Country Club Creek West @ Roy G Guerrero Park

Environmental Commission

May 3, 2017

City of Austin
WATERSHED PROTECTION

In Conclusion…

- $12.5M total project cost
  - Includes channel and bridge
  - 50/50 cost share between PARD and WPD
  - Substantial FEMA grant funding appears promising
- Preliminary Projected Schedule
  - Preliminary Engineering completed
  - Design complete Summer 2018
  - Construction complete Summer 2020

City of Austin WATERSHED PROTECTION

Roy G. Guerrero Colorado River Metro Park

- 363 acres
- Purchased in parcels from 1980s – 2000s
- Improvements constructed in 2010
- Ballfields, trails, playgrounds, disc golf, bridge, channel
- Named after former PARD Asst. Director

City of Austin WATERSHED PROTECTION

2015 Damage

- Memorial Day Floods
- Halloween Floods

City of Austin
WATERSHED PROTECTION

2015 Damage

- May and October storm events
- Failure of pedestrian bridge
- 1000’ of recently constructed channel eroded
- 1200’ of existing channel eroded
- Headcut progressing with each minor storm event

City of Austin WATERSHED PROTECTION

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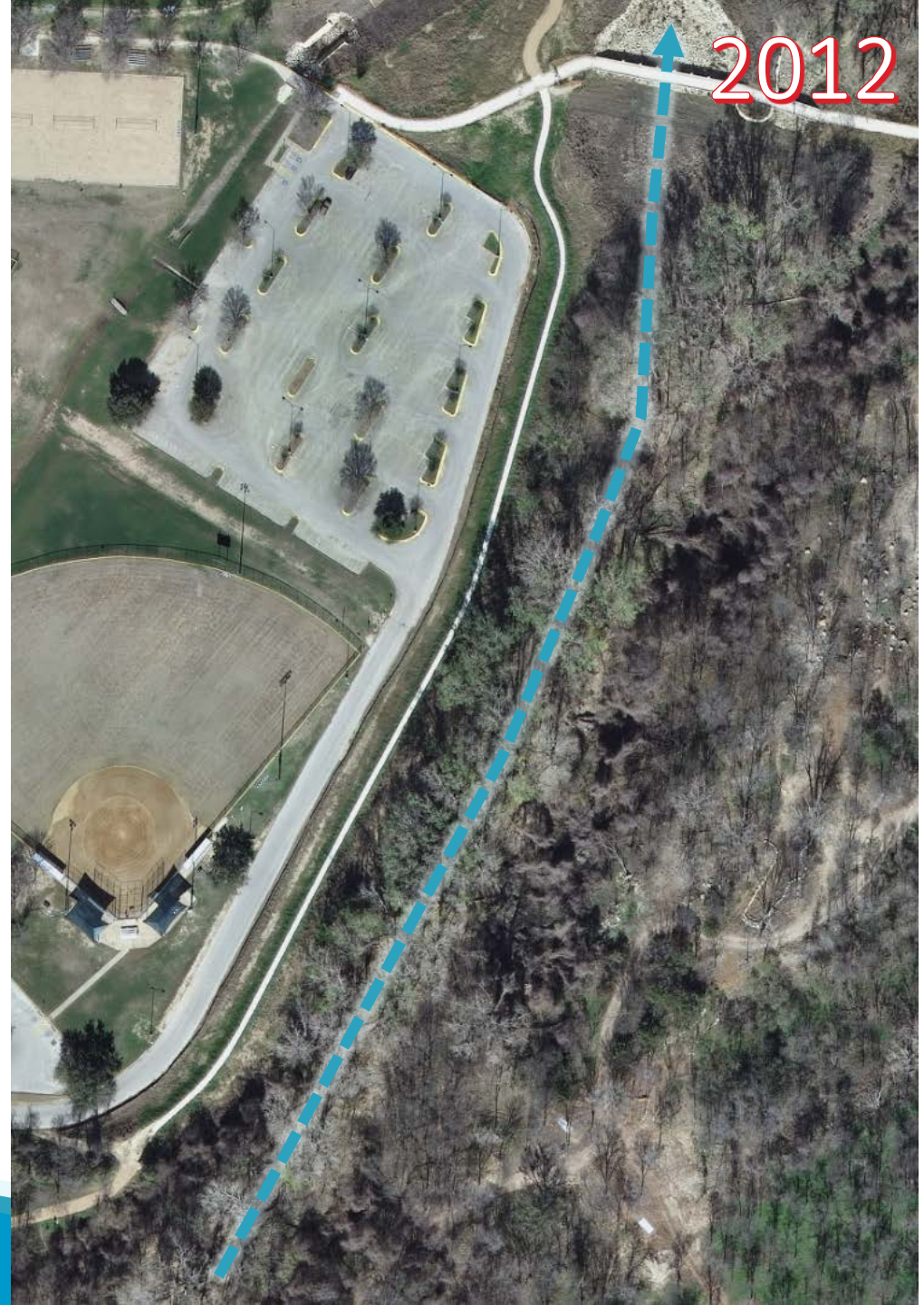


City of Austin WATERSHED PROTECTION

Today.

