Workshop Documentation Annex

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	Rourke,Erik	USACE – Project Manager	Present	(215) 656-6616	
	Sharkey, Drew	Cheltenham Township-Commissioner	dlsharky@cheltenham-township.org.		A
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OK	Wacik, Greg	USACE – Environmental	Present	(215) 656-6561	D
	Yu, Julie	PEMA	7178775-137	(717) 651-2142 45-6	C

A - Yellow
B - Blue
C - Orange
D - Green
E - Purple

	Kirkpatrick, Micah	USACE – Economics		(215) 656-6350	E
	Kirschner, Kim	Cheltenham Township – Deputy Emergency Management Director		267-901-4043	C
	Leatherman, Doug	USACE – Civil Design		(215) 656-6649	A
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	Meyer, Gus	Montgomery County Conservation District	Kristina Henderson	(610) 489-4506 x 22	E
	Montgomery, Amy	Cheltenham Township Interim Engineer			D
	Moore, Bob	USACE – Hydraulics		(215) 656-6684	C
	Murray, Taryn	Michael Baker Jr., Inc.		(215) 430-5514	

A - Yellow
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Initial	Name	Agency/Org	E-mail Address	Tele	Group
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JD	DeAngelo, Jim	Michael Baker Jr., Inc.		(609) 807-9562	
MF	Flemming, Michael	Cheltenham Township – Public Works Coordinator			B
JG	Gillespie, Joy	EPA Region III	Gillespie.joy@epa.gov	(215) 814-2793	B
BH	Havir, Bryan	Cheltenham Township – Township Manager	bhavir@cheltenham-township.org	(215) 887-6200	E
	Haywood, Art	Cheltenham Township – Commissioner			C
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Tookany Creek Flood Damage Reduction Feasibility Study: Plan Formulation Workshop

14 February 2013

A - Yellow

B - Blue

C - Orange

D - Green

E - Purple

	Kevin Magerr	US EPA Reg 3		215 814 5724	E
	Dev Forman	Cheltenham EAC Representative		267-218-2967	D
	Glenn Steele	Abington Resident		215 435 7496	

US Army Corps of Engineers
Philadelphia District

TOOKANY CREEK FLOOD DAMAGE REDUCTION FEASIBILITY STUDY

Glenside Hall

February 14, 2013

9:00 a.m. – 3:00 p.m.

Presenters: USACE – Erik Rourke, Project Manager
USACE – Mike Bartles, Hydraulic Engineer
USACE – Greg Wacik, Biologist
Cheltenham Township – Joe O'Neill, Fire Marshall
Michael Baker Jr., Inc. – Taryn Murray, Outreach Specialist

9:00 a.m.	**Welcome and Introductions**
9:15 a.m.	**Project Overview**
9:30 a.m.	**Existing Hydrologic and Hydraulic Conditions**
9:45 a.m.	**Summary of Flood Related Damages**
10:00 a.m.	**Flood Damage Reduction Measures Overview**
10:15 a.m.	*Break*
10:25 a.m.	**Problem Identification**
10:45 a.m.	**Potential Flood Solutions Brainstorming and Evaluation**
12:00 p.m.	*Lunch*
12:30 a.m.	**NEPA Scoping Process**
12:45 p.m.	**Breakout Session: Development of Alternatives**
2:00 p.m.	**Group Presentations**
3:00 p.m.	*Adjourn*

Project Website:

www.nap.usace.army.mil/Missions/CivilWorks/TookanyCreekFeasibilityStudy.aspx

Group	YELLOW
Project Title	
Project Location	CONFLUENCE OF TOOKANY CREEK & ~~WISSAHICKON~~ SCHOOL BRANCH RUN
Type of flood damage reduction measure	LOW FLOOD WALL OR LEVEE.

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

- CONSTRUCT LOW WALL OR LEVEE ON WEST SIDE OF SCHOOL RD. AT TOOKANY CREEK ALONG ATHLETIC FIELD TO PREVENT OVERTOPPING.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
Cons

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)?* Please provide a brief description for each.

Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

If applicable, give a rough estimate of the level of protection and/or minimization the project will provide. ***For example, a levee may offer protection against a 100-year flood event.***

Feasibility

Please refer to the following formulation criteria definitions to answer questions 1 through 3 below.

Effectiveness– The extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities, as established in the planning objectives.

Efficiency – The extent to which an alternative plan is the most cost effective means of alleviating the specified problems and realizing the specified opportunities as established in the planning objectives, consistent with protecting the nation's environment.

Acceptability – The workability and viability of the alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies.

