



September 23, 2022

Victoria Escobedo, PE (via email: [victoria.escobedo@sanantonio.gov](mailto:victoria.escobedo@sanantonio.gov))  
Senior Engineer  
City of San Antonio Public Works Department  
P.O. Box 839966  
San Antonio, TX 78283-3966

**Re: Floodplain Variance (FPV) #22-002  
FPDP# 2022510 (Denied) - Castleridge/Slick Ranch Creek Mitigation Project  
Public Works Department Capital Improvement Project (WBS# 23-01484)**

Dear Ms. Escobedo,

The Public Works Department (PWD) Storm Water Division has reviewed the design and Floodplain Development Permit (FPDP) request associated with the proposed improvements for the *Castleridge/Slick Ranch Creek Mitigation Project* (Mitigation Project), identified with the CoSA PWD project number WBS# 23-01484. The request for a FPDP has been denied, as indicated in disapproved FPDP# 2022510, as the proposed project improvements are not in compliance with the current City of San Antonio Unified Development Code (UDC) Appendix F – Floodplains.

1. The proposed project improvements do not meet the following UDC requirements:

- Appendix F, Subdivision C, Section 35-F124(c)(3) pertaining to permitted increases in water surface elevations, which states, *“An increase in water surface elevation [for special flood hazard areas] is permitted solely when all the following conditions are met:*
  3. *Increase in water surface elevations for the 1% annual chance (AC) floodplain does not exceed six (6) inches.”*
- Note that the proposed Mitigation Project channel improvements were found to be compliant for subparts 1, 2, and 4 of 35-F124(c), and as such, those subparts were not individually referenced above for brevity.
- For subpart 3 above, the proposed Mitigation Project channel improvements will result in water surface elevation (WSE) increases exceeding six (6) inches at some locations along Slick Ranch Creek downstream of the project limits.

2. A variance to UDC Section 35-F124(c)(3) will be required by PWD Storm Water Division prior to issuance of the approved Floodplain Development Permit to allow project construction. The City's Planning Commission will be responsible for consideration of and rendering a decision for the Variance Request.

3. The applicant has provided the following information to assist with the review of the variance to the above UDC requirements:

- The Engineer of Record has conducted a comprehensive flood study to evaluate the accuracy of the 100-year (1% annual chance) floodplain spill from Slick Ranch Creek that occurs in the downstream of Tom Slick Park, and the resulting 100-year floodplain along Slick Ranch Creek downstream to the confluence with Leon Creek. The study was based on several different FEMA-level modeling scenarios. The engineer summarized the study findings in a concise letter format with supporting map exhibits and submitted the letter as justification for the Variance Request. Refer to Figure 1 or Exhibit 1 in the attached engineer's letter for the subject locations.
  - The letter includes measures and actions taken by the design and project management teams to properly understand and administratively manage the WSE increases. Those measures and actions are detailed below.
4. The PWD Storm Water Division supports the Variance Request for the following reasons:
- The Engineer of Record made extensive efforts to understand the complex channel hydraulics to minimize proposed water surface elevation (WSE) increases using all practical measures. Despite these efforts, the resulting flood study found that water surface elevation increases will range from approximately +0.57 feet to +0.84 feet downstream of the subject channel project, thereby exceeding the six (6) inches permitted by the floodplain ordinance in 35-F124(c)(3). However, as shown in the engineer's letter, these WSE increases are reflected only in a comparison of the 'Post-Project' vs. 'Corrected-Effective' hydraulic modeling scenarios. Even when these WSE increases are factored in, the Post-Project water surface elevations are expected to be between approximately 3.8 feet and 7.7 feet lower than the 'Effective' water surface elevations that produce the current FEMA floodplain map for this area. To summarize:

**Effective WSE > Post-Project WSE > Corrected-Effective WSE**

*Example at cross-section 2095 in the HEC-RAS hydraulic model:*

**718.52 ft. (Effective) > 713.52 ft. (Post-Project) > 712.72 ft. (Corrected-Effective)**

- Therefore, based on these findings, the Post-Project floodplain mapping is expected to result in an overall mapping decrease downstream of the Mitigation Project when compared to the current Effective FEMA floodplain map, even when factoring in the project-related WSE increases. Reference Table 1 in the engineer's Variance Request letter for specific WSE comparisons between the scenarios mentioned at the various cross-sections.
- The channel improvements proposed with this project (Mitigation Project) will be constructed concurrently with a separate upstream channel project (Channel Project), and the combined benefit is estimated to reduce the 100-year flood risk for approximately 150 residential structures. As such, the projects are expected to provide a substantial reduction in flood risk while at the same time not causing adverse flood impacts to existing habitable structures.
  - As noted in the conclusion of the engineer's justification letter, the hydraulic modeling results show that the downstream Marbach Road and Pinn Road bridge structures will not be adversely affected by the Post-Project water surface elevation increases and will remain safe.
  - The engineer's investigation has found that the Post-Project WSE increases will be contained in an existing drainage right-of-way (ROW) from the end of the Mitigation Project downstream to Pinn Road. Furthermore, from Pinn Road downstream to the Leon Creek confluence, the WSE increases will be contained in a proposed drainage ROW that is in the

process of being acquired. The proposed drainage ROW is split between two properties (ID 575193 & 575195) as depicted in Exhibit 2 in the engineer's justification letter.