Country Club East
&
Country Club West

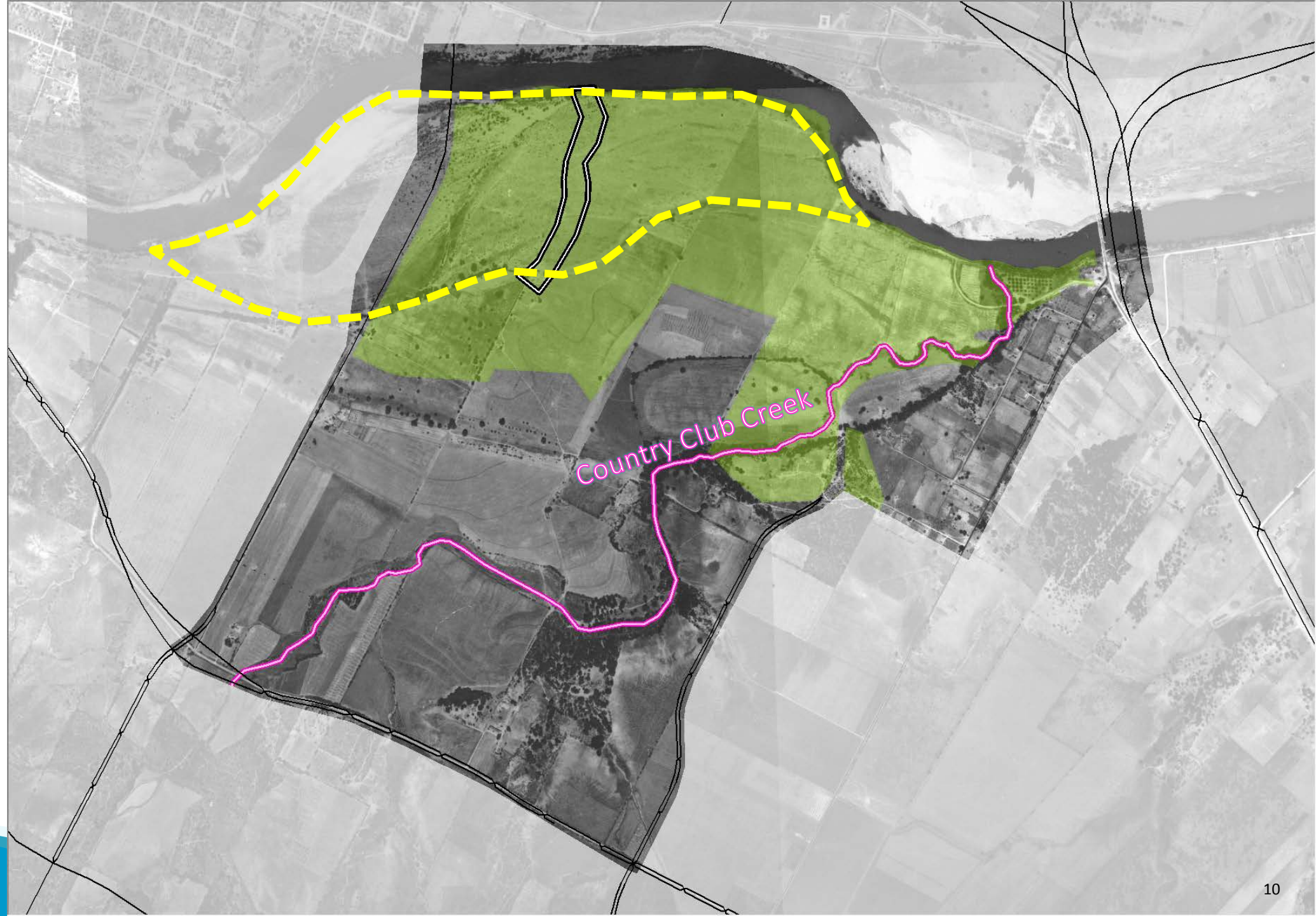
City of Austin
WATERSHED PROTECTION

1940

One Creek

No Longhorn Dam

Large Sand Bar at RGG



City of Austin
WATERSHED PROTECTION

1940

One Creek –

No Longhorn Dam

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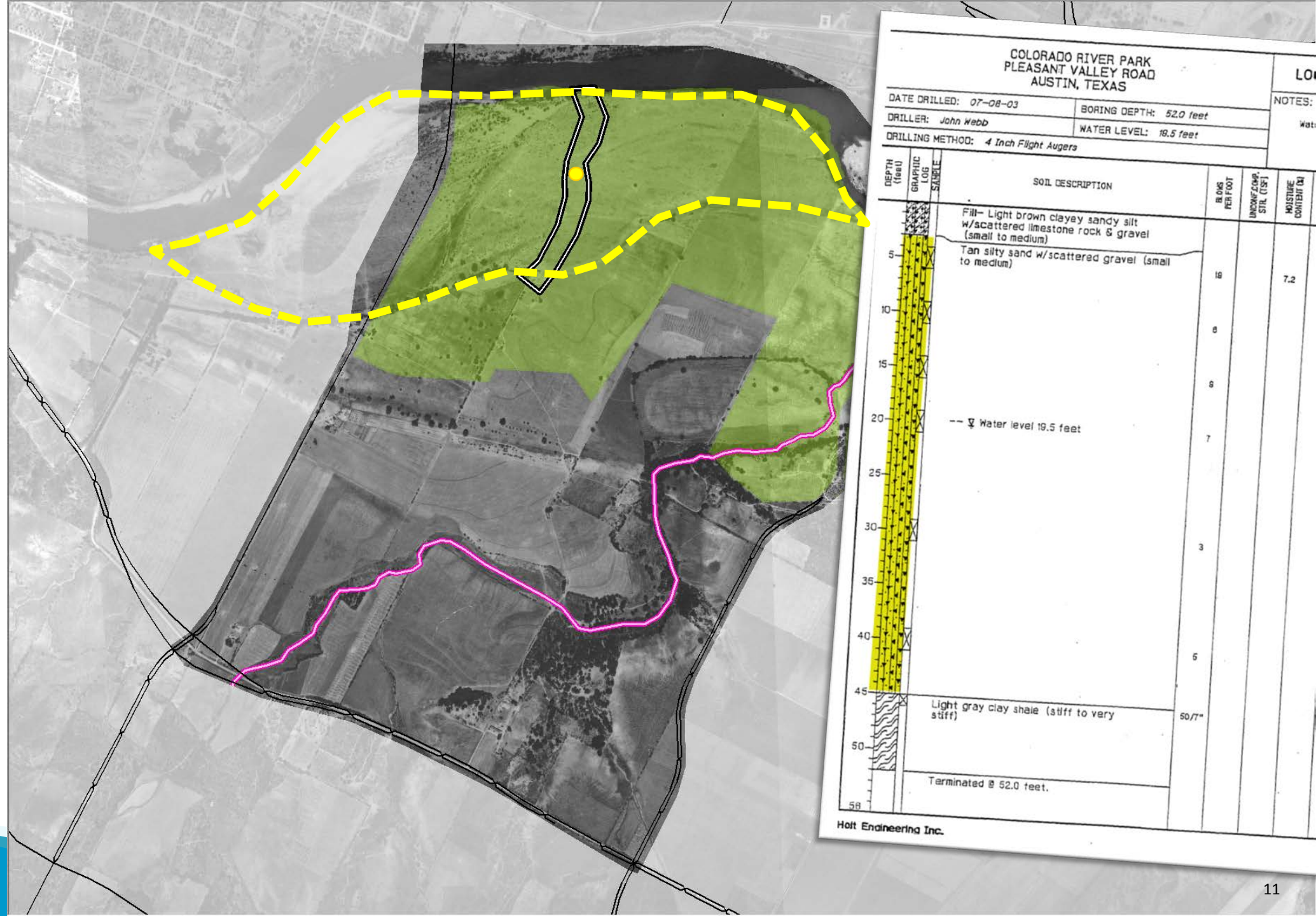
