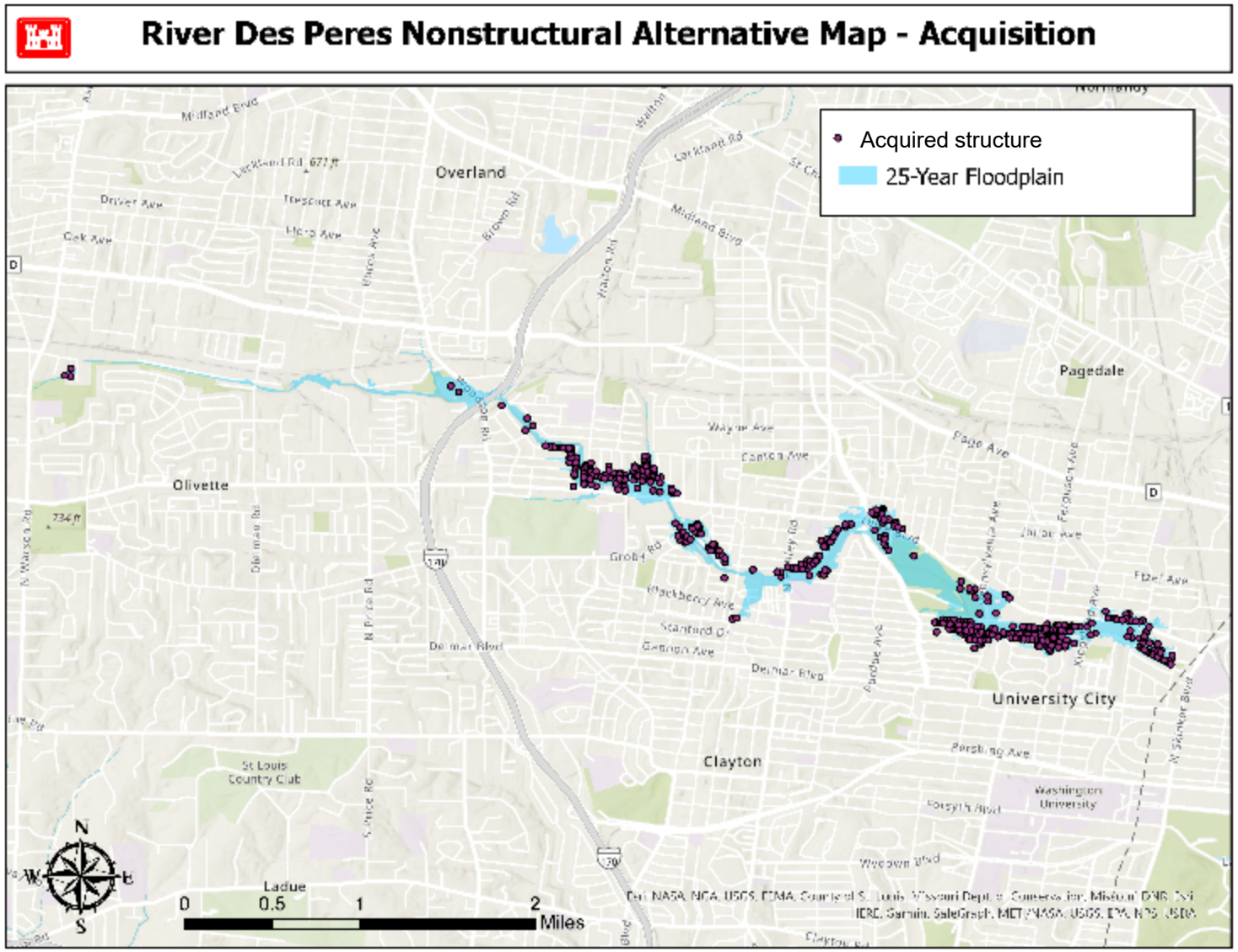
4. LEVEE/FLOODWALL

Features:

- 6 reaches identified; 1 in final alternative
- Floodwall is major component
- Avoids floodway, ties into high ground, minimizes road crossings