- A FEMA Conditional Letter of Map Revision (CLOMR) for the proposed project improvements, which includes the Post-Project WSE increases, has been approved by FEMA pending final property notifications. It is the community's intent, in collaboration with the Engineer of Record and city's project management team, to develop a Letter of Map Revision (LOMR) study and officially revise the FEMA 1% annual chance floodplain mapping in the study area following construction.
5. PWD will support a variance to the above UDC requirement without any conditions of approval.
- The construction documents and associated flood studies have gone through the Floodplain Management Team's formal technical review process, and we have found the analyses to be technically sound. The Mitigation Project and Channel Project designs have been finalized with no further technical review comments from our team. As such, there are no outstanding items related to the project design that would affect the findings of the flood study or the justification for this Variance Request.

If the Variance is approved by the Planning Commission, the Floodplain Management Team within the PWD Storm Water Division will issue an approved Floodplain Development Permit (FPDP) to allow for construction of the Mitigation Project and Channel Project to commence. If you have further questions or require any further assistance and/or information, please contact me at (210) 207-0182 or [sabrina.santiago@sanantonio.gov](mailto:sabrina.santiago@sanantonio.gov)

Sincerely,

*Sabrina Santiago*

Sabrina Santiago, EIT, CFM  
Storm Water Engineering Manager & Floodplain Administrator  
Public Works Floodplain Management Team

Attachments: AEVR# 22-002 Application  
Variance Request Justification Letter  
Denied FPD# 2022510

cc: Brandon Hilbrich, PE, CFM, HDR Engineering, Inc.  
City of San Antonio, Planning Commission



# CITY OF SAN ANTONIO

## FLOOD PLAIN DEVELOPMENT PERMIT



Application Number 22-510

Date 8/25/2020

Permit Number 2022510

### 1. APPLICANT DATA (Owner)

Company Name City of San Antonio - Public Works Department

First Name Victoria M Escobedo Last Escobedo

Address: Number 100 Street W. Houston, 15th Floor City San Antonio

State TX Zip Cod 78205 Phone (210) 207-5013

**THE ABOVE PERMITTEE HAS APPLIED FOR A FLOODPLAIN DEVELOPMENT PERMIT. THE APPLICATION HAS BEEN REVIEWED BY THE FLOOD PLAIN ADMINISTRATOR AND IT IS HIS DETERMINATION THAT THE PROPOSED DEVELOPMENT IS LOCATED WITHIN AN IDENTIFIED FLOOD PLAIN OF THE CITY OF SAN ANTONIO OR E.T.J.**

**THE FLOOD PLAIN ADMINISTRATOR HAS REVIEWED PLANS AND SPECIFICATIONS OF THE PROPOSED DEVELOPMENT FOR CONFORMANCE WITH THE FLOOD PLAIN ORDINANCE NO. 57969 OF THE CITY OF SAN ANTONIO, TEXAS.**

**YOU ARE HEREBY AUTHORIZED TO PROCEED WITH THE FOLLOWING PROPOSED CONSTRUCTION:**

### 2. TYPE OF PROPOSED DEVELOPMENT

Proposed use Other\*

\*If non-residential or other selected complete the following:

Type of use proposed Castleridge/Slick Ranch Creek Channel (Phases 2 & 3) & Mitigation projects (both as WBS #23-01484)

Occupant Name COSA - capital improvement project Phone (210) 207-5013

### 3. DESCRIPTION OF CONSTRUCTION - NOTE: Applicant shall provide two sets of plans of the proposed construction or development.

Type: Other Other (Describe) Flood control project: channel improvements through excavation; new drop structure for Phase 2 & 3; modified drop structure for Mitigation project

**ON THE FOLLOWING DESCRIBED PROPERTY:**

### 4. LOCATION

Subdivision N/A Number            Lot Number            Block            NCB            Tract           

Location Description Work along Slick Ranch Creek. Channel Project Ph. 2 & 3 seg: from approx. 330 ft. d/s of SH151 to approx. 2,150 ft. d/s of SH151. Mitigation Project seg: approx. 550 ft. u/s of W. Military Dr. to approx. 300 ft. u/s of Marbach Rd.

Permittee Print Name

Permittee Signature

RECOMMEND FOR DISAPPROVAL

*Sabrina Santiago*

FLOOD PLAIN ADMINISTRATOR (DIR. OF PUBLIC WORKS)

Date

08/25/2022

Date

8/30/2022

Date

**(Conditions and provisions on next page)**





# CITY OF SAN ANTONIO

## FLOOD PLAIN DEVELOPMENT PERMIT



### FOR OFFICE USE ONLY

Application Number 22-510

Dat 8/25/2020

Permit 2022510

**TO MAINTAIN COMPLIANCE WITH THE FLOOD PLAIN ORDINANCE REGULATIONS AND TO ELIMINATE OR MINIMIZE FLOOD DAMAGE POTENTIAL TO THE PROPOSED DEVELOPMENT, YOU ARE HEREBY DIRECTED TO CONSTRUCT YOUR PROPOSED DEVELOPMENT IN ACCORDANCE WITH THE FOLLOWING SPECIAL PROVISIONS:**