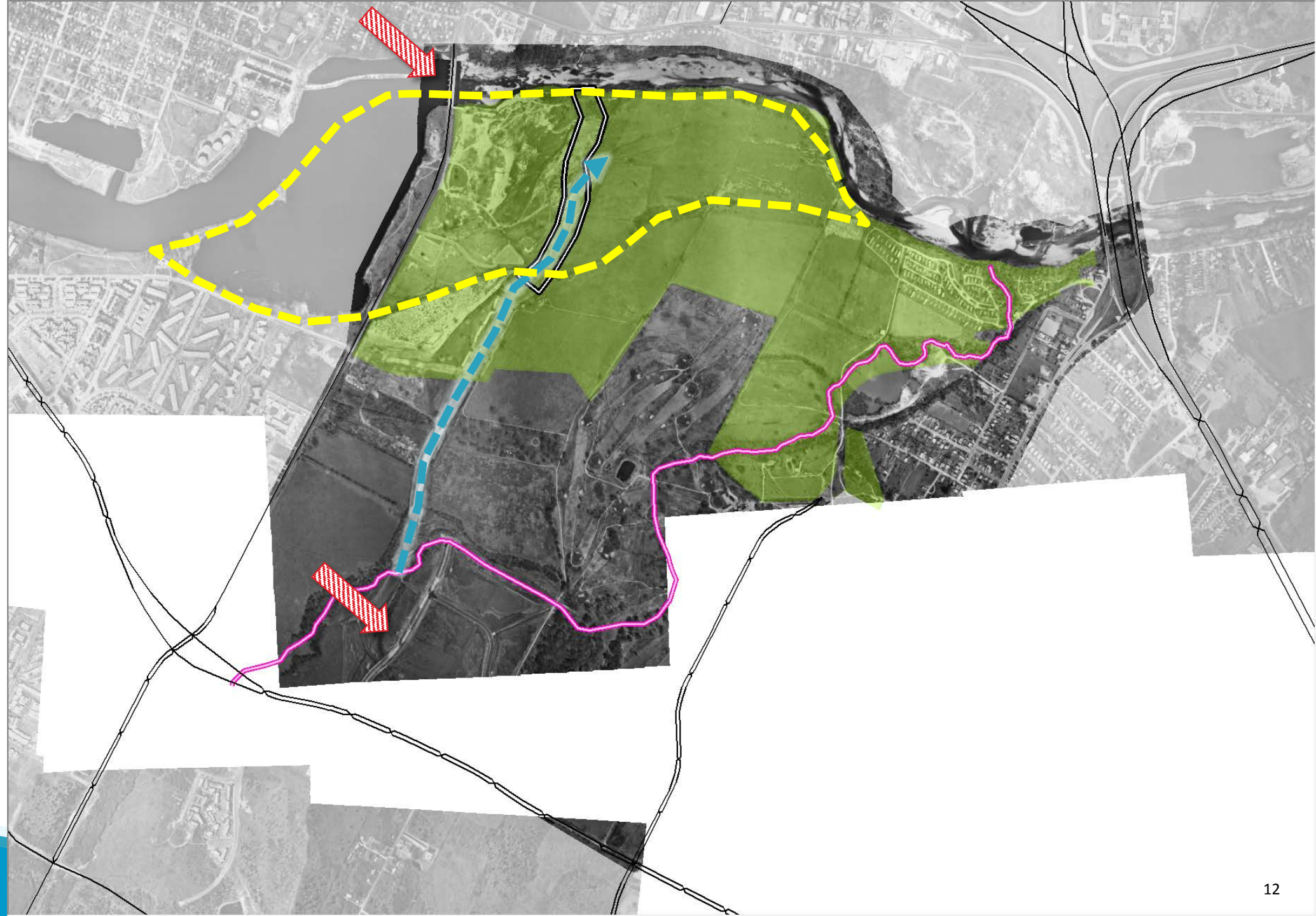


1976

Longhorn Dam controls river flows

Development permitted on Riverside contingent upon construction of flood bypass channel



City of Austin WATERSHED PROTECTION

RGG Impact

1940 – No Channel

1976 – CCW Bypass Constructed, but stops before the river.