ALTERNATIVES

5. NONSTRUCTURAL - ACQUISITION/BUYOUT

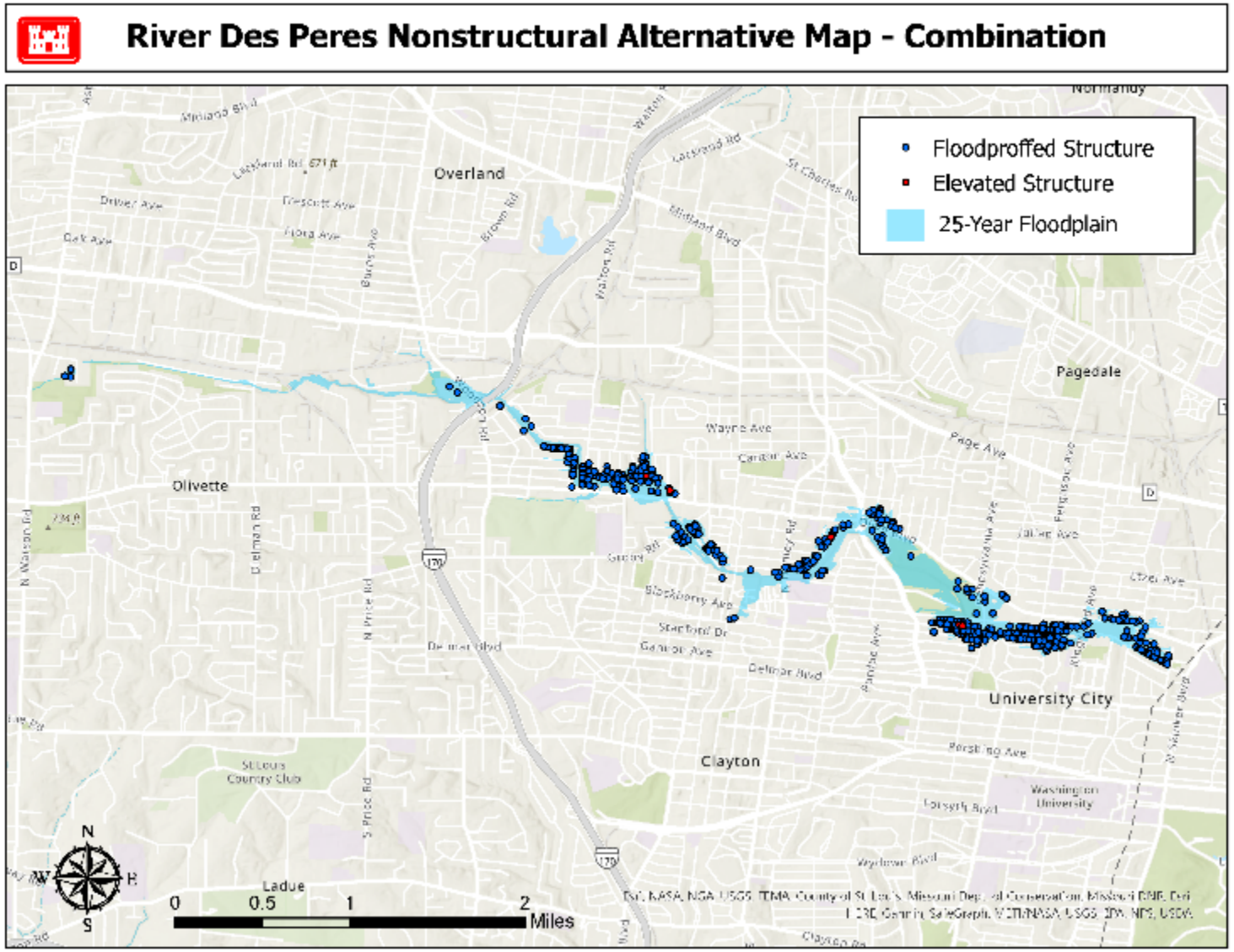


Features:

- ~500 structures acquired in 4% AEP (25-year) floodplain; people relocated
- Recreation & natural features (eg parks, green space) TBD
- Buyouts would be mandatory
- Includes buyouts of historic structures in University City Subdivision Number One

ALTERNATIVES

6. FLOODPROOFING AND ELEVATION OF STRUCTURES



Features:

- ~500 residential structures in 4% AEP (25-year) floodplain; most floodproofed, ~7 elevated
- Height of elevation/floodproofing: 1% AEP (100-yr)
- Affects historic structures in University City Subdivision Number One
- Dry floodproofing used in analysis; final floodproofing types (wet/dry, elevation of utilities, etc) TBD
- Voluntary participation

ALTERNATIVES

7. NONSTRUCTURAL - ELEVATION ONLY

Features:

- ~90 residential structures in 4% AEP (25-year) floodplain with flood depth above first floor; all elevated
- Developed as a ‘no floodproofing possible’ scenario
- Height of elevation/floodproofing: 1% AEP (100-yr)
- Voluntary participation

ALTERNATIVES

8. COMBINATION – DB4 AND NONSTRUCTURAL

Features:

- DB4 and ~56 residential structures in 4% AEP (25-year) floodplain with flood depth above first floor; all elevated
- Height of elevation/floodproofing: 1% AEP (100-yr)
- Voluntary participation

How were the alternatives evaluated?

