DESIGN DOCUMENTATION REPORT

Prepared for:



U.S. Army Corps of Engineers Nashville District

PO Box 1070 Nashville, Tennessee 37202-1070

For Project #325763:

Mill Creek Flood Risk Management

Nashville, TN

Project Sponsor: Metro Water Services

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1. Introduction

Mill Creek project is a 65/35 cost share project conducted in partnership with City of Nashville, Metropolitan Davidson County, Tennessee. PPA was executed on December 15, 2017. The PPA amended on February 13, 2020 to allow for sequential reimbursement to the project sponsor for acquisitions and relocations payments. This updated the standard/model agency Section 205 PPA, and added an "option 6" for early reimbursal for nonstructural projects in excess of 35% LERRD.

2. General Information

Mill Creek is a CAP Section 205 Project. TPC estimated to be \$12.9M in the 2017 Detailed Project Report. Project entered the D+I phase progressing into nonstructural acquisitions in 2019.

3. Purpose and Scope

The project area is the approved project recommendation of the Mill Creek Feasibility Study dated October 15, 2015. The partnership agreement (PPA) was executed on December 15, 2017, marking the official start to the design and implementation phase. The DPR recommendation is the National Economic Development (NED) Plan. The recommended plan is the NED Plan because it provides the greatest net benefits. The NED also leaves considerably less residual risk in the floodplain than all other plans in the final array.

- The proposed modifications to the Briley Parkway Bridge will lower the elevation of floodwater between 1 and 3 feet in the Space Park, Drummond Drive, Currey Road, and Antioch Pike damage center. This component of the NED plan contains costs and benefits that are entirely contained within the Mill Creek basin portion of the project. Section 3 provides greater detail on the cost and benefit outputs of this component of the plan.
- The buyout and raise in place measures located in every damage center of the watershed will not have a significant reduction in elevation of floodwater, but will permanently remove 44 (42 buyout and 2 raise) repetitive loss homes from recurring future damages and potential loss of life in the highest hazard areas. Per Section 4.6 of the Report, implementation of non-structural measures at individual properties will be dependent on verification of structure characteristics, conditions, and first floor elevations. This data verification will inform the prioritization, consideration, and eligibility for final inclusion for the buyout and elevation projects.

4. Original Project List

The original project list of 42 buyout and 2 elevation is provided on page 3. List includes structure ID, parcel ID, and addresses.

Structure ID	Parcel	Address	Buyout/Raise
		703 CURREY RD	Buyout
		325 E THOMPSON LN	Buyout
		6681 NOLENSVILLE PIKE	Buyout
		6655 NOLENSVILLE PIKE	Buyout
		2214 ANTIOCH PIKE	Buyout
		733 CURREY RD	•
		731 CURREY RD	Buyout Raise
		409 WIMPOLE DR	Buyout
		407 WIMPOLE DR	Buyout
		393 WIMPOLE DR	•
		389 WIMPOLE DR	Buyout
		318 WIMPOLE DR	Buyout Buyout
		319 WIMPOLE DR	•
		317 WIMPOLE DR	Buyout Raise
		302 FINLEY DR	
		244 WILLARD DR	Buyout Buyout
		248 WILLARD DR	Buyout
		301 MARGO LN	Buyout
		213 MARGO LN	Buyout
		209 MARGO LN	Buyout
		201 MARGO LN	Buyout
		4952 PACKARD DR	Buyout
		4950 PACKARD DR	Buyout
		237 MARGO LN	Buyout
		205 MARGO LN	Buyout
		4940 SHIHMEN DR	Buyout
		405 BENZING RD	Buyout
		409 BENZING RD	Buyout
		501 BROOK VIEW ESTATES DR	Buyout
		629 BROOK DR	Buyout
		633 BROOK DR	Buyout
		4976 SHIHMEN DR	Buyout
		60 BENZING RD	Buyout
		408 BROOK VIEW ESTATES DR	Buyout
		421 BROOK VIEW ESTATES DR	Buyout
		90 BENZING RD	Buyout
		88 BENZING RD	Buyout
		86 BENZING RD	Buyout
		84 BENZING RD	Buyout
		82 BENZING RD	Buyout
		452 CEDARVALLEY DR	Buyout
		424 CEDARVALLEY DR	Buyout
		436 CEDARVALLEY DR	Buyout
		432 CEDARVALLEY DR	Buyout
.511210		2.27	,