1980s - 2000s – Gully formations

2010 – Park development

2015 – Washout

City of Austin
WATERSHED PROTECTION

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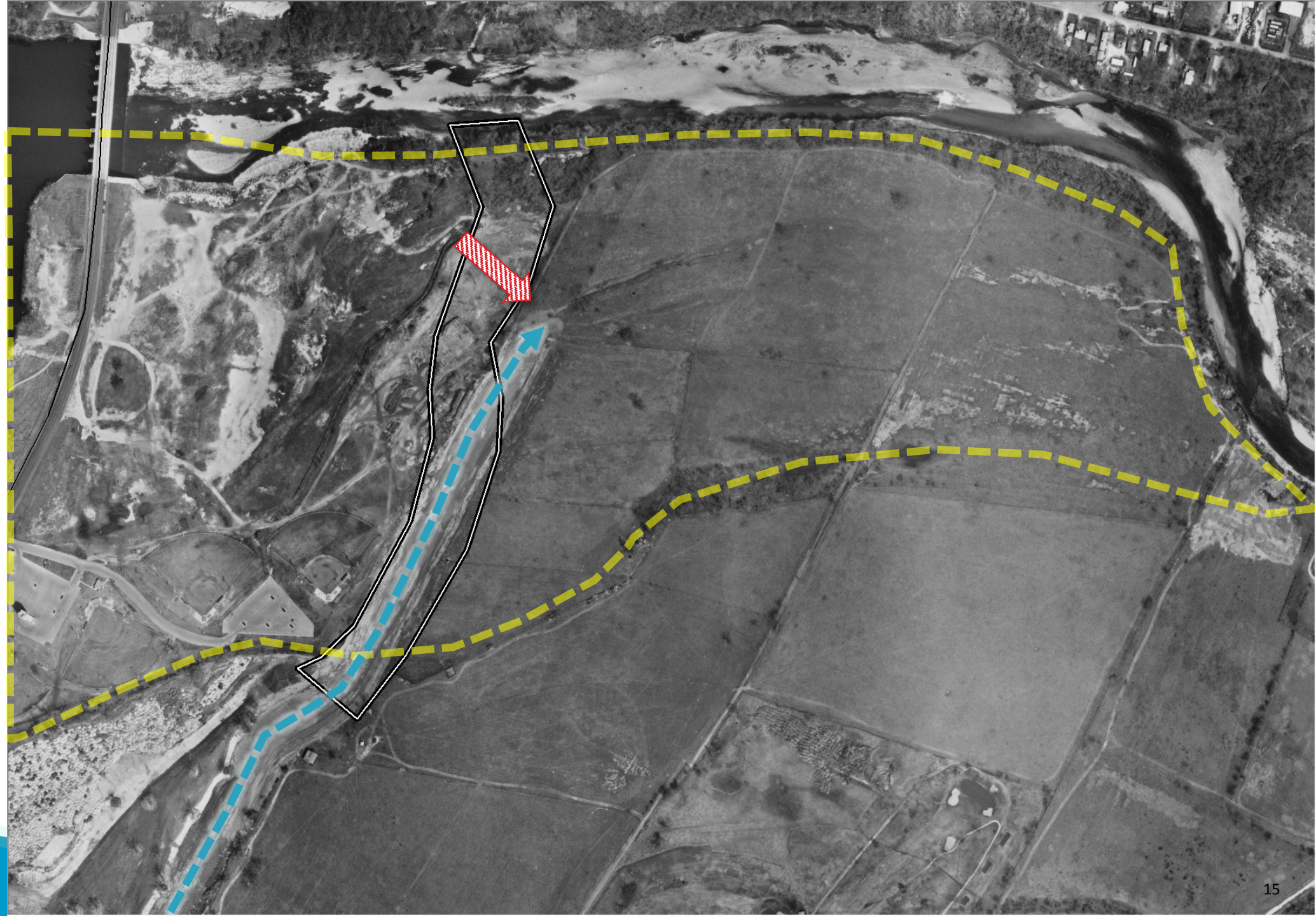