- ☐ For residential structures, the lowest floor (including basement) must be elevated to \_\_\_\_\_ feet mean sea level.
- ☐ For non-residential structures, the lowest floor (including basement) must be elevated or floodproofed to \_\_\_\_\_ feet mean sea level.
- ☐ Permittee must submit an elevation certificate from a registered professional engineer or surveyor that the finished floor level of each structure has been constructed at the specified elevation.
- ☐ For non-residential floodproofing, a registered professional engineer or architect must certify that the floodproofing methods are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood.
- ☒ Other provisions:

\* This FPDP application is denied because the proposed project improvements are not compliant with Parts 1 and 3 of the following section of the Unified Development Code - Appendix F - Floodplains - Areas of Special Flood:

-- Section 35-F124(c)(3) which states: "An increase in water surface elevation is permitted solely when all the following conditions are met: (1.) Property owner owns both sides of the floodplain. (2.) The increase in the regulatory floodplain is contained in a (con't)

dedicated drainage easement or right-of-way as required per subsection 35-504(d)(3). (3.) Increase in water surface elevation for the 1% annual chance [AC] floodplain does not exceed six (6) inches. (4.) No increase in water surface elevations or (con't)

velocities upstream and downstream outside of the owner's property limits."

\*\* The applicant has the right to seek a variance from the requirements of these regulations. As outlined in Appendix F Section 35-F135 - Variance Procedures:

-- "...the applicant shall present the disapproved [floodplain] permit to the director of development services together with information as to why the variance should be granted. The [Planning] commission will then hear the request as soon as practical."

\* PROJECT DESIGN CONSULTANT: HDR Engineering, Inc. (210.841.2800)

Is Additional Information Required Yes

Are other Federal, State, or Local Permits required? Yes

Permit Application - Reviewed By: Jeremy George, PE, CFM

### WARNING

**The flood hazard boundary maps and other flood data used by the Flood Plain Administrator in evaluating flood hazards to proposed developments are considered reasonable and accurate for regulatory purposes and are based on the best available scientific and engineering data. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. Issuance of this permit does not imply that land outside the areas of special flood hazards or that the uses permitted within such areas will be free from flooding or flood damages due to local conditions. Construction standards required by this permit are the minimum standards deemed necessary to minimize or eliminate flood damage, but reliance on these minimum standards shall not create liability on the part of the City, the Flood Plain Administrator or any officer or employee of the City of San Antonio in the event flooding or flood damage does occur.**

**Permittee Initial**



# CITY OF SAN ANTONIO

## DEVELOPMENT SERVICES DEPARTMENT

1901 S. Alamo, San Antonio, TX 78204

### ADMINISTRATIVE EXCEPTION/VARIANCE REQUEST APPLICATION

<b>Project Name:</b>	Castleridge/Slick Ranch Creek Mitigation Project
<b>A/P # /PPR # /Plat #</b>	City of San Antonio Project Number 23-01484
<b>Date:</b>	August 24, 2022
<b>Code Issue:</b>	Increase in 1% AC water surface elevation greater than 6"
<b>Code Sections:</b>	35-F124(c)(3)

<b>Submitted By:</b>	<input checked="" type="checkbox"/> Owner	<input type="checkbox"/> Owners Agent * (Requires notarized Letter of Agent)
<b>Owners Name:</b>	Victoria Escobedo, PE, Project Manager	
<b>Company:</b>	City of San Antonio, Public Works Department	
<b>Address:</b>	100 W. Houston St., 15th Floor   San Antonio, TX	<b>Zip Code:</b> 78205
<b>Tel #:</b> 210.207.5013	<b>Fax#</b> 210.207.4406	<b>E-Mail:</b> victoria.escobedo@sanantonio.gov
<b>Consultant:</b>	Brandon Hilbrich, PE, CFM	
<b>Company:</b>	HDR Engineering, Inc.	
<b>Address:</b>	613 NW Loop 410, Suite 700, San Antonio, TX	<b>Zip Code:</b> 78216
<b>Tel #:</b> 210.841.2835	<b>Fax#</b>	<b>E-Mail:</b> brandon.hilbrich@hdrinc.com
<b>Signature:</b>	<i>Victoria J Escobedo</i>	

#### **Additional Information – Subdivision Plat Variances & Time Extensions**

- ☐ Time Extension ☐ Sidewalk ☒ Floodplain Permit ☐ Completeness Appeal  
☐ Other \_\_\_\_\_
- City Council District 6 Ferguson Map Grid \_\_\_\_\_ Zoning District \_\_\_\_\_
- San Antonio City Limits ☒ Yes ☐ No
- Edwards Aquifer Recharge Zone? ☐ Yes ☒ No
- Previous/existing landfill? ☐ Yes ☒ No
- Parkland Greenbelts or open space? Floodplain? ☒ Yes ☐ No



August 29, 2022

Administrative Exception / Variance Request (AEVR) Review  
c/o Development Services Staff  
Development Services Department  
City of San Antonio  
1901 S. Alamo  
San Antonio, TX 78204

RE: *Castleridge/Slick Ranch Creek Mitigation Project (No. 23-01484)*  
*UDC Codes 35-F124(c)(3)*

- ☒ Administrative Exception  
☐ Environmental Variance  
☐ Subdivision Platting Variance – Time Extension

Dear Development Services Staff,

HDR Engineering, Inc. (HDR) is requesting a floodplain variance for the Castleridge/Slick Ranch Creek Drainage Mitigation Project (Mitigation Project), for increased water surface elevations (WSE) greater than 0.5 feet downstream of the improvement limits. The Mitigation Project in conjunction with the Castleridge/Slick Ranch Creek Drainage Improvements Project (Channel Project) which completed design in October 2019, are part of the City of San Antonio's (CoSA) continued initiative to reduce risk of Slick Ranch Creek (SRC) overbank flooding to adjacent residential neighborhoods downstream of Highway 151 as shown in **Figure 1** and **Exhibit 1** in **Attachment A**. The Mitigation Project extends from Unnamed Tributary 2 to Slick Ranch Creek to the confluence with Leon Creek. The Channel Project is located approximately 1,100 feet upstream of the Mitigation Project.