42 buyout 2 raise

5. Project Modification

a. 432 Cedarvalley Road: REPLACED

- i. Stream: upper Whittemore Branch
- ii. During the implementation phase. First floor elevation data was provided and reviewed against floodplain standard elevations. Floodplain elevation at this location is approximately 588.3. While the low grade / finished grade elevation is 589.6. This water entry level is 1.5' above the standard base flood elevation. And therefore, would be ineligible for buyout and removal due to cost of measure and frequency of flood recurrence and damage. In addition, this property would be considered at low risk when compared to other reaches of the watershed.
- iii. Per Item 7a.ii. of the approved project modification MFR (App A) this property is submitted for removal or replacement in the plan. This property is to be replaced by 5d. (729 Currey Road).
- iv. Property Card:



b. 409 Benzing Road: REPLACED

- i. Stream: upper Whittemore Branch
- ii. During the implementation phase. First floor elevation data was provided and reviewed against floodplain standard elevations. Floodplain elevation at this location is approximately 551.8. While the low grade / finished grade elevation is 553.5. This water entry level is 1.5' above the standard base flood elevation. And therefore, would be ineligible for buyout and removal due to cost of measure and frequency of flood recurrence and damage. In addition, this property would be considered at low risk when compared to other reaches of the watershed.
- iii. Per Item 7ii of the approved project modification MFR (App A) this property is submitted for removal or replacement in the plan. This property is to be replaced by 5c. (727 Currey Road).
 - v. Property Card:

Unofficial Property Record Card

Page 1 of 1

Davidson County, TN Unofficial Property Record Card Assessor of Property GENERAL PROPERTY INFORMATION Map & Parcel; 162 10 0 197.00 Location: 409 BENZING RD Current Owner: WOODS, DAVID MICHAEL & Land Area: 0.24 Acres KATYA E Most Recent Sale Date: 02/15/2017 Mailing Address: 409 BENZING RD ANTIOCH, Most Recent Sale Price: \$183,000 TN 37013 Deed Reference: 20170221-0016937 Tax District: USD Neighborhood: 3929 CURRENT PROPERTY APPRASIAL Assessment Year: 2021 Assessment Classification*: RES Land Value: \$47,000 Assessment Land; \$11,750 Improvement Value: \$150 100 Assessment Improvement: \$37,525 Total Appraisal Value: \$197,100 Assessment Total: \$49,275 LEGAL DESCRIPTION LOT 4 TABITHA HEIGHTS IMPROVEMENT ATTRIBUTES - Card 1 of 1 **Building Type: SINGLE** Rooms: 5 Exterior Wall: FRAME FAM Frame Type: RESD Year Built: 1975 Baths: 1 FRAME Square Footage: 1,725 Half Bath: 0 Story Height: ONE STY Number of Living Units: 1 Fixtures: 5 Foundation Type: FULL **Building Grade: C** BSMT **Building Condition:** Roof Cover: ASPHALT 12.0 WES.

*This classification is for assessment purposes only and is not a zoning designation, nor does it speak to the

legality of the current use of the subject property.

c. 727 Currey Road: ADDED

- i. Stream: Mill Creek
- ii. During the implementation phase this property realized significant risk from flooding during the March 2021 flood event. The property remains at significant risk of recurrence as a floodway property adjacent to 5 year floodplain characteristics.
- iii. Per items 7a and 7b of the approved project modification MFR (App A) this property is submitted for addition to the Mill Creek project. The property carries the requisite aggregation of being floodway and 5-year floodplain approximate. And the structure happens to be contiguous to other properties in the original plan. As the 2019-03 PB provides, this structure can be included in the project via the 'grouping' allowances of the updated agency policy.
- iv. Property Card:

Unofficial Property Record Card

Page 1 of 1

Davidson County, TN Assessor of Property Unofficial Property Record Card

GENERAL PROPERTY INFORMATION

Map & Parcel: 119 08 0 079 00 Current Owner: NWEST, LLC Mailting Address: P O BOX 681054 FRANKLIN.