The “Four Accounts”:

National Economic Development (NED)	Regional Economic Development (RED)
- Economic consequences of alternatives, including flood damage to the community	- Regional economic impacts of project implementation including effects on employment and labor income
Environmental Quality (EQ)	**Other Social Effects (OSE)**
- Impacts to threatened and endangered species, wetlands, hazardous waste sites, and cultural resources	- Life safety risk, critical infrastructure protected, socioeconomic consequences, recreation opportunities

ALTERNATIVES COMPARISON – COST BENEFIT SUMMARY

Alternatives	Level of Risk Reduction (% AEP)	Total Cost (incl. RE)	Net Annual Benefits (Benefits - costs)	BCR (annual benefits/costs)
1 - No Action	n/a	$ -	$ -	0
2 - Authorized Plan with Modifications (DB3 & DB4)*	TBD - range	$ 60,768,000	$ 20,000	1.01
3a - Detention Basins (DB3 and DB4)	50% (2-year) (filled by 10-yr, underwater by 100-yr)	$ 44,974,000	$ 724,000	1.33
3b - Detention Basin 4 (DB4)	50% (2-year) (filled by 10-yr, underwater by 100-yr)	$ 8,689,000	$ 1,200,000	2.98
4 - Levee/Floodwall (with DB3 & DB4)	1% (100-year)	$ 88,905,000	$ (1,096,000)	0.73
5 - Nonstructural - Acquisition	4% (25-year)	$ 251,928,000	$ (3,591,000)	0.60
6 - Nonstructural – Floodproofing & Elevation	4% (25-year)	$ 56,478,000	$ 2,172,000	2.09
7 - Nonstructural (elevation only)	4% (25-year)	$ 26,498,000	$ (204,000)	0.79
8 - DB4 + Nonstructural (elevation only) (25yr)	4% (25-year)	$ 25,650,000	$ 1,030,000	1.84

^ NED Plan: most net benefits

Key questions: Do we expect these numbers to change a lot on further refinement? Do the other criteria change the TSP selection?

SELECTION OF THE TENTATIVELY SELECTED PLAN

The TSP selected is the NED Plan: Alternative 6 - Nonstructural – Floodproofing and Elevation
- Highest net benefits; 2nd highest BCR

The Draft Report provides details on the planning process and all of the measures and alternatives

Further refinement of the TSP & decision on Locally Preferred Plan

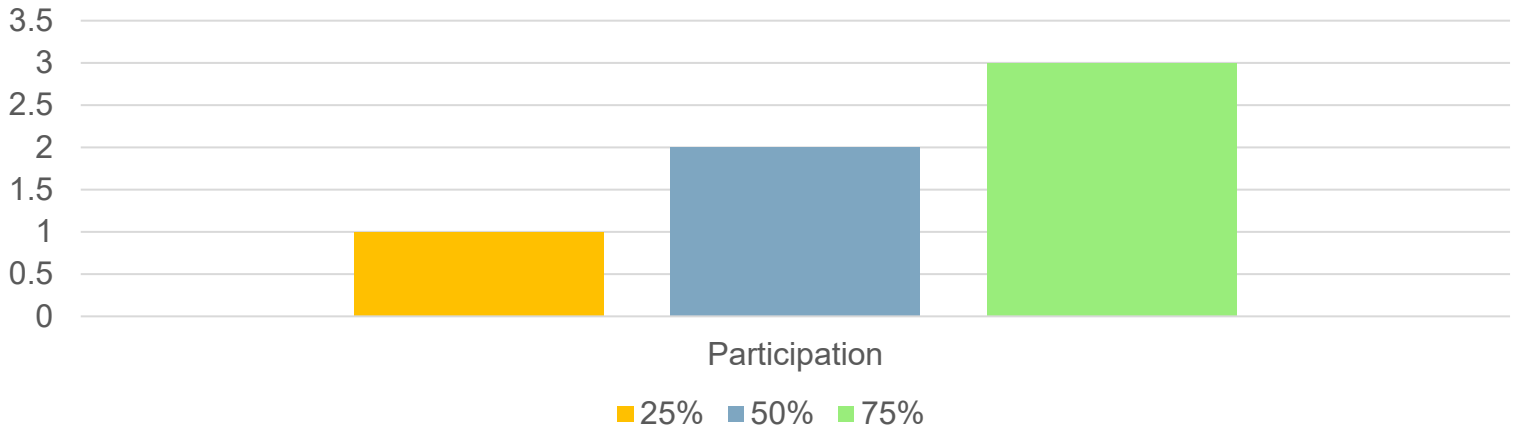
- Further refinement of the TSP is needed & will happen in August/September.
- Refinement may include a different proportion of nonstructural measures applied (eg more elevation than floodproofing), and the addition of Detention Basins 3 and/or 4 (DB3 and DB4).
    - Inclusion of DB4 is dependent on City of Overland.
    - Types of nonstructural measure significantly impact net benefits.
- University City may choose to select a different alternative as a Locally Preferred Plan.
    - Requires a waiver to be approved by HQ USACE.