City of Austin WATERSHED PROTECTION

RGG Impact

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2003

City of Austin WATERSHED PROTECTION

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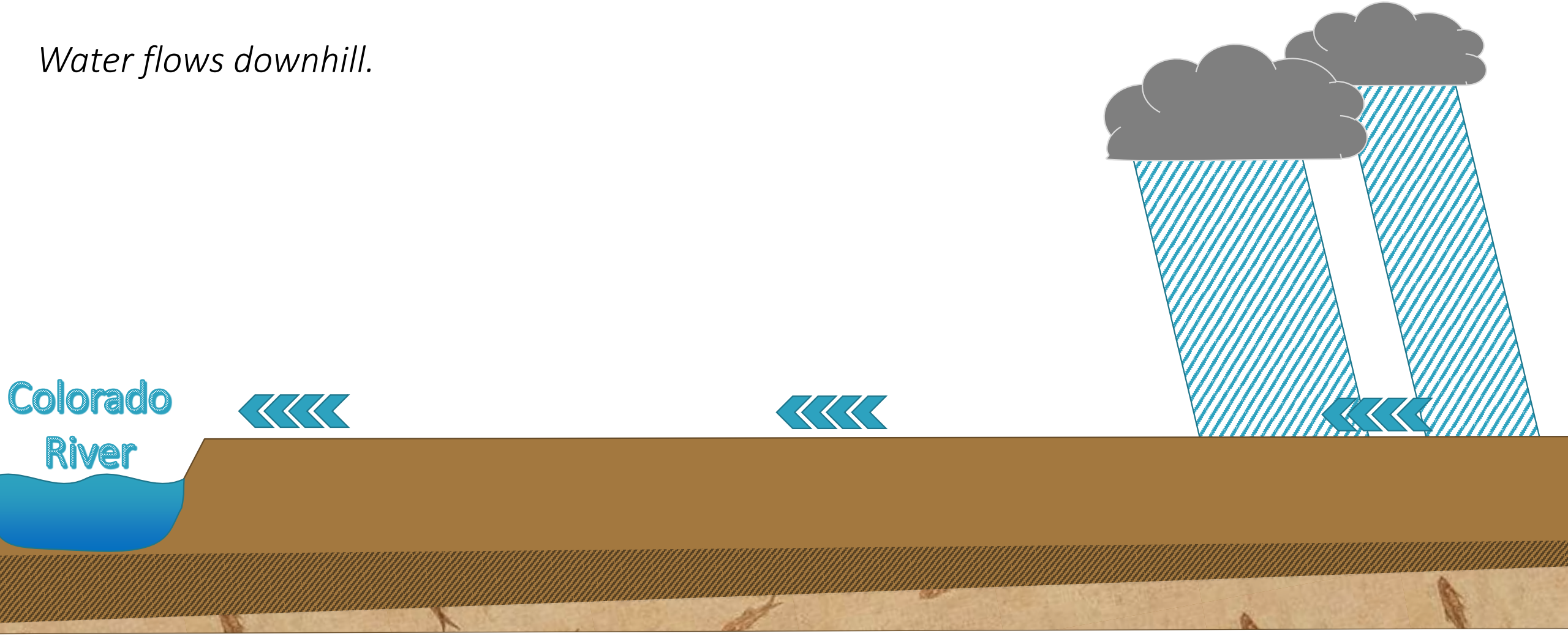
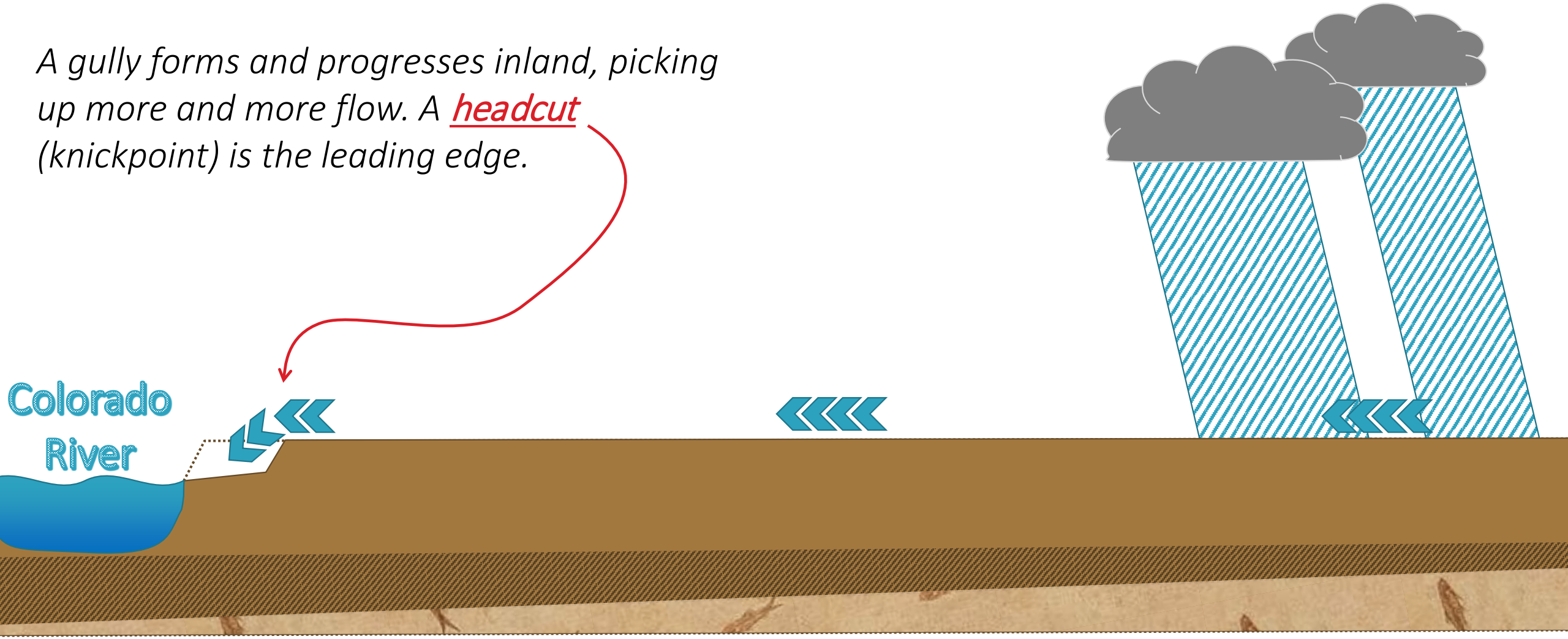
City of Austin WATERSHED PROTECTION

Water flows downhill.