1. How would you rate the **effectiveness** of the project? *(1 being ineffective and 10 being extremely effective)*

   1 2 3 4 5 6 7 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   1 2 3 4 5 6 7 8 9 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 8 9 10

Group	YELLOW
Project Title	BROOKDALE
Project Location	D.S. OF RICKS MILL BRIDGE TO D.S. OF BROOKDALE CROSSING.
Type of flood damage reduction measure	CONCRETE FLOODWALL WITH RETENTION AREA EXCAVATION.

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

1. PURCHASE BACKYARD AREA OF HOMES
2. CONSTRUCT FLOODWALL (7001') TO TIE INTO RICKS MILL RD. EMBANKMENT AND BROOKDALE RD. WALL WOULD BE APPROX. 15' HIGH.
3. REMOVE EXISTING LEVEE ON LT BANK.
4. RETAIN TOOKANY CREEK CHANNEL FOR LOW FLOW.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
Cons

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

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Feasibility

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2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

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3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 8 9 10

Group	Blue (B)
Project Title	Dry dam (retention/detention)
Project Location	* Multi locations → examples below
Type of flood damage reduction measure	in-channel flood storage

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

~~Abington Twp~~

1. Doe lane (Tookany creek)
2. parcel along 309; upstream side of Rt 309
3. W. Waverly; adjacent to H.S. cementary
4. Arcadia
5. G-side elementary school
6. Grove park
7. McDevitt
8. penbryn park (Abington twp)
9. Renninger park
10. ~~[illegible]~~ Burley Park (bird sanctuary)
11. SPS parking lot (Abington
12. G-side Weldon E.S. (Abington twp) 13 * See back

Gabion structure w/ a base flow pipe/culvert (dam) or flood wall

or earthen embankment

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
flood retention/storage
Cons
Stability issue
public perception acceptance (or not)
aesthetics (sp?)
piping failure/undermining
O+M
envirn concerns (fish passage)
Sedimentation
erosion potential D.S.

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description
acquisition rights	permanent easements would be needed
Safety	drowning potential signage
Public perception Aesthetics	
Maintenance	· Sediment / debris removal · Structural integrity / stability
envir concerns	fish passage
Sediment erosion potential	
Several small projects	need multiple projects to get any significant benefit.

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Could be an aesthetic issue. due to the materials being used to construct the dams.

Potential tree removal when installing the structures

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Need to model the usefulness

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

If applicable, give a rough estimate of the level of protection and/or minimization the project will provide. ***For example, a levee may offer protection against a 100-year flood event.***

Feasibility

Please refer to the following formulation criteria definitions to answer questions 1 through 3 below.

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   1 2 3 4 5 6 7 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   1 2 3 4 5 6 7 8 9 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 8 9 10

13 Baeder Woods (Abington twp)

Group Orange	~~Regulating / Implementing CRS~~ Zoning / Regulating / Education
Project Title	"Implementing CRS"
Project Location	
Type of flood damage reduction measure	Zoning, Warnings, Regulating, Education

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

By implementing CRS (Community Rating System) the township can accomplish goals in various areas including zoning, warnings, outreach, education, etc.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros

- Retrofitting + educate people about preferred - home owner education
- Promote Ready Notify - Warning systems - door to door - sign people up (possibly incorporate creek sensors or Rain sensors) - grants?
- Connect existing River guages to Ready Notify (install gauge @ Easton Rd?)
- door to door package of educational materials - @ first interaction
- Face book + social media

Cons

Pros

- institute Regulations (example: make Retention basins handle 100 floods)
  - ↳ more stringent regulations in watershed
- flood education days - partner w/ Library

Cons:

- → every time we add more Regulations cost will increase
- → false alarms on warnings
- → "Requiring" adds cost to Residents

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

- Warnings - positive → Reduce damage + costs
- Education - positive → Reduce damage + costs
- Reduce flood insurance Rates → Huge - very positive

Everyone will save $: you, township, federal, state

Negative → if we enforce Regulations that cost $ to Residents

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

-Warnings → where should sensors go, how much it will cost. possible sirens? connect to existing fire sirens?

Education → ask Residents what information would be most helpful

Regulations: What do we currently have in place?

Costs

Estimate the cost to implement the project (circle one).

(Less than $100,000)

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

→ Most of work would be administrative (printing)

only thing costing $ is warning system

Protection/Minimization

If applicable, give a rough estimate of the level of protection and/or minimization the project will provide. ***For example, a levee may offer protection against a 100-year flood event.***

- Warning system will protect lives of Residents + first Responders
- financial protection: Lower NFIP Rates = more $ in your pocket.

Feasibility

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Acceptability – The workability and viability of the alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies.

