MEMORANDUM

Project 22103

TO: **Heather Smeltz, P.E. – Natural Resources Conservation Service**

FROM: **Robert Huzjak, P.E. – RJH Consultants, Inc.**

DATE: **6:00 – 8:00 PM, July 18, 2024**

RE: **Development of a Watershed Plan and Environmental Document for the Chiques Creek Watershed Project – Public Scoping Meeting #2**

ATTENDEES:

(SEE ATTACHMENT 1 FOR THE ATTENDANCE LIST.)

This memorandum presents a summary of items discussed during the July 18, 2024 public scoping meeting for the Development of a Watershed Plan and Environmental Document for the Chiques Creek Watershed Project (Project). The meeting was held in person at the Mount Joy Township Building (8853 Elizabethtown Road, Elizabethtown, PA 17022) and virtually using Zoom software. The meeting was recorded using Zoom software. This memorandum is a summary of the meeting and is not intended to be a verbatim account of what transpired in the meeting.

Purpose

The purpose of this meeting was to present the watershed plan concept to the attendees and obtain feedback and recommendations.

Presentation

The presentation was given by the Project Team, which included the National Resources Conservation Service (NRCS), Lancaster County Conservation District (LCCD), RJH Consultants, Inc., and WSP. The attendance list is provided in Attachment 1. The Project Team presented a PowerPoint slide show, included in Attachment 2.

Discussion

An open discussion transpired during and after the presentation. The following sections summarize primary discussion items.

Questions and Answers

Q: Will the watershed planning be completed prior to implementation of the plan?
A: Implementation of the plan follows the planning phase of the project. A key component of the watershed planning process requires a thorough description of how the program would be implemented if funding is received. The project team is currently developing key considerations and recommendations for implementation of the plan; some initial

implementation considerations are provided on the “Implementing the Plan” slide in the presentation.

Q: Will funds be allocated for implementation prior to obtaining volunteers and project sites?
A: Yes, funds are allocated prior to implementation. Volunteers cannot be solicited without prior allocation of funds.

Q: Is there an inventory of projects resulting from the planning and field work that has already been completed? Are there any known volunteers at this time?
A: Work performed on the ten evaluation units (EUs) was purely for data collection and evaluation purposes. Participation in the data collection phase of the project did not imply any landowner consent or commitment to volunteer for the implementation of a project. A ranking process will be developed as part of the watershed plan to select projects among future volunteers. If a landowner from the original ten EUs applied to participate in project implementation, they would certainly be considered for a potential project site.

Q: Does the project have long term data to support the resilience of the land treatment methods proposed in the project design alternatives? Are the designs stable for a generation or more?
A: There are similar legacy sediment projects that have been constructed in Lancaster County (i.e. Big Spring Run) that have been stable and relatively self-sustaining for over 10 years at this time. Applying the appropriate treatment method to each individual site is critical to providing stability and longevity.

Q: Will selection of projects be on a “first-come, first-serve” basis, or based on some other site characteristic? How will potential projects be evaluated for funding and prioritized?
A: A ranking and selection process has not been developed yet but will be developed as part of the Plan-EA deliverable. Consideration will be given to resources prioritized by the public in the initial scoping meeting.

Q: Is the Chesapeake Bay crediting program considered in the project selection process? Crediting is likely to affect project costs.
A: NRCS is unsure how this will affect the selection process at this time.

Q: Is there a financial payment associated with an easement on private property?
A: NRCS is unsure at this time. NRCS would consider if the easement is permanent or temporary, the location and purpose of the easement, etc. in the payment determination.

Q: The presentation stated that a 40 percent reduction in sediment load from the Chiques Watershed is the goal of the project, and that project implementation is projected for 5 to 10 percent of potential project sites in the watershed. Is the project expected to achieve the 40 percent load reduction goal for the watershed?
A: The 40 percent load reduction goal is a from a study performed by the Susquehanna River Basin Commission (SRBC) that concluded the watershed would be considered healthy if sediment loads were reduced by 40 percent. This project is unlikely to achieve the 40 percent load reduction goal but will contribute to some percentage of the overall goal for the watershed. The contribution of this project to the goal will not be quantifiable until the treatment projects are identified and implemented.