Floodproofing and Elevation Survey

Floodproofing (& Elevation) Survey

- University City survey; USACE not involved
- Responses regarding participation in voluntary floodproofing and elevation of structures will help inform participation rate

USACE participation rate analysis – will also inform scope



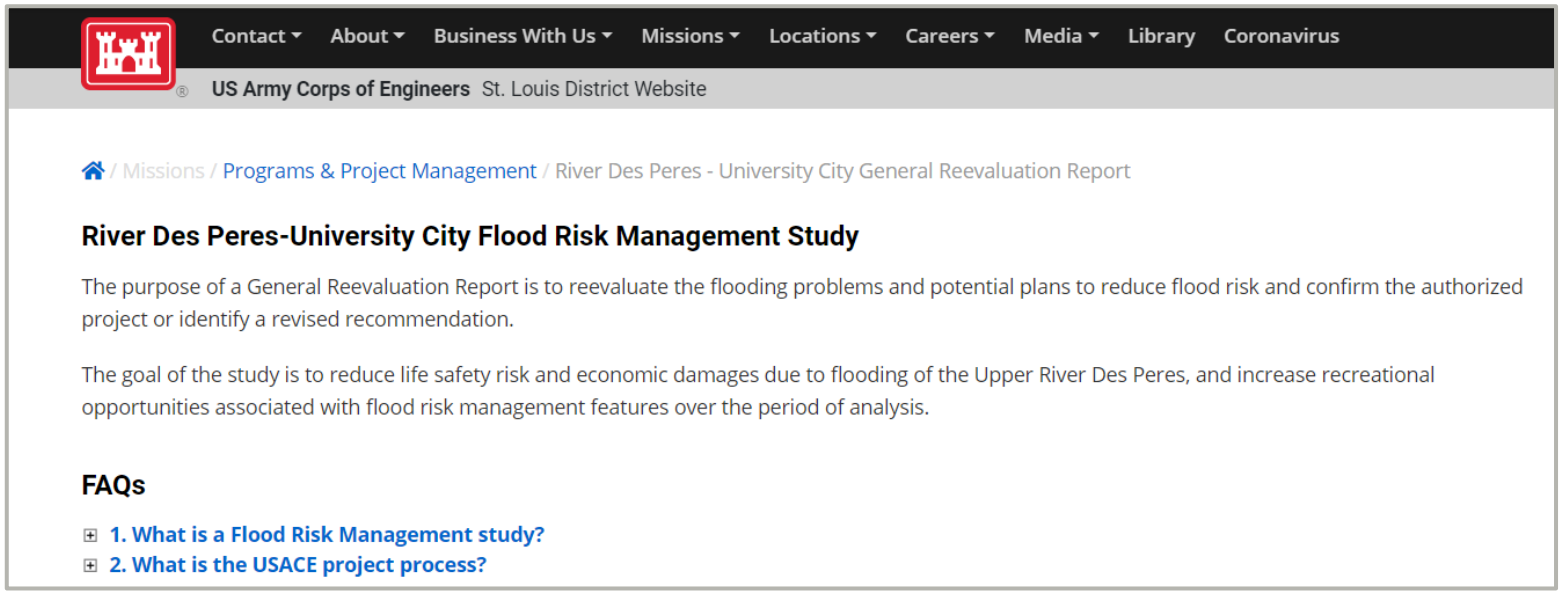
Public Review period

Public Review of Draft Report: 30 days

- We want your input!!
- Report posted on USACE project website
- Submit comments to ucityfloodrisk@usace.army.mil