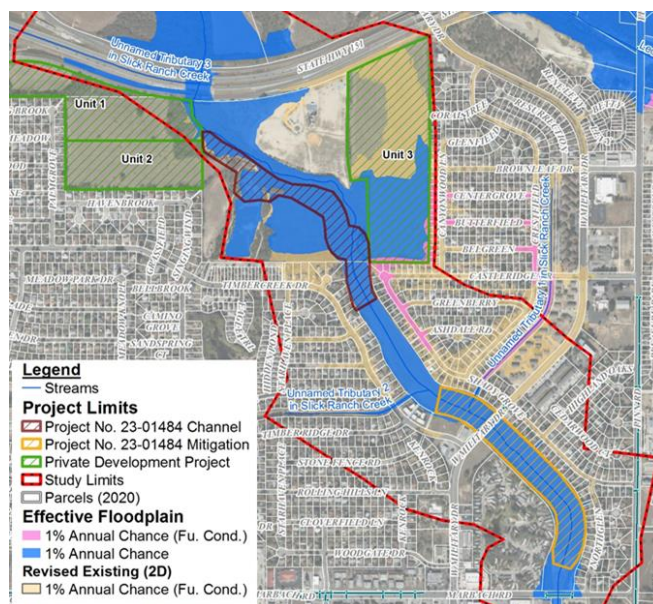


Figure 1: Project Improvements Area

## Project Background Information

### CHANNEL PROJECT

The Channel Project improvements within Slick Ranch Creek includes constructing an improved earthen bypass channel starting 450 feet upstream of Tom Slick Park parallel to the current channel stream centerline. (**Figure 2**). The new bypass channel will increase channel capacity and eliminate 100-year storm event overflow along the east overbank into the residential area. A new concrete drop structure will be constructed in the park approximately 300 feet upstream of the south property line of the park. This project is currently funded and the project design is complete.

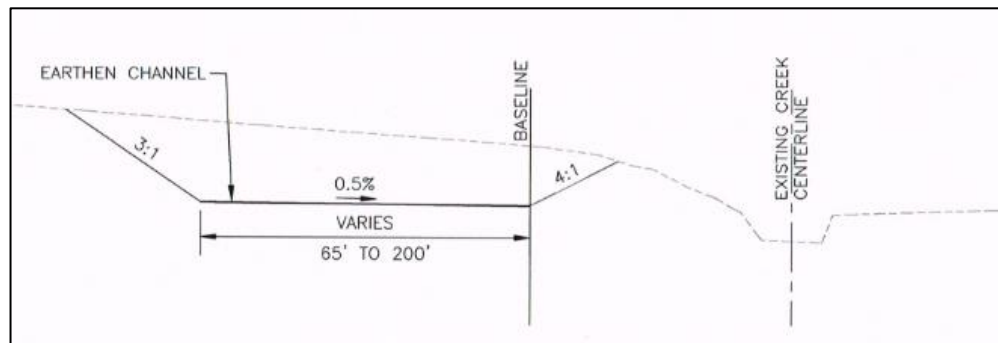


Figure 2 - Proposed Bypass Channel Typical Section

### MITIGATION PROJECT

The Mitigation Project improvements within Slick Ranch Creek include lowering the channel flowline from approximately 650 feet upstream of Military Dr. near the Unnamed Tributary 2 confluence to approximately 1,700 linear feet downstream of Military Dr. at the existing drop structure upstream of Marbach Rd. The objective of these improvements is to mitigate the WSE rises caused by the Channel Project improvements upstream of Military Dr. The mitigation channel improvements include a typical 200-ft bottom with 3:1 side slope and a minimum 1.0% cross-slope to an earthen pilot channel (**Figure 3**). Proposed grading is contained within the right-of-way and will begin at the existing side slope toe and excavate down to the desired flowline, thereby increasing the channel capacity within the project limits. This project is currently funded and the project design is complete.

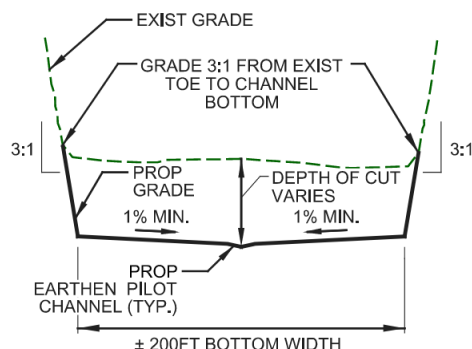


Figure 3 - Proposed Mitigation Channel Typical Section

In conjunction with the two channel projects, a planned residential development is proposing to fill a property within the Slick Ranch Creek east overbank and includes an on-site channel to convey offsite flows from Hwy 151 around the development and discharge into Slick Ranch Creek. The proposed

channel improvements within Slick Ranch Creek will remove flooding in the overbank area and will generate a significant portion of the material for the residential development fill. Details of the Mitigation Project are documented in the Final Design Plans.