Q: Will active management be a component of these projects (i.e. will the team be working to improve project design and implementation as the project progresses)?

A: Yes. Planning, design and construction will likely be occurring simultaneously in the implementation phase as landowners apply and individual projects are identified and advanced.

Q: Will a specific post-monitoring program be developed to monitor progress and benefits as the projects are implemented?
A: SRBC has been monitoring water quality in the watershed since 2015 and will continue to report results. Additionally, NRCS intends to use data from the USGS Super Stream Gage at Marietta to monitor watershed progress before and after implementation.

Q: Is NRCS investigating base-level controls that may be preserving the sites in the watershed that are in relatively good condition (i.e. if a culvert is replaced and the invert/size changes, the site could degrade)?
A: This case would need to be made in the site-specific planning process. If the case is justifiable, the project could be considered.

Q: Can a landowner receive MS-4 credit for a project?
A: NRCS has not ruled this out at this time but is uncertain if this crediting would be applicable.

Commentary and Clarifications

- Either NRCS or LCCD could administer the contract with the landowner.
- Even though part of this project could be implemented using the Environmental Quality Incentive Program (EQIP) payment rates, the PL-566 program offers more funding with less restrictions than an EQIP program at this time.
- Project Sponsors for the PL-566 program are required by law to have the authority to levy taxes and eminent domain authority. However, landowner participation in this project is voluntary, and these authorities do not have to be used to execute this project.
- NRCS will request funding for the design and technical assistance for the project. Design work could be performed by NRCS, LCCD, or an engineering consultant and the design work would be funded by NRCS.
- The project has not yet determined funding sources and cost shares for applicant landowners. The cost share regime could vary by project site and circumstances.
- Donegal Subwatershed is a part of the Chiques Creek Watershed but was not included in this project. NRCS partnered with USGS to install a Super Stream Gage at Marietta prior to this project to monitor pre and post conditions in the Chiques Watershed. The gage is upstream of the confluence of the Chiques and Donegal Creeks, so the Donegal subwatershed was excluded from the project.
- Sedimentation of streams in the Chiques Creek Watershed is caused by erosion during high-energy flows and calving of stream banks during freeze-thaw cycles.
- If an applicant landowner already has a design concept developed for their property that differs from the designs in the watershed plan but meets the criteria of NRCS conservation practices, the project would be considered by NRCS for implementation.
- NRCS does not anticipate that the treatment projects will qualify for wetland banking because of the large percentage of federal funds that would be allocated to the projects.

Recommendations

- If property owners are responsible for annual operations and maintenance (O&M), this cost will likely be a burden and disincentivize participation. Annual payments to

landowners for O&M would largely incentivize participation in the project and maintenance of the treatment projects once installed.
- NRCS should consider compensating landowners (i.e. land lease) if active crop land is reduced or impacted by the treatment projects.

Attachments

Attachment 1 – Attendance List
Attachment 2 – Public Scoping Meeting #2 Presentation

Chiques Creek Legacy Sediment Removal Project

Public Scoping Meeting

July 18, 2024, 6:00-8:00 PM

Mount Joy Township Building
8853 Elizabethtown Road
Elizabethtown, PA 17022

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Meeting Agenda

1. **Welcome**
2. **Meeting Logistics**
3. **Team Introductions**
4. **Program Overview and Goals**
5. **Project Overview**
6. **Next Steps**
7. **Open Discussion**

Meeting Logistics

- Instructions to Meeting Attendees
  - Please sign in on one of the sign in sheets around the room.
- Instructions to Online Attendees
  - Muted upon sign in to the meeting.
  - Please add name, address, and email/phone number to the meeting chat.
  - Chat function is enabled and being monitored.
  - Comments and questions will be addressed at the end.

Introductions

Project Owner

USDA Natural Resources Conservation Service (NRCS)

- Denise Coleman | *State Conservationist*
- Heather Smeltz, P.E. | *Project Lead*

Project Sponsors

Lancaster County Conservation District and Lancaster County, PA

- Christopher Thompson | *LCCD District Manager*
- Matt Kofroth | *LCCD Assistant District Manager*
- Lancaster County Commissioners

Consultant Lead

RJH Consultants, Inc.