City of Austin
WATERSHED
PROTECTION

A gully forms and progresses inland, picking up more and more flow. A ***headcut*** *(knickpoint) is the leading edge.*




COLORADO RIVER
1997
2003
2009

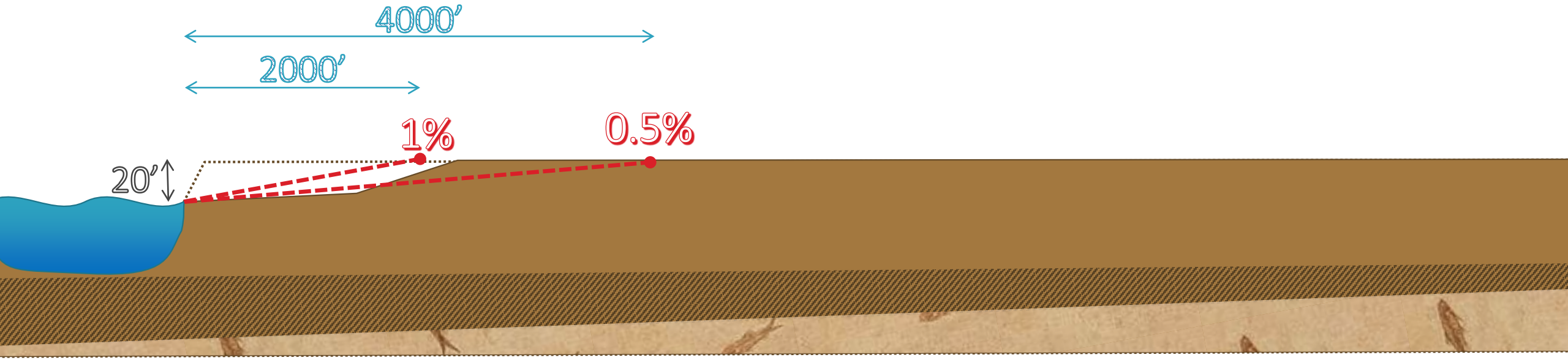
When a gully becomes a dominant flow path,
it travels further inland.

City of Austin
WATERSHED
PROTECTION

The stable slope and the elevation difference to the river control how far inland a gully will travel

Slope = Fall/Run

A channel at a 1% slope will fall 1' for every 100' it travels.



City of Austin WATERSHED PROTECTION

*At **RGG**, the stable slope is **0.25%.***

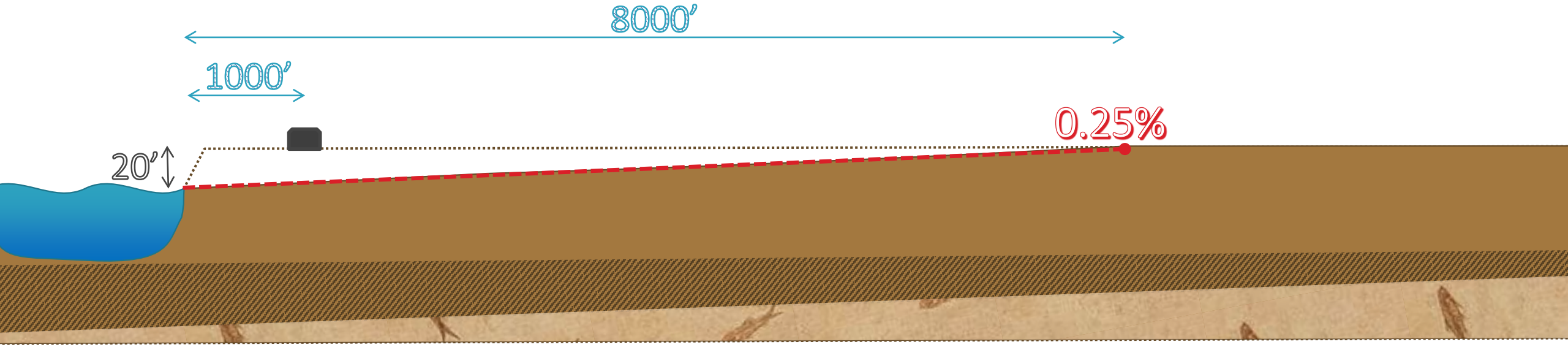
*The fall to the river is **20’.***

*The channel needs **8000’** to be stable.*

The bridge was only 1000’ away.

Slope = Fall/Run

A channel at a 1% slope will fall 1’ for every 100’ it travels.