## **Benefit & Impact Analyses**

In the preliminary engineering phase of this project, a two-dimensional hydraulic analysis was completed to better understand the existing flood risk conditions for Slick Ranch Creek and the adjacent neighborhoods. Findings from that analysis showed the current effective FEMA floodplain does not accurately communicate the flood risk for approximately 150 homes in the adjacent neighborhoods as shown from the 2D Revised Existing 1% Future Chance inundation exhibits on **Exhibit 1**. This led the development of the proposed Channel Project previously discussed.

In the design phase for the Mitigation Project, hydrologic and Hydraulic analyses were performed using HEC-HMS version 4.8 and HEC-RAS version 6.1 to evaluate proposed flood reduction benefits and flood impacts. Details of these analyses are documented in the Final Design Drainage Report.

The following is a brief summary of the detailed analyses performed, which included three stages of hydraulic model development:

- Duplicate Effective Conditions – The Duplicate Effective hydraulic HEC-RAS model was developed by rerunning the Effective HEC-RAS model to verify effective results were reproduced. The FEMA-approved Effective model produces the mapped Special Flood Hazard Areas (SFHA) depicted on the Flood Insurance Rate Map.
- Corrected Effective Conditions – In addition to incorporating corrected peak flows from a corrected hydrologic HEC-HMS model, the HEC-RAS model was updated to reflect the best present understanding of flood risk. Adjustments were made in the following ways: survey and 2017 LiDAR topographic information was incorporated, cross-section placement, roughness coefficients updated, and lateral structure placement was evaluated and modified. The Corrected Effective Conditions model then becomes the new unofficial baseline model for comparisons.
- Post-Project Conditions – Built on the Corrected Effective HEC-RAS model, the Post-Project model improvements associated with the Channel and Mitigation Projects, and the Private Development Project.

The proposed channel Mitigation Project mitigates WSE rises originally produced by the upstream Channel Project improvements and contains the 100-year design storm within the existing channel banks throughout the project area. The combination of the proposed channel improvement projects will reduce the risk of flooding for local residents and provide sufficient channel conveyance along Slick Ranch Creek to the downstream Leon Creek confluence. However, an impacts assessment downstream of the Mitigation Project confirmed that the downstream Post-Project water surface elevations from Marbach Rd. to the Leon Creek confluence increased between 0.57 ft and 0.84 feet when compared to the Corrected Effective model. This is due to the additional channel conveyance through the project areas that can convey more flow in the downstream direction.

## Code Issue

This letter is to request a design variance from **Unified Development Code (UDC) Appendix F (Floodplains – Areas of Special Flood), Section 35-F124(c)(3)** pertaining to permitted water surface elevations (WSE), which states:

*“An increase in water surface elevation is permitted solely when all the following conditions are met:*

- 1. Property owner owns both sides of the floodplain.*
- 2. The increase in the regulatory floodplain is contained in a dedicated drainage easement or right-of-way as required per subsection [35-504\(d\)\(3\)](#).*
- 3. Increase in water surface elevation for the 1% annual chance [AC] floodplain does not exceed six (6) inches.*
- 4. No increase in water surface elevations or velocities upstream and downstream outside of the owner's property limits.”*

When comparing the Post-Project and Corrected Effective model results, the 0.57 to 0.84 foot water surface elevations increases previously mentioned exceed the six (6) increase allowed per the floodplain ordinance.

## Justification for Variance Request

### WATER SURFACE ELEVATION CONTAINMENT

Following an investigation of these WSE rises when comparing Corrected Effective vs Post-Project (**Table 1**), the following was confirmed:

- All water surface elevation increases are contained within the existing Slick Ranch Creek channel banks from the end of the Mitigation Project to the Leon Creek confluence
- From the end of the Mitigation Project to Pinn Road, the increases are contained within the existing CoSA drainage right-of-way.
- From Pinn Road to the Leon Creek confluence, the increases will be contained in a proposed CoSA drainage right-of-way that is in the process of being acquired (**Exhibit 2 in Attachment A**). Currently, Slick Ranch Creek is located within private parcels (ID 575193 and 575195) where no drainage right-of-way or easement exists. Final drainage easement documents were provided to the CoSA Real Estate Department. Per correspondence with CoSA Real Estate Department on 8/22/2022, offers have been provided to property owners and are pending acceptance.

### FEMA LETTER OF MAP CHANGE - CLOMR

Additionally, a Conditional Letter of Map Revision (CLOMR) has been reviewed and approved by the CoSA Floodplain Administrator and has been approved by FEMA pending community notification. Post-Project floodplain mapping provided in the CLOMR shows an overall reduction in flood hazard limits downstream of the Mitigation Project and will be completely contained within the CoSA dedicated drainage right-of-way. Moreover, the proposed water surface elevation increases only occur when comparing the Post-Project hydraulic model results to the Corrected Effective (existing condition) results. As noted in the CLOMR report and summarized in **Table 1**, the Post-Project 1% AC WSE are significantly less than the current FEMA effective WSE. Following the



completion of construction for the two channel projects, a LOMR will be developed and submitted to FEMA for acceptance of the 1% AC floodplain revisions.