- Robert Huzjak, P.E. | *Project Manager*

Environmental Consultant

WSP

- Ghaz Motlagh, P.E. | *Project Manager*

Subconsultant

Water Science Institute, WSI

- Joe Sweeney | *WSI Executive Director*

Why are we here?

- Second of two public meetings.
- Discuss project progress and alternative development.
- Collect input from the public and agencies to help the project owner and sponsors decide how to advance the project.

Can we advance a watershed program?

What will we talk about?

- Project Progress and Work Performed
- Review the Alternatives Considered
- Discuss the Recommended Program Alternative
- Obtain public input/questions

What would a watershed program consist of?

How did we get here?

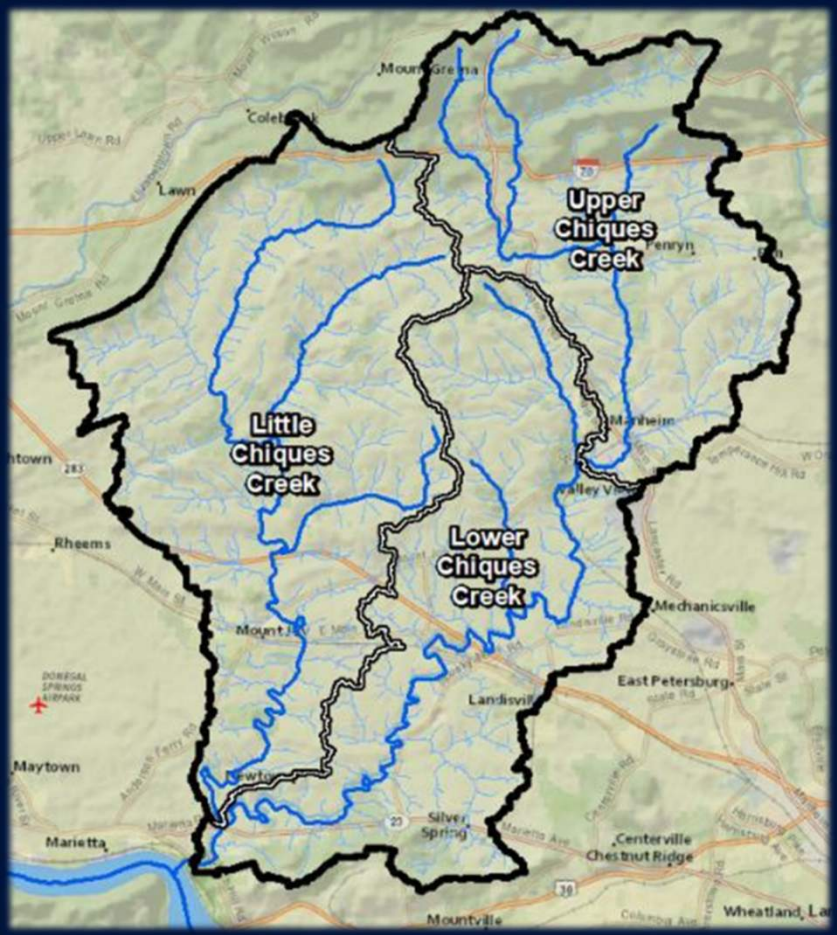
- PL83-566 Watershed and Flood Prevention Act
- Lancaster County and LCCD requested NRCS to address legacy sediment in the Chiques Creek Watershed
- Public and Agency Scoping Meeting were held in 2022

Project Area

The project area is the Chiques Creek Watershed, which is a 110 square mile drainage basin.

The Chiques Creek Watershed is comprised of the Upper, Little, and Lower Chiques Creek drainage areas.

The project is focused on stream corridors and riparian areas with legacy sediment.



Project Background

The streams in the Chiques Creek Watershed are stressed by sediment.