City of Austin WATERSHED PROTECTION

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City of Austin WATERSHED PROTECTION

A tipping point…

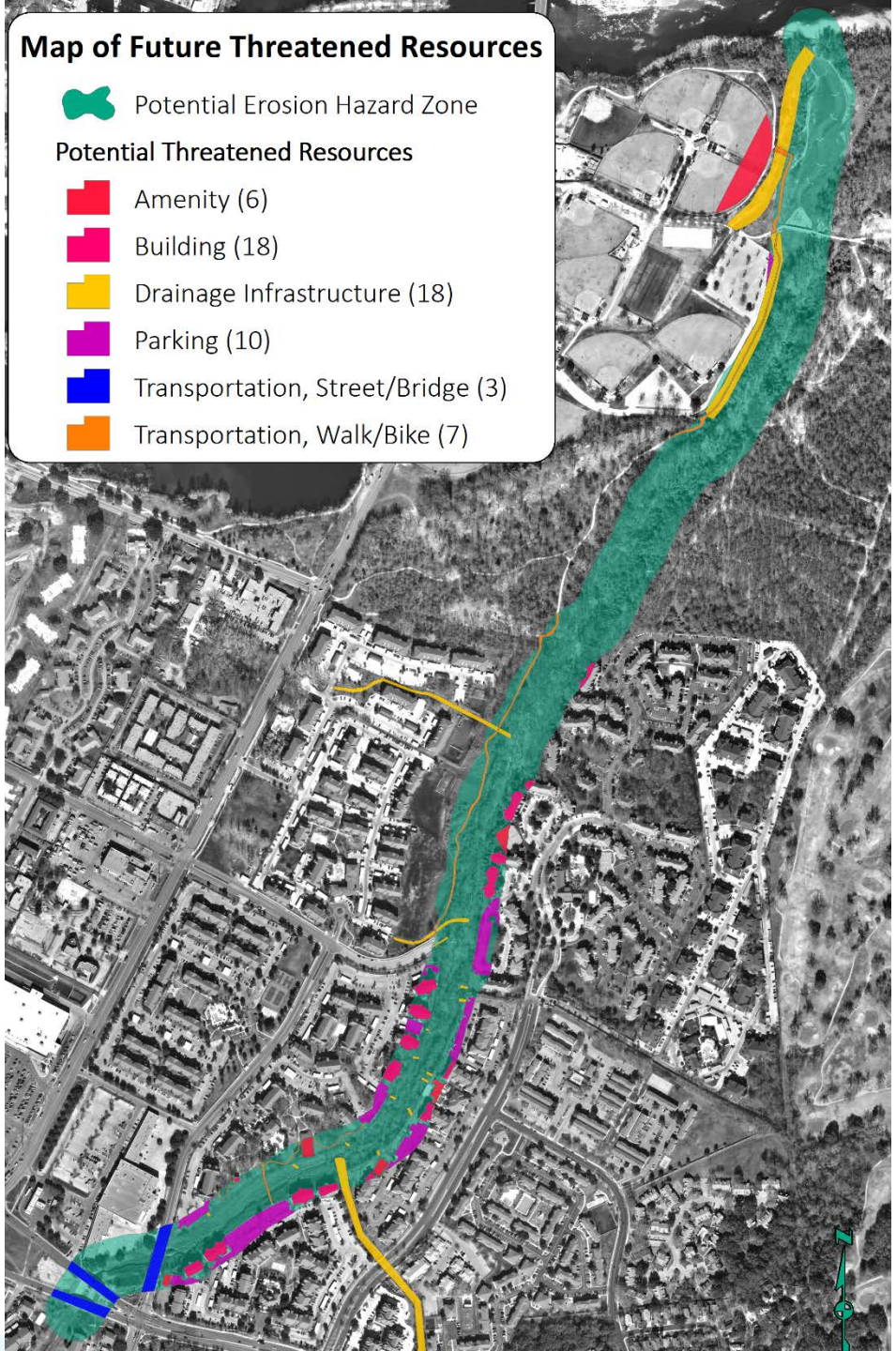
- Headcut moves past bridge
- Main channel is left perched
- Side channel becomes primary flow path
- Headcut is unchecked in channel upstream of bridge
- Headcut progresses 1200’ in 18 months

WHAT TO DO?

City of Austin WATERSHED PROTECTION

Do nothing?

- Headcut will continue to move upstream.
- High confidence of threats upstream
- Increasingly expensive project