Comments from University City

Project website:



https://www.mvs.usace.army.mil/Missions/Programs-Project-Management/River-Des-Peres-University-City-General-Reevaluation-Report/

Q&A

Topics may include:

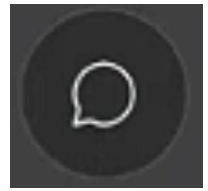
- Flood events that have impacted you
- Flood damage, road closures, and cleanup
- Interest in floodproofing and elevation, or other measures
- Anything else you would like the planning team to know!

Comments or information can also be provided to:
ucityfloodrisk@usace.army.mil

Or by mail to:
U.S. Army Corps of Engineers, St. Louis District
C/O Mr. Matthew Jones
1222 Spruce Street
St. Louis, MO 63103

Project website: https://www.mvs.usace.army.mil/Missions/Programs-Project-Management/River-Des-Peres-University-City-General-Reevaluation-Report/

Click the Chat button to open the Chat box



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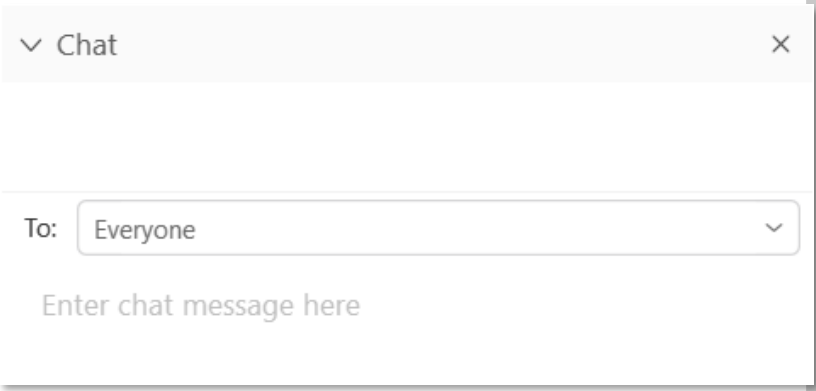

Type your comment and hit enter.

Thank You for Coming!

ATTACHMENT #4

7-28-2021 email

Good morning Sinan,

Here at last is a written response on the topic of the Lake Sherwood dam. Apologies for the wait.

Lake Sherwood dam is a privately owned and operated dam and does not fall within USACE responsibility. USACE did conduct inspections on a number of non-federal private dams in the 1970s and 1980s, as a one-time assessment as part of the establishment of National and State-run Dam Safety Programs. This dam did not become a Federal dam in any way following that inspection and evaluation.

While a dam failure is a potential flood hazard, a Lake Sherwood dam failure analysis was not included as part of the scope and budget of the River Des Peres GRR flood risk management study since the dam is not intended as a flood control feature and a one-time future flooding scenario from the Lake Sherwood dam failure would most likely not change what the federal government recommends for flood risk management in U-City.

USACE would support the a dam failure analysis that would allow the city to better understand potential impacts if the dam fails. USACE may have the capability to provide dam break analysis at an additional cost within the timeframe of this study. However, it's unlikely to change the decision/recommendation made in the study. The study team could likely look at impacts of a dam break (a dam failure analysis) under this study. However, we do not have the funding to do this since it was not included in the scope or budget. A rough-order-of-magnitude estimate of the additional cost of this analysis would be in the $50-100k range. This would include H&H modeling, structural engineering, geotechnical engineering, life safety analysis, and documentation. The timeframe would be tight to try to complete the analysis and have all the documentation reviewed within the study period; this is a concern for the study team and has yet to be confirmed. Also, it should be noted that a USACE assessment of the dam would not bring it under federal responsibility.

There are other USACE program areas available that may be able to provide federal cost share for a dam failure analysis, such as Planning Assistance to States (PAS) or Floodplain Management Services (FPMS). However, these might take longer to get approved and underway than the study. You may reach out to Shawn Sullivan (Shawn.F.Sullivan@usace.army.mil) or Hal Graef (Harold.W.Graef@usace.army.mil) for more information on these cost share opportunities (please copy myself and Matt Jones just so we're tracking).

We'd be happy to answer any follow up questions.

Thanks!

Janet

Janet Buchanan
Plan Formulation
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