Land Use

- Primarily agriculture
- Urban development
- Lack of forest cover

- Siltation
- Streamflow alterations
- Excess suspended sediment
- Nutrient enrichment

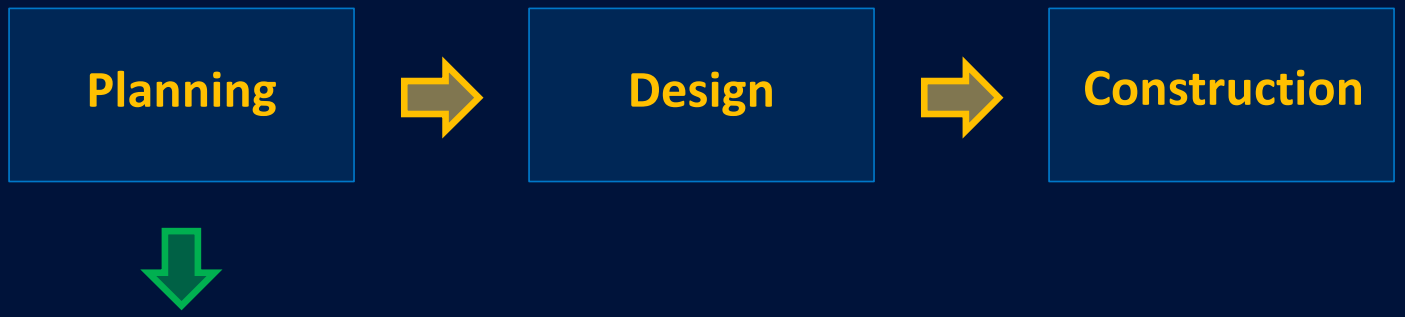
Mill Dams

- 50+ historically present throughout the watershed

- The stream channel has been disconnected from the historic floodplain.

The watershed requires a sediment reduction of up to 40% from the existing baseline to meet the targeted sediment loads.

Watershed Project Planning Process



The following work has been performed in this Watershed Planning phase:

- Collect and analyze watershed data.
- Identify key natural resources.
- Select ten representative Evaluation Units (EUs) from the watershed.
- Collect specific data from 10 EUs.
- Select and develop a treatment concept for each EU.
- Evaluate the benefit-cost of the treatment concepts and recommend a watershed program.

Project Scope and Progress

1. Data Collection and Evaluation
2. Natural Resource Inventory
3. Evaluation Unit Screening and Selection
4. Field Data Collection
5. Land Treatment Project Concepts
6. Develop a Watershed Program

Work performed since last public meeting – we will briefly review this.

Purpose of this meeting – we need your feedback!

Project Scope and Progress

1. **Data Collection and Evaluation**
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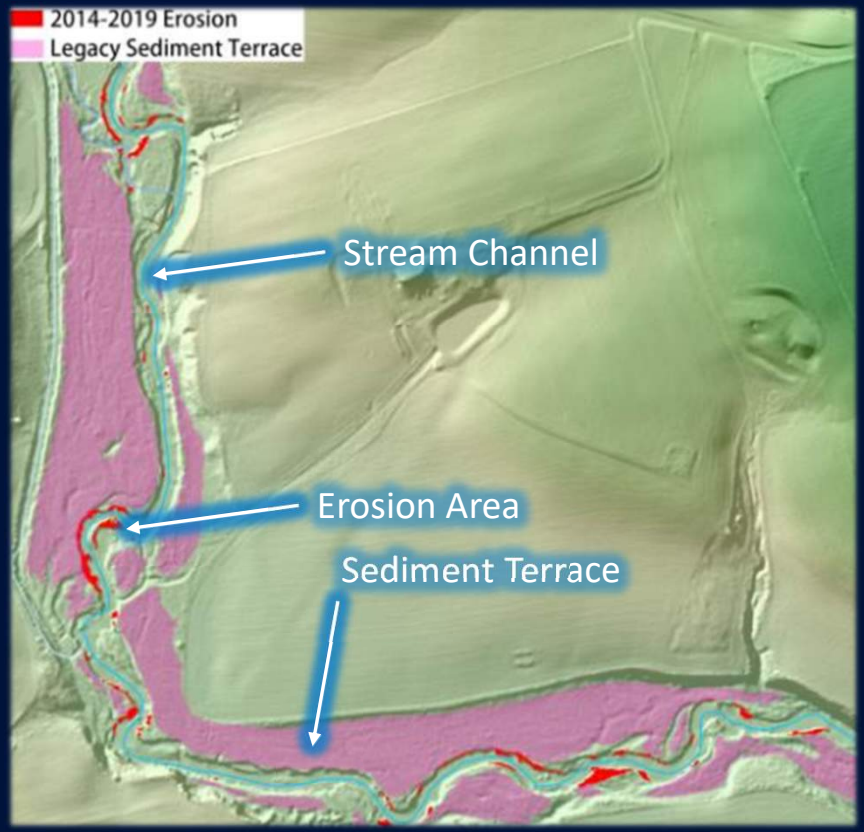
Desktop Study