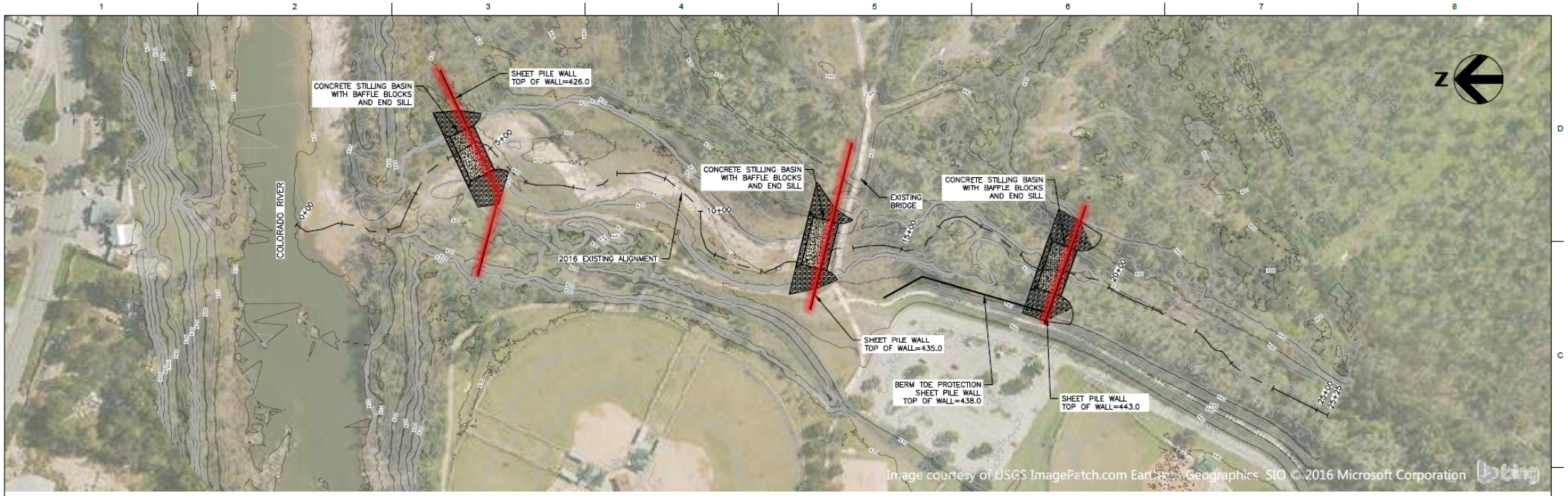


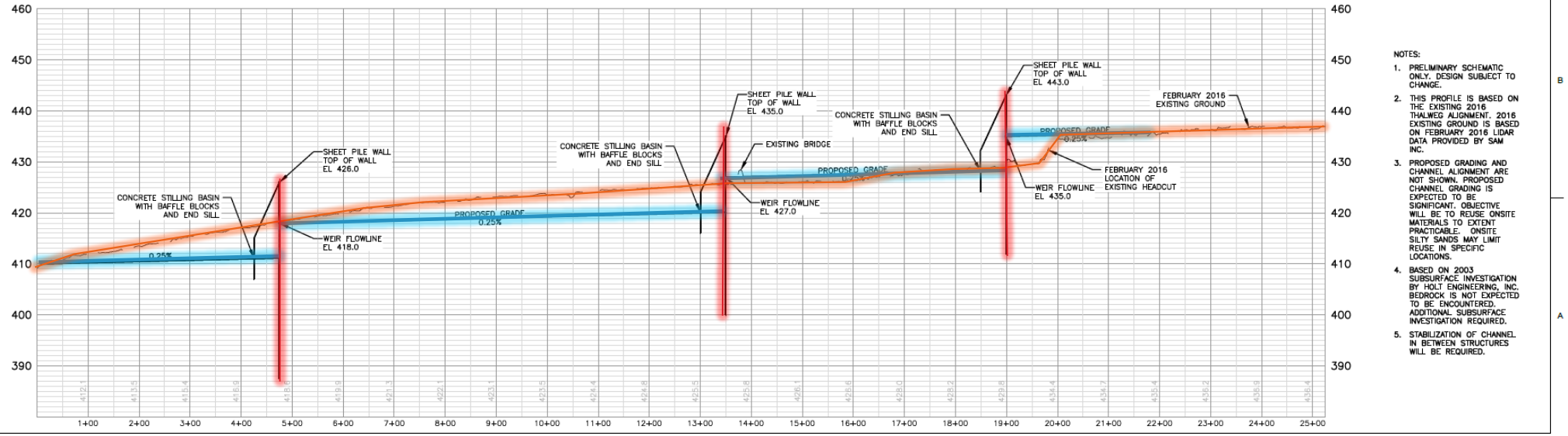
City of Austin WATERSHED PROTECTION

Interim Measures

- WPD designed and constructed with in-house crews an interim stabilization measure to protect the ballfields. Completed April 2017.

City of Austin WATERSHED PROTECTION





NOTES:

1. PRELIMINARY SCHEMATIC ONLY. DESIGN SUBJECT TO CHANGE.
2. THIS PROFILE IS BASED ON THE EXISTING 2016 THALWEG ALIGNMENT. 2016 EXISTING GROUND IS BASED ON FEBRUARY 2016 LIDAR DATA PROVIDED BY SAM INC.
3. PROPOSED GRADING AND CHANNEL ALIGNMENT ARE NOT SHOWN. PROPOSED CHANNEL GRADING IS EXPECTED TO BE SIGNIFICANT; OBJECTIVE WILL BE TO REUSE ONSITE MATERIALS TO EXTENT PRACTICABLE. ONSITE SILTY SANDS MAY LIMIT REUSE IN SPECIFIC LOCATIONS.
4. BASED ON 2003 SUBSURFACE INVESTIGATION BY HOLT ENGINEERING, INC. BEDROCK IS NOT EXPECTED TO BE ENCOUNTERED. ADDITIONAL SUBSURFACE INVESTIGATION REQUIRED.
5. STABILIZATION OF CHANNEL IN BETWEEN STRUCTURES WILL BE REQUIRED.

ISSUE	DATE	DESCRIPTION
-	-	-

PROJECT MANAGER	E. STEWART, P.E.
DESIGNED BY	K. RICH
DRAWN BY	C. AMARAL
DATE	OCT 2016
PROJECT NUMBER	261968

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF ERIC J. STEWART TEXAS P.E. NO. 95907 DATE: OCT. 25, 2016

IT IS NOT TO BE USED FOR CONSTRUCTION OR ANY OTHER PURPOSE.

ROY G. GUERRERO PARK
CHANNEL STABILIZATION

Austin, Texas

ALTERNATIVE 2
CHANNEL STABILIZATION
PLAN & PROFILE

0 1" 2"

FILENAME	PROPOSED_ALTERNATIVES.DWG
SCALE	H: 1"=100', V: 1"=10'
SHEET	FIG 6-4

c:\pwworking\dal\d0863776\Proposed_Alternatives.dwg, FIG 5-4, 10/28/2016 2:19:16 PM, camaral

Vertical Concrete Drop Structures

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