Mailing Address: P O BOX 681054 FRANKLII TN 37058 Zone: 8 Neighborhood: 3027 Location: 729 CURREY RD Land Area: 1.08 Acres Most Recent Sale Date: 07/28/2021 Most Recent Sale Price: \$277,000 Deed Reference: 20210804-0104740 Tax District: USD

CURRENT PROPERTY APPRASIAL

Assessment Year: 2021 Land Value: \$77,800 Improvement Value: \$319,100 Total Appraisal Value: \$396,700 Assessment Classification*: RES Assessment Land: \$19,400 Assessment Improvement: \$79,775 Assessment Total: \$99,175

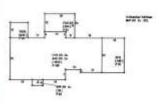
LEGAL DESCRIPTION

LOT 16 SEC 1 GLENCLIFF EST. RE-SUB L. 16 & 17

IMPROVEMENT ATTRIBUTES - Card 1 of 1

Building Type: SINGLE FAM Year Built: 1947 Square Footage: 2,436 Number of Living Units: 1 Building Grade: C Building Condition: Rooms: 7 Beds: 3 Baths: 1 Half Bath: 1 Fixtures: 7 Exterior Wall: STONE Frame Type: RESD FRAME Story Height: 1.5 STORY Foundation Type: PT BSMT Roof Cover: ASPHALT





*This classification is for assessment purposes only and is not a zoning designation, nor does it speak to the legality of the current use of the subject property.

d. 729 Currey Road: ADDED

- i. Stream: Mill Creek
- ii. During the implementation phase this property realized significant risk from flooding during the March 2021 flood event. The property remains at significant risk of recurrence as a floodway property adjacent to 5 year floodplain characteristics.
- iii. Per items 7a and 7b of the approved project modification MFR (App A) this property is submitted for addition to the Mill Creek project. The property carries the requisite aggregation of being floodway and 5-year floodplain approximate. And the structure happens to be contiguous to other properties in the original plan. As the 2019-03 PB provides, this structure can be included in the project via the 'grouping' allowances of the updated agency policy.
- iv. Property Card:

Unofficial Property Record Card

Page 1 of 1

Davidson County, TN Unofficial Property Record Card Assessor of Property GENERAL PROPERTY INFORMATION Location: 727 CURREY RD Map & Parcel: 119 08 0 078.00 Current Owner: WESLEY, TIM Land Area: 0.82 Acres Most Recent Sale Date: 06/17/2021 Mailing Address: 1139 BUCKINGHAM CIR FRANKLIN, TN 37064 Most Recent Sale Price: \$259,000 Deed Reference: 20210708-0092306 Neighborhood: 3027 Tax District: USD CURRENT PROPERTY APPRASIAL Assessment Year: 2021 Assessment Classification*: RES Land Value: \$74,400 Assessment Land: \$18,600 Improvement Value: \$385,600 Assessment Improvement: 596.400 Total Appraisal Value: \$460,000 Assessment Total: \$115,000 LEGAL DESCRIPTION LOT 15 SEC 1 GLENCLIFF ESTATES IMPROVEMENT ATTRIBUTES - Card 1 of 1 **Building Type: SINGLE** Rooms: 7 Exterior Wall: BRICK FAM Beds: 3 Frame Type: RESD Year Built: 1945 Baths: 3 FRAME Story Height: ONE STY Square Footage: 2,262 Half Bath: 1 Number of Living Units: 1 Foundation Type: CRAWL Fixtures: 15 **Building Grade: C** Roof Cover: ASPHALT **Building Condition:** Average 100 EU SO 087 02 02 20

"This classification is for assessment purposes only and is not a zoning designation, nor does it speak to the

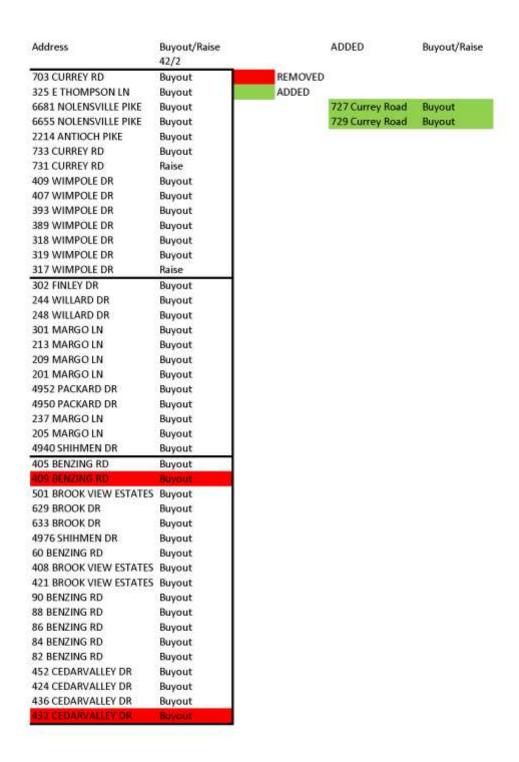
legality of the current use of the subject property.