Characterize stream corridors in the watershed based on the following parameters:

- Sediment terrace volume
- Erosion Rate of the sediment
- Vegetation density in the riparian area
- Historic presence of mill dams
- Stream size and flows

This data was aggregated and used to identify areas that have a large potential for sediment erosion.



Project Scope and Progress

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Natural Resources

Resource feedback collected in July 2022 scoping meetings:

- Identify resource priorities by votes of importance
- Consider how these priorities can be incorporated into project alternatives

Rating Scale

High **Low**

100 **0**

Resource	Agency Meeting Score	Public Meeting Score	Composite Total Score
Floodplains	100	94	98
Water Quality	100	89	95
Riparian Areas	90	100	94
Fish and Wildlife	80	85	83
Water Resources	75	81	78
Regulating Services	75	81	78
Wetlands	95	60	78
Critical Habitat	75	80	78
Invasive Species	70	85	78
Natural Areas	75	72	74
Threatened and Endangered Species	65	80	73
Regional Water Resource Plans	70	75	72
Scenic Beauty	55	83	68
Public Health and Safety	50	88	67
Supporting Services	60	75	67
Forests	65	67	66
Recreation	55	72	63
Scientific Resources	60	63	61
Migratory Birds	55	67	61
Prime and Unique Farmland	45	69	56
Cultural Services	55	50	53
Land Use	50	56	53
Soil Resources	45	56	50
Parklands	40	50	44
Wild and Scenic Rivers	44	0	44
Cultural Resources	35	50	42
Social Issues	40	44	42
Waters of the US	38	0	38
Provisioning Services	30	44	36

Project Scope and Progress

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Evaluation Unit Screening and Selection

Road Map to 10 EUs

+1700 potential EUs

- Sediment Volume
- Erosion Rates
- Vegetation
- Mill dams
- Stream size and flow

55 EUs

- Some of the largest Sediment Volumes and highest Erosion Rates in the watershed

35 EUs

- Diverse sites with varying stream sizes, vegetation densities, and spatial locations in the watershed.

10 EUs – These will be used to inform watershed program development.

- Ten of the 35 landowners allowed property access for field data collection.
- The 10 EUs had diverse characteristics and represented the watershed well.

Project Scope and Progress

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Field Data Collection

Field data collection was performed at the 10 representative EUs.

Data collection included:

- Hand-augering to obtain sediment samples
- Characterization of the sediment
- Site walk and terrace photography
- Wetland and habitat documentation
- Observation of erosion in the stream corridor
- Landowner observations of stream
- Laboratory chemical testing of the sediment to obtain Nitrogen and Phosphorous concentrations

Sediment Characteristics

- **Classification:** Silty Sand, Clay with Sand
- **Nitrogen Concentration:**
  - Minimum: 210 mg/kg
  - Maximum: 1220 mg/kg
  - **Average: 548 mg/kg**
- **Phosphorous Concentration:**
  - Minimum: 0 mg/kg
  - Maximum: 391 mg/kg
  - **Average: 148 mg/kg**
- **Other Contaminants:**
  - No petroleum hydrocarbons
  - Natural concentrations of heavy metals

The sediment meets requirements for “clean fill.”