1. How would you rate the **effectiveness** of the project? *(1 being ineffective and 10 being extremely effective)*

(1) → (Not going to stop flooding) 2 3 4 5 6 7 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

1 2 3 4 5 6 7 8 9 (10)

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

1 2 3 4 5 6 7 8 9 (10)

Group	Green
Project Title	Rain Barrel/Cistern
Project Location	Township Wide/Watershed Wide
Type of flood damage reduction measure	Local Water Retention

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

- Impervious surface runoff from roofs, parking lots etc. contributes to the overall volume of water in the watershed as well as water quality degradation.

- It reduces the volumes, delays discharge, settles solids & reduces first flush contaminants and allows for groundwater recharge and reuse.

- Project proposes a rainbarrel or cistern (above or underground) for every residence and business (commercial, institutional & industrial) ~~was~~ sized to hold the 1 or 2 year storm event.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
Cons

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)?* Please provide a brief description for each.

Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Education

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

If applicable, give a rough estimate of the level of protection and/or minimization the project will provide. ***For example, a levee may offer protection against a 100-year flood event.***

Feasibility

Please refer to the following formulation criteria definitions to answer questions 1 through 3 below.

<u>Effectiveness</u>– The extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities, as established in the planning objectives.

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1. How would you rate the **effectiveness** of the project? *(1 being ineffective and 10 being extremely effective)*

   Rambarells Castagnias

   1 2 3 4 5 6 7 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   Castagnias Rambarells

   1 2 3 4 5 6 7 8 9 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   Rambarells & Castagnias

   1 2 3 4 5 6 7 8 9 10

Need for education

Group	Green Group
Project Title	
Project Location	
Type of flood damage reduction measure	Bioswales with infiltration pits

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
impervious surface reduced, delays discharge, settles solids & reduces first flush contaminants - cost effective & sustainable - allows for water reuse

Cons
soils may not be sufficient for infiltration, may need amendments

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)?* Please provide a brief description for each.

Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Calculated runoff per sq. ft of impervious surface during selected rainfall event, eg. 2" - 8" / hr. over 24 hr. duration

- cost for neighborhood technology has cost / sq. ft. to install a bioswale.

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

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1. How would you rate the **effectiveness** of the project? *(1 being ineffective and 10 being extremely effective)*

   1 2 3 4 5 6 **7** 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   1 2 3 4 5 6 7 8 **9** 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 **8** **9** 10

Group	Green
Project Title	Canopy Enhancement
Project Location	Township wide/Watershed wide
Type of flood damage reduction measure	Local Water Retention

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

- Tree canopy is capable of retaining up to 2" of rainfall.

- Project is to preserve & enhance the tree canopy throughout the watershed.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
Water quality - reduces sediment to streams
low cost
Twp. just adopted a riparian buffer ordinance
Cons
Time that it will take for the trees to grow & mature

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description
Trees Specifically for urban spaces	Root systems damaging Sidewalks + Roads

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

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Feasibility

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   1 2 3 4 5 6 7 8 **9** 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   1 2 3 4 5 6 7 8 **9** **10**

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 **8** 9 10

Group	Green
Project Title	
Project Location	~~Por~~ Porous Pavement
Type of flood damage reduction measure	Installation of Porous Pavement

Project Description

Provide a detailed description of the proposed project. *(What is the identified problem? How and why does this project provide a solution to the problem?)*

~~[illegible] Septa~~

As new maintenance, projects develop for existing infrastructure the placement should include porous pavements.

Should be focused on larger parking lots & other impervious cover.
- Septa lots
- Schools
- Shopping Centers.
- other municipal uses.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
Reduced Runoff - onsite retaining stormwater
GW Recharge
Beautified area.
Safer - no icing   High capacity for ~~Good~~ Retention
Good for walking paths. ~~ability possibly up to~~ $?

Cons
maintenance Required
upfront cost a bit more - ~ 20% more.
lifecycle cost is less.
Not suitable for large vehicle traffic

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Performance for education purposes
Costs
stand up to large vehicle traffic.

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

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Tookany Creek Flood Damage Reduction Feasibility Study

Potential Flood Damage Reduction Measures
Alternatives Worksheet
February 14, 2013

Group	Green
Project Title	
Project Location	Treatment trains along streams
Type of flood damage reduction measure	

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

Multiple small projects along a single stream that would, together, contribute towards reducing volume & speed of stormwater in that stream.

ex: includes but not limited to.

- small dams
- rain gardens
- stream bank stabilization
- cisterns or basins
- Rain barrel
- swales
- infiltration
- along stretches of streams impacted by excessive storms.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
Cons

Constraints

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Constraint	Description

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

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   1 2 3 4 5 6 7 8 9 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 8 9 10

Group	Purple Group