6. NEPA – Environmental Considerations

The modifications of the two properties listed above replaced low risk minimal elevation flood risk properties on upper tributaries of Mill Creek, with repetitive loss structures on the lower main stem Mill Creek at much higher rate of flood risk recurrence. This modification better allows the project to deliver flood risk management benefits in both economic and life safety, evacuation, and rescue categories. This movement or modification also results in a net gain of 1.30 floodplain/riparian zone acreage by replacing properties 5a and 5b with 5c and 5d. Properties 5a and 5b = 0.6 floodplain/riparian acreage. Properties 5c and 5d =1.90 floodplain/riparian acreage.

7. Updated Project List

As of 3 SEP 2021. This DDR proposed changes to 2 buyout properties in the original list to 2 different properties into the buyout list. There is not net change in the project currently. 42 buyouts and 2 elevations remain the current scope of the project.



Appendix A (Project Modification MFR)



DEPARTMENT OF THE ARMY NASHVILLE DISTRICT, CORPS OF ENGINEERS 110 9TH AVENUE SOUTH, ROOM A-405 NASHVILLE, TENNESSEE 37203

CELRN-PM-P 27 AUG 2021

MEMORANDUM FOR Record, Great Lakes and Ohio River Division, ATTN: CELRD-PDS-P (Mr. Dan Linkowski), U.S. Army Corps of Engineers, 550 Main Street, Cincinnati, OH 45202

SUBJECT: Nashville District Draft Proposal for Design and Implementation Adjustment to Mill Creek (P#325763) Project.

1. Reference:

- Mill Creek, Nashville, TN, Detailed Project Report and Environmental Assessment, dated 7 March 2017.
- Memorandum for Commander, Great Lakes and Ohio River Division, Approval of Mill Creek, Nashville, TN, Detailed Project Report, dated 10 May 2017.
 - c. USACE Planning Bulletin 2019-03, issued 13 December 2018.
- d. USACE Engineering Regulation 105-2-100, Planning Guidance Notebook, Appendix G-13.
- 2. <u>Background</u>: The Mill Creek Chief's Report was approved by Headquarters, U.S. Army Corps of Engineers (HQUSACE) on 15 October 2015. The Mill Creek portion of the Chief's Report was authorized for conversion to the Continuing Authorities Program via Section 1402(a) of the Water Improvements to the Nation Act of 2016. The Great Lakes and Ohio River Division (LRD) approved the Mill Creek Detailed Project Report (DPR) on May 10, 2017. The report recommendation includes the Briley Parkway Bridge and Channel Modification, and the nonstructural plan to buyout 42 residences and elevate 2 residences within the Mill Creek, Sorghum Branch, and Whittemore Branch watersheds. The total project cost is estimated to be \$12.9M, per October 1, 2017 price level. 2017 DPR also provided average annual cost in the amount of \$510,000, and average annual benefits in the amount of \$759,000.
- 3. <u>Project Verification</u>: Per typical process for reports with nonstructural recommendations, the following language was included within Section 4.6 Description of Recommended Plan, "Implementation of non-structural measures at individual properties will be dependent on verification of structure characteristics and first floor elevations."

SUBJECT: Nashville District Draft Proposal for Design and Implementation Adjustment to Mill Creek (P#325763) Project.