Project Scope and Progress

1. Data Collection and Evaluation
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Land Treatment Concepts

Remove Sediment and Restore Site

Favorable for sites with the following characteristics:

- Significant legacy sediment accumulation
- High-energy flows and nearly vertical sediment banks
- Poor quality of existing habitat
- Good construction access

Photo from Field Investigation

Land Treatment Concepts

Examples

Remove Sediment and Restore Site

Sediment removal and construction

Big Spring Run Reestablished Floodplain

Land Treatment Concepts

Stabilize Sediment in Place

Favorable for sites with the following characteristics:

- Localized sections of bank eroded by high-energy flows
- Sediment removal limited by confined stream corridor
- Relatively high quality of existing habitat
- Construction access for earthwork would damage existing habitat

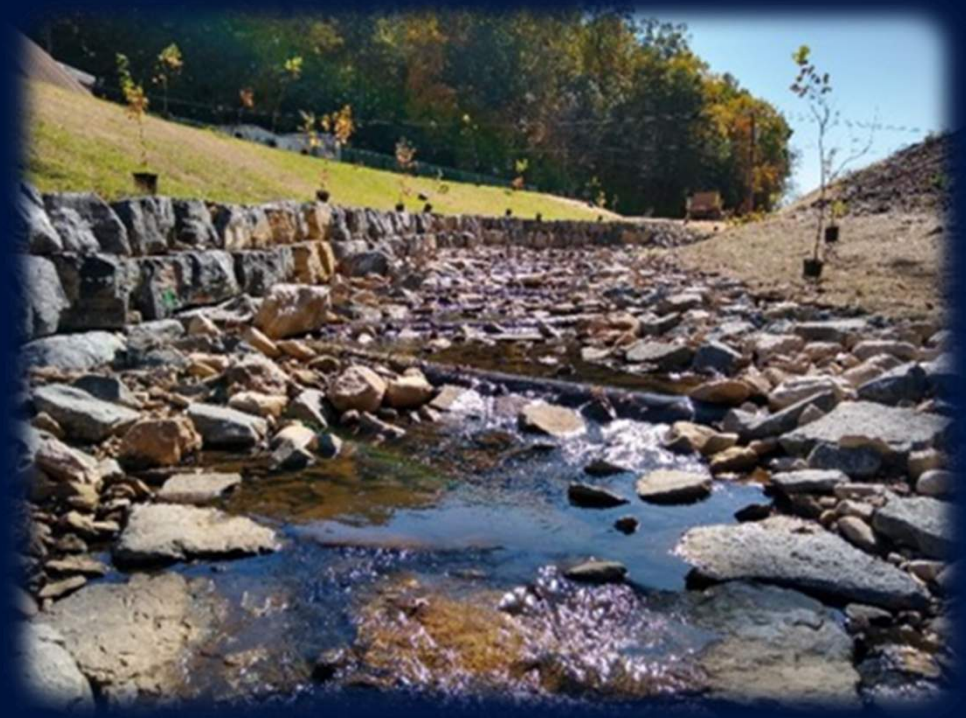
Photo from Field Investigation

Land Treatment Concepts

Examples

Stabilize Sediment in Place

Riprap Bank Protection



Stone Wall

Land Treatment Concepts

Reforest and Reinstall Riparian Buffers

Favorable for sites with the following characteristics:

- The riparian buffer is primarily pasture or grassland
- Groundwater is relatively high
- Hydric soils are present, promoting revegetation
- Riparian root buffer can stabilize sediment

Photo from Field Investigation

Land Treatment Concepts

Examples

Reforest and Reinstall Riparian Buffers

Land Treatment Concepts

Historic Mill Dam Removal

Favorable for sites with the following characteristics:

- Intact mill dam located onsite, releasing accumulated sediment during storm events
- Partially intact or breached mill dam is degrading, frequently releasing large sediment volumes

Examples

- No evidence of intact or breached historic mill dam structures noted in site investigations.
- Watershed mapping data shows some EUs located near a historic mill dam – likely breached and removed.

Stock Photo

Land Treatment Concepts

Do Nothing

Favorable for sites with the following characteristics:

- The stream is healthy with minimal erosion
- Minimal sediment accumulation
- Threatened or endangered species may be present onsite
- Construction access may be limited
- High quality of existing habitat or wetlands
- Intervention would damage existing habitat for minimal benefit

Examples

- Doing nothing was recommended for one EU
  - Quality habitat and wetlands were observed
  - Potential T&E species onsite
  - Minimal erosion was observed