**Table 1: Effective vs Post-Project WSE (ft) Results**

Cross Section	Location	Effective WSE <sub>(1% AC)</sub>	Corrected. Eff. WSE <sub>(1% AC)</sub>	Post-Project WSE <sub>(1% AC)</sub>	PP – C. Eff $\Delta$ WSE <sub>(1% AC)</sub>	PP – Eff $\Delta$ WSE <sub>(1% AC)</sub>
2731	End of Mitigation Project	720.76	716.09	716.85	0.76	-3.91
2657		720.75	716.14	716.89	0.75	-3.86
2594		720.63	715.98	716.73	0.75	-3.90
2540		720.43	715.62	716.37	0.75	-4.06
2490		719.77	714.73	715.46	0.73	-4.31
2438	Marbach Rd.	-	-	-	-	-
2385		718.84	712.87	713.71	0.84	-5.13
2243		718.62	712.74	713.56	0.82	-5.06
2095		718.52	712.72	713.52	0.80	-5.00
1935		718.60	712.81	713.58	0.77	-5.02
1671		718.54	712.30	713.01	0.71	-5.53
1436		718.45	711.74	712.33	0.59	-6.12
1313		718.43	711.95	712.54	0.59	-5.89
1249	Pinn Rd.	-	-	-	-	-
1184		713.00	704.63	705.29	0.66	-7.71
1021		711.75	704.75	705.41	0.66	-6.34
799		709.38	703.13	703.71	0.58	-5.67
550		708.32	700.97	701.53	0.56	-6.79
302	Leon Creek Confluence	705.97	699.40	699.97	0.57	-6.00

Refer to **Exhibit 2** in **Attachment A** for cross-section location and floodplain extents.

## Conclusion

The Mitigation Project improvements were designed to increase channel conveyance along Slick Ranch Creek to reduce the adverse impacts caused by the Channel Project improvements upstream within Tom Slick Park and not cause further adverse impacts to private property or structures. The Mitigation Project allows the Channel Project to meet the no adverse impact criteria, providing flood relief for nearly 150 residents who have experienced flooding from Slick Ranch Creek. Although the combination of the two channel projects exhibit WSE rises downstream from Marbach Rd. to the Leon Creek confluence, those stated rises are contained within the existing Slick Ranch Creek channel banks and current or future drainage right-of-way. Additionally, the Marbach and Pinn bridge crossings are not adversely impacted by the Mitigation and Channel Projects and remain safe. Due to these reasons, we believe that the public, health, safety, and welfare will be preserved if this Variance is granted.

Based on these considerations, acceptance of the proposed Variance Request will allow the Channel Project to be constructed, removing nearly 150 residential structures from flood risk. Additionally, the Variance will allow the Mitigation Project to be constructed and mitigate subsequent adverse impacts to private properties and structures. The public interest underlying the proposed exception outweighs the public interest underlying the particular regulation for which the Variance is granted.

The alternative, should the request not be approved, would be to design additional channel conveyance improvements from Marbach Rd. to the Leon Creek confluence to offset the water surface elevation increases that are currently within the existing channel banks. Awaiting the design

of those additional downstream project would further delay the construction of the Channel Project which is currently funded and has the primary objective of providing immediate flood risk reduction for local residents. Furthermore, securing the millions of dollars necessary to construct the additional channel conveyance project will likely take years to achieve.

Based on the above considerations, the public interest underlying the proposed exception outweighs the public interest underlying the particular regulation for which the Variance is granted. In HDR's professional opinion, the proposed Variance Request remains in harmony with the spirit and intent of the UDC as it will not adversely affect the health, safety, or welfare of the public.

Sincerely,  
HDR Engineering, Inc.



Brandon Hilbrich, PE, CFM (PE# 112938)  
Water Resources Project Manager

cc:

Attachment(s)

1. Project Exhibits

<b><u>For Office Use Only:</u></b>	AEVR #:	Date Received: _____
<b><u>DSD – Director Official Action:</u></b>		
<input type="checkbox"/> APPROVED	<input type="checkbox"/> APPROVED W/ COMMENTS	<input type="checkbox"/> DENIED
Signature: _____	Date: _____	
Printed Name: _____	Title: _____	
Comments: _____	_____	
_____		