- 4. PED Adjustment Considerations: The 2013-2014 base data of the report includes a combination of elevation data, topology, first floor elevations, and first floor certificates from multiple sources, dating to the early 2000s. During the PED phase, the district has determined discrepancies to a small number of residences within the recommended project footprint based on source data and other relevant errata within the report models. The district determines it is necessary to update the feasibility level data to design level of detail. To date, issues have been confirmed with two eligible residences. Recent agency policy changes and project flood risk evidence refocused the efforts to address these issues.
- 5. <u>Individually Justified</u>: The Mill Creek DPR originally proposed nonstructural solutions for 216 residences. The report review and approval process ultimately reduced this down to 89 residences following instruction to only include structures with individual economic justification. That policy has since changed, via Planning Bulletin 2019-03. Individual economic justification is no longer a constraint to plan selection and inclusion in nonstructural projects. Instead, the updated policy is intended to account for logical groupings. Aggregations can be based upon community cohesion, neighborhood aesthetic, housing condition, or project connectivity. In all these considerations, the overall economic justification of the proposal is still essential, however, the sum of the group is measured as a whole rather than each property individually.
- 6. 2021 Flood Disaster Recovery and Risk Management: The March 28-29 flood resulted in major flood levels in the Mill Creek project area, with severe impacts, including multiple fatalities suffered in the greater Nashville community. The project team is in process of evaluating the critical impacts of this event, swift water rescues, floodway risks, and risks to the community and its first responders. In the interest to adjust the project extent to more appropriately consider the flood risk demonstrated by this and prior events, LRN proposes the following reasonable adjustments to the project based on the allowances mentioned above.
- a. LRN expects this change to be limited to a single digit number of structures. At this time, LRN is aware of at least 2 residences that would be recommended for change of treatment, or replacement.
- b. LRN expects that the movement of a small number of homes from buyout to elevate; and the addition of a few structures to the project will not significantly impact the authorized project cost for Mill Creek, which is \$12.9M. In the DDR, LRN will maintain records of the original project recommendation and coordinate all proposed changes with the project delivery team. Potential cost implications will also be documented, while the LRN adheres to the approved project limits as defined by the DPR and PPA.
- Project Inclusion Basis: LRN proposes to base the Mill Creek project PED adjustment by using the same criteria from the original study (Section 4.1.3).

SUBJECT: Nashville District Draft Proposal for Design and Implementation Adjustment to Mill Creek (P#325763) Project.

- a. Per the report, the recommended project includes all homes located in the 5-year event, that had individual positive benefits (plan NS-11).
- i. Original aggregation confirmation: The original plan included structures that demonstrated first floor elevations, footprint, and approximate values within the bounds of the 5year floodplain. Adjustments are proposed where structures fall outside of these 5-year floodplain characteristics.
- The PED adjustment would downgrade from buyout to elevate or replace the individual structure with one that meets the original aggregation, where 2019-03 grouping metrics are now considered.
 - ii. Where the original plan includes structures approximate to the 100' year elevation.
- The PED adjustment would downgrade from buyout to elevate or replace the individual structure with one that meets the original aggregation where 2019-03 grouping metrics are now considered.
- b. This PED adjustment MFR proposes to utilize changes from PB 2019-03 as the basis for project inclusion. PB 2019-03 allows for grouping structures within the project and removes the individual justification requirement. Grouping of structures is now allowed where the aggregation chosen at time of plan selection needs to be consistent with any post report (PED) adjustment. Therefore, LRN proposes to use that original aggregation as the 5-year event plus grouping of adjacent eligible structures to constrain this PED adjustment. Reference Section 4.1 and Table 8 of the DPR for these plan results and parameters.
- c. During design and implementation, LRN would be limited by the original report aggregation method, consistent plan formulation logic, and the adherence to ER 1105-2-100 G-13 guidance. G-13 paragraph 2 provides a project the allowance of scope change "an increase or decrease in scope no greater than 20% of the scope authorized by Congress."
- 8. <u>Documentation of Changes</u>: Given the relatively minor changes proposed to the recommended plan, LRN intends to document the final design and summarize the differences from the recommended plan in the approved DPR/EA in the project's Design Documentation Report. That documentation will include a review from the NEPA biologist PDT of any net positive or negative changes to the open space resulting from these projects. At this time, LRN believes it is highly unlikely that a Supplemental EA would be required given the limited changes. If these changes become more significant, LRN will coordinate with LRD on any additional requirements for documentation and review.

SUBJECT: Nashville District Draft Proposal for Design and Implementation Adjustment to Mill Creek (P#325763) Project.

9. LRN provides this proposal to LRD Planning and Policy Division to ensure vertical alignment with the path forward before any decisions are made to adjust the Mill Creek project.

10. The LRN POC for this action is Thomas Herbert, Project Manager, at (615) 736-7194, Thomas, h. herbert@usace.army.mil.