Photo from Field Investigation

Land Treatment Concepts

Combination of Treatment Concepts

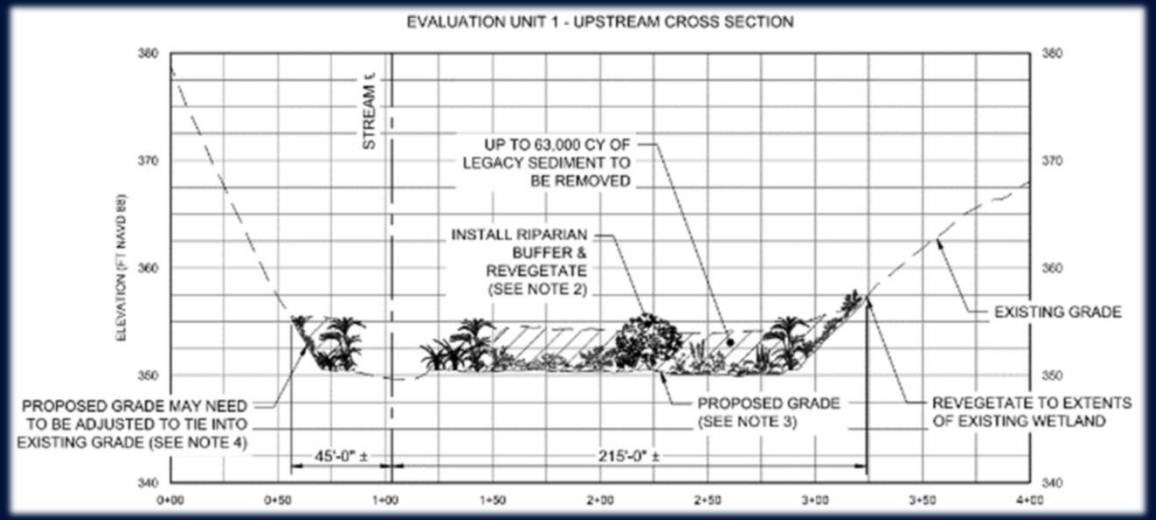
Favorable for sites with the following characteristics:

- The stream corridor has varying characteristics throughout the site, and a composite of the previous solutions would be applicable

Photo from Field Investigation

Land Treatment Concepts

EU	Legacy Sediment Treated (CY)	Recommended Treatment Alternative
EU 1	63,000	Legacy sediment removal and site restoration
EU 2	65,000	Legacy sediment removal and site restoration
EU 3	40,000	Legacy sediment removal and site restoration, reforest/install riparian buffer
EU 4	43,000	Legacy sediment removal and site restoration
EU 5	27,000	Legacy sediment removal and site restoration, reforest/install riparian buffer
EU 6	19,000	Do nothing
EU 7	17,000	Reforest/install riparian buffer
EU 8	23,000	Legacy sediment removal and site restoration, reforest/install riparian buffer, stabilize legacy sediment in place
EU 9	32,000	Legacy sediment removal and site restoration, reforest/install riparian buffer, stabilize legacy sediment in place
EU 10	12,700	Reforest/install riparian buffer



Planning Scope

1. Data Collection and Evaluation
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Evaluate Project Concepts

Project concepts were evaluated based on a benefit-cost analysis.
There are quantifiable and non-quantifiable costs and benefits.

Costs

- Estimated cost to install land treatment project
- Construction impacts
- Cultural resource impacts

Benefits

- Estimated benefit from sediment and nutrient removal
- Reduction of land lost to erosion
- Wetland or Floodplain Restoration
- Core Habitat Restoration
- Recreational benefit
- Water Temperature Regulation
- Carbon Sequestration
- Access to Waterways
- Property Feature Maintenance

Benefit-Cost Summary for 10 EUs

EU	Recommended Treatment Alternative	BC Ratio (50 Year)
EU 1	Legacy sediment removal and site restoration	0.260
EU 2	Legacy sediment removal and site restoration	3.116
EU 3	Legacy sediment removal and site restoration, reforest/install riparian buffer	3.012
EU 4	Legacy sediment removal and site restoration	0.677
EU 5	Legacy sediment removal and site restoration, reforest/install riparian buffer	2.025
EU 6	Do nothing	-
EU 7	Reforest/install riparian buffer	0.532
EU 8	Legacy sediment removal and site restoration, reforest/install riparian buffer, stabilize legacy sediment in place	0.195
EU 9	Legacy sediment removal and site restoration, reforest/install riparian buffer, stabilize legacy sediment in place	2.130
EU 10	Reforest/install riparian buffer	0.223