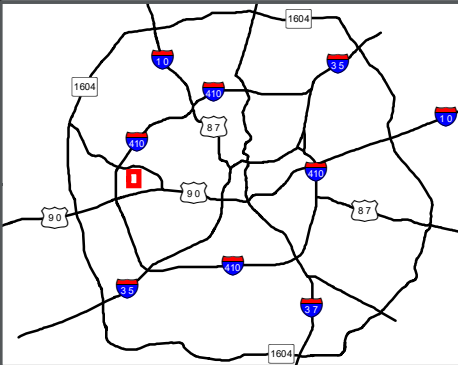
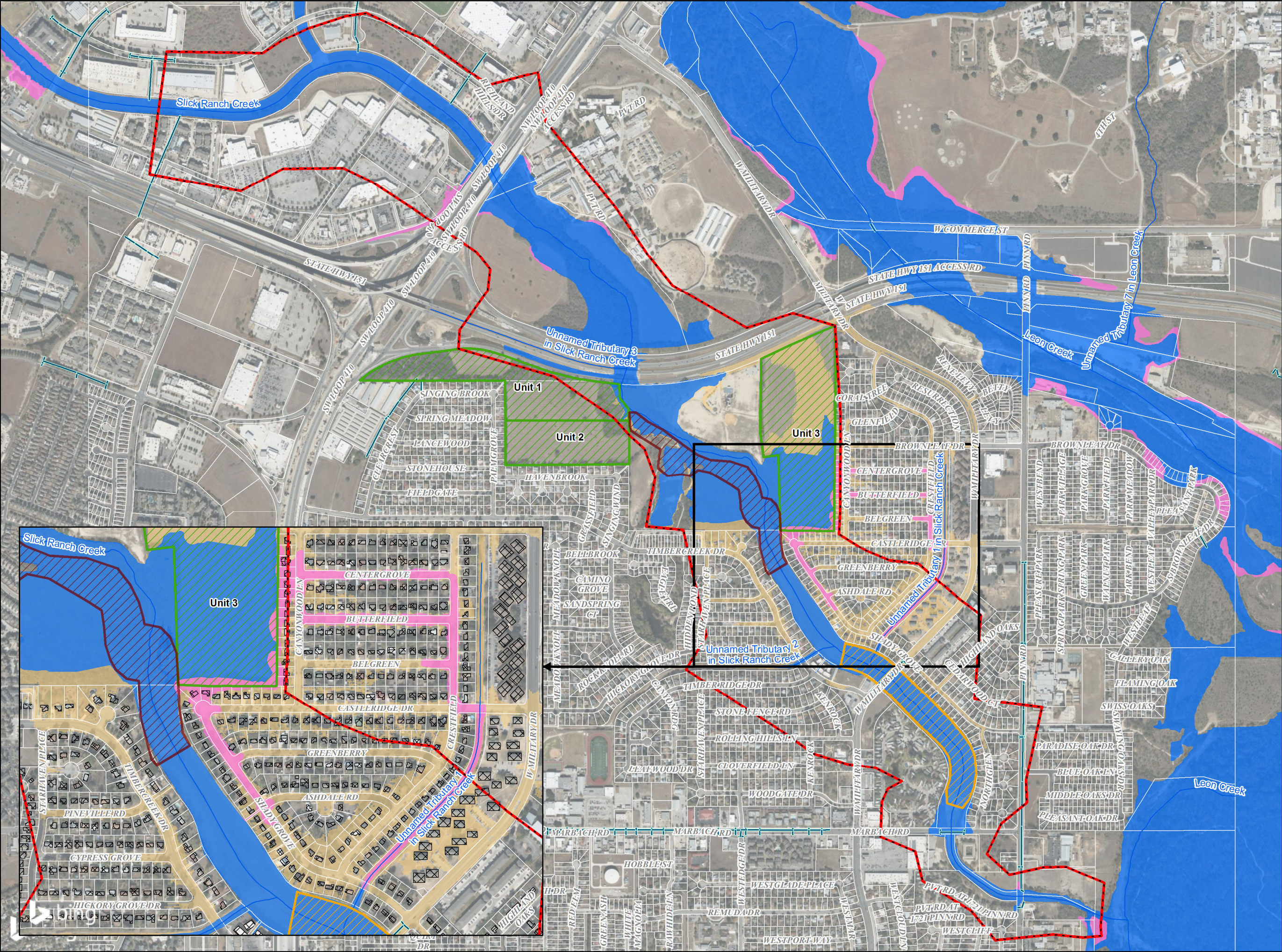


## Attachment A: Exhibits

Exhibit 1: Project Location Map

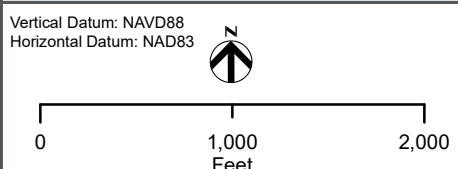
Exhibit 2: Floodplain Comparison Map





- Legend**
- Streams
  - Project Limits**
    - Project No. 23-01484 Channel
    - Project No. 23-01484 Mitigation
    - Private Development Project
    - Study Limits
    - Parcels (2020)
  - Effective Floodplain**
    - 1% Annual Chance (Fu. Cond.)
    - 1% Annual Chance
  - Revised Existing (2D)**
    - 1% Annual Chance (Fu. Cond.)

DATA: CoSA, BCAD, FEMA, SARA, & TNIRIS  
DISCLAIMER: Data was compiled from the best available sources. No warranty is made for the accuracy or completeness.