Daniel P. Linkowski Chief, Planning and Policy Division United States Army Corps of Engineers Great Lakes and Ohio River Division

CARRINGTON.CR Digitally signed by AIG.D.125943148 CARRINGTON.CRAIG.D.12594314

Date: 2021.08.27 11:40:56 -05'00'

Craig D. Carrington, PMP Chief, Project Planning Branch United States Army Corps of Engineers Nashville District

			Owner's Last		Street				Budgeted
#	CD#	Function	Name	Owner's First Name	Number	Street Name	City	PIN Number	Property Costs
U	US Army Corp of Engineers - Mill Creek								
1	31	Remove	Smith	Lonnie Ray ET UX	432	Cedarvalley Drive	Antioch	162 13 0 009.00	\$ 304,350.00
				David Michael & Katya					
2	31	Remove	Woods	E.	409	Benzing Road	Antioch	162 10 0 197.00	\$ 268,440.00
1	16	Add	Wesley	Tim	727	Currey Road	Nashville	119 08 0 078.00	\$ 302,500.00
2	16	Add	NWest, LLC		729	Currey Road	Nashville	119 08 0 079.00	\$ 320,500.00



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

Planning Department Metro Office Building 800 Second Avenue South Nashville, Tennessee 37201

October 11, 2021

To: Peggy Deaner, Metro Water Services

Re: Mill Creek Flood Risk Management Project Amendment

Planning Commission Mandatory Referral #2018M-019PR-002

Council District #16 – Ginny Welsch, Council Member

On behalf of the Metropolitan Planning Commission, the following item, referred to the Commission as required by the Metro Charter, has been recommended for *approval* to the Metropolitan Council:

A request to amend the Mill Creek Flood Risk Management Project (RS2020-191; MWS Proj. No. 18-SWC-136), to remove properties located at 409 Benzing Road and 432 Cedarvalley Drive and to add properties located at 727 and 729 Currey Road (see sketch for details).

The relevant Metro agencies (Metro Parks, Metro Public Works, Metro Water Services, Metro Emergency Communications, the Nashville Electric Service, Metro Finance – Public Property and the Metro Historical Commission) have reviewed the proposal and concur in the recommendation for approval. This request must be approved by the Metro Council to become effective. A sketch showing the location of the request is attached to this letter.

Conditions that apply to this approval: None.

This recommendation for approval is given as set forth in the Metropolitan Planning Commission Rules and Procedures. If you have any questions about this matter, please contact Sharon O'Conner at Sharon.oconner@nashville.gov or 615-862-7208.

Sincerely,

Lucy Kempf, Executive Director Metro Planning Department

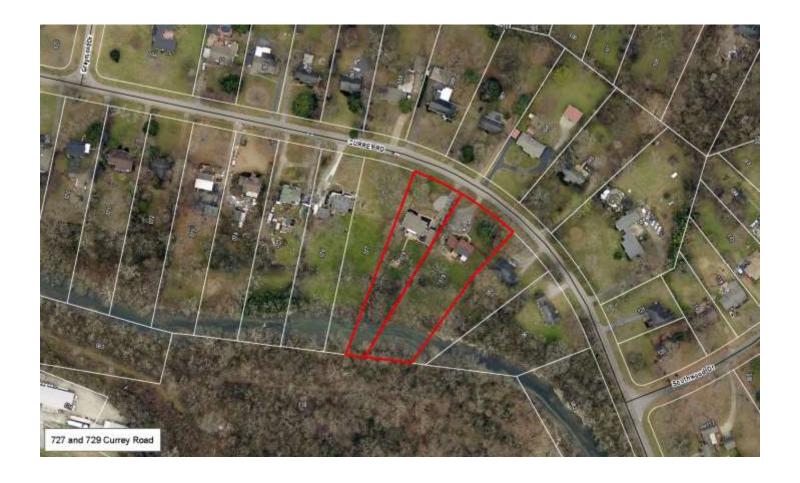
Jucy alden Kerry

cc: Metro Clerk, Elizabeth Waites

Re: Mill Creek Flood Risk Management Project Amendment Planning Commission Mandatory Referral #2018M-019PR-002

Council District #16 – Ginny Welsch, Council Member

A request to amend the Mill Creek Flood Risk Management Project (RS2020-191; MWS Proj. No. 18-SWC-136), to remove properties located at 409 Benzing Road and 432 Cedarvalley Drive and to add properties located at 727 and 729 Currey Road (see sketch for details).



ORIGINAL

METROP	OLITAN COUNTY COUNCIL
Resolutio	on No.
RS2018-144 related to the flood-prone Sorghum Br	n to amend Resolution No. 45 to replace two parcels he acquisition and removal of properties in the Mill Creek, ranch, and Whittemore Branch (MWS Project No. 6 and Proposal Number PR-002)
Introduced	
Amended __	
Adopted _	
Approved _	
Ву	
Metropol	litan Mayor