Benefit Cost Ratio

- Average of 1.22 for all EUs
- A “positive” BC ratio is greater than 1, and has benefits that outweigh the costs

Driving Benefit ✚

- Removal of nutrients (N and P) from the stream

Driving Cost —

- Removal and disposal of legacy sediment

Developing a Watershed Program

- Estimated project implementation rate: *5 to 10% of potential stream miles*
- Based on initial screenings:

Land Treatment Concept	**Potential Stream Miles in Watershed** (total length that the concept is likely applicable)	**Applied Stream Miles** (estimated length that the concept would be implemented)
Do Nothing	50 – 70	4 – 6
Riparian buffer installation	50 – 70	4 – 6
Legacy sediment removal, site restoration, and riparian buffer installation	20 – 30	1 – 2
Legacy sediment removal, site restoration, riparian buffer installation, and stream bank stabilization	30 – 50	2 – 4
Legacy sediment removal and site restoration	40 – 50	3 – 6
TOTAL STREAM MILES:	**230**	**20**

Developing a Watershed Program

Based on the work completed, there are projected positive impacts to the watershed for legacy sediment treatment.

NRCS recommends that the Lancaster County Conservation District and Lancaster County Commissioners move forward with a program to provide funding for technical and financial assistance to treat Legacy Sediment within the Chiques Creek Watershed.

What does that look like?

Implementing the Plan

- Co-administered by LCCD and NRCS
- Funding source for only those treating Legacy Sediment
- ***Roughly*** $10 million (?) available
  - 5-year sign up, 10-year total program
- Must implement one listed NRCS Primary Conservation Practice
- Goal is 75%-90% Incentive Payment for Construction
  - Same rates as Environmental Quality Incentive Program (EQIP)

Practice Code	Primary Conservation Practices
390	Riparian Herbaceous Cover
391	Riparian Forest Buffer
395	Stream Habitat Improvement and Management
396	Aquatic Organism Passage
500	Obstruction Removal
580	Streambank and Shoreline Protection
584	Channel Bed Stabilization
657	Wetland Restoration
658	Wetland Creation
659	Wetland Enhancement

Implementing the Plan

- Voluntary
  - Applicants can be private, business, NGO, or units of government.
- Projects on Private and Public (not federal) would be eligible
  - Current land use not matter (agricultural, park, woods, etc.)
- Minimum of 1,000’ of stream length
  - Ideally treat both sides
- Potential projects will go through site-specific NRCS planning process
  - Including testing of sediment, screening for T&E Species, Cultural Resources, utilities, etc.
- NRCS and LCCD may design, or coordinate the design, of the project.
  - Applicant may be responsible for permitting fees.
  - Applicant may be responsible for providing easements/landrights
- NRCS and LCCD will provide quality assurance during construction.
- Operation and maintenance is the responsibility of applicant/landowner.

Watershed Planning Next Steps

- Sponsors Decide on Programmatic Alternative
- Finalize the Programmatic Plan
- Prepare Draft Plan EA
  - Public Comment
  - Finalize Alternative
  - Prepare Final Draft Plan EA
  - Reviews
- Response to Comments/Finalize EA
- Request for Authorization of Program Funding

Planning Schedule

Select 10 treatment project sites.	December 2022	Complete
Conduct site reconnaissance.	January 2023	
Evaluate treatment alternatives.	2023 to June 2024	
Second Public Meeting	July 2024	
Public review of draft documents.	Winter-Spring 2025	Future
Public review of final documents.	Summer 2025	
Planning Completion	Summer 2025	

Closing Comments

Final Thoughts

- Planning phase of a bigger project.
- Schedules and timelines are targets, not rigid.
- The project is intended to reflect the values and opinions of the local agencies and community whenever possible.

Contact Information

Heather Smeltz, NRCS

Email: heather.smeltz@usda.gov

Phone: (717) 237-2214

Matt Kofroth, LCCD

Email: mattkofroth@lancasterconservation.org

Phone: (717) 299-5361 ext 2523