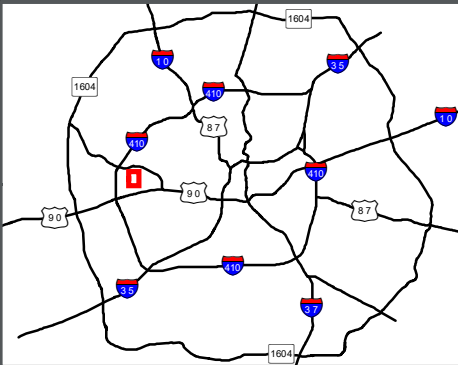
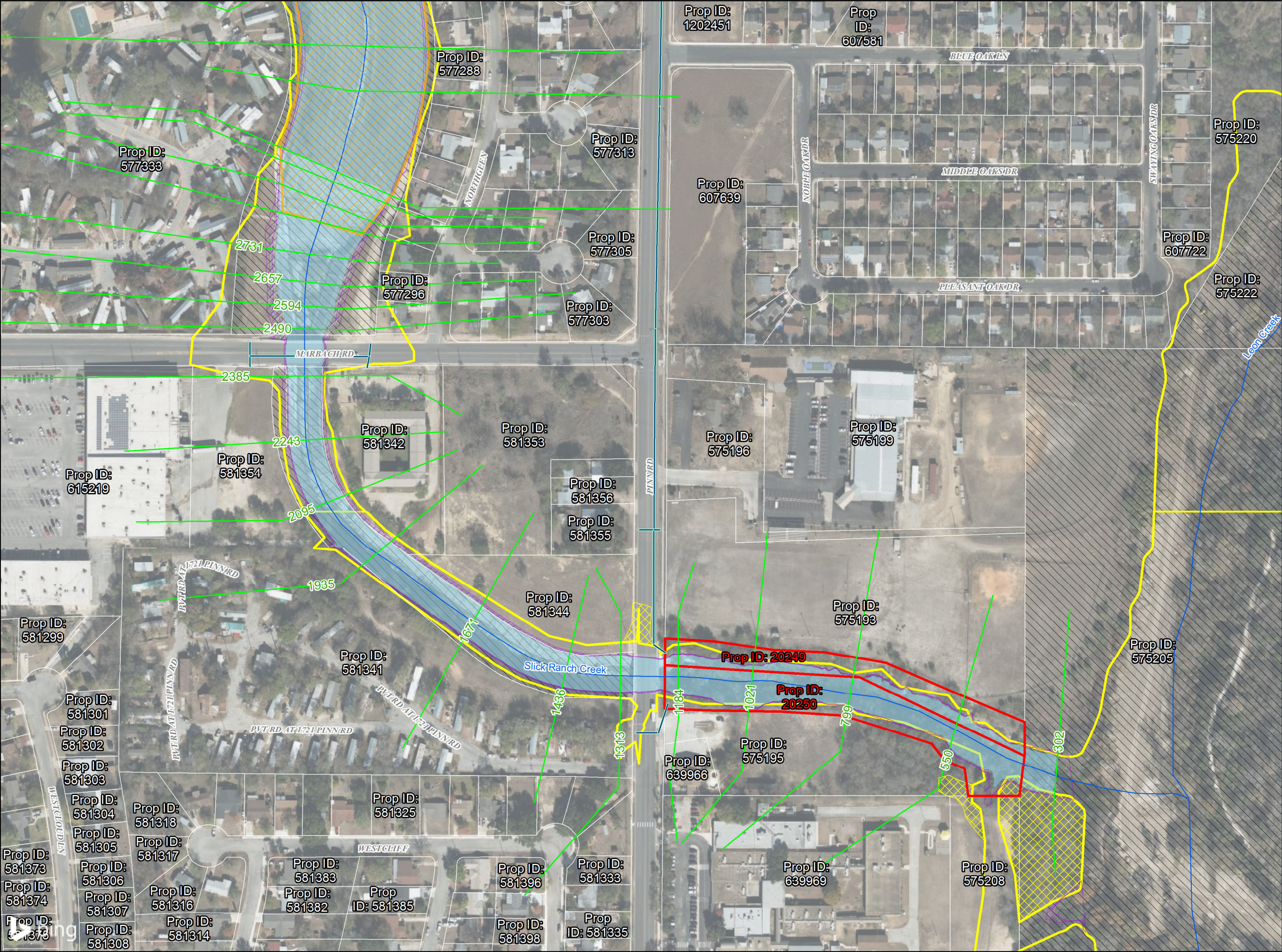


**CASTLERIDGE/SLICK RANCH CREEK  
MITIGATION IMPROVEMENTS**

Variance Request

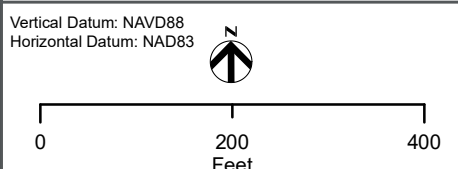
**Project Location Map**





- Legend**
- RAS Cross Sections
  - Streams
  - Storm Drains
  - Project No. 23-01484 Mitigation
  - Study Limits
  - Parcels (2020)
  - City Owned Parcels
  - ROW Acquisition
- Effective Floodplain**
- 1% Annual Chance
  - 1% Annual Chance (Fu. Cond.)
- Project Floodplain**
- Post-Project Conditions**
- 1% Annual Chance
  - 1% Annual Chance (Fu. Cond.)
- Corrected Effective Conditions**
- 1% Annual Chance
  - 1% Annual Chance (Fu. Cond.)

DATA: CoSA, BCAD, FEMA, SARA, & TNIRIS  
DISCLAIMER: Data was compiled from the best available sources. No warranty is made for the accuracy or completeness.



**CASTLERIDGE/SLICK RANCH CREEK  
MITIGATION IMPROVEMENTS**

Variance Request

**Floodplain Comparison Map**

AUG. 2022	EXHIBIT 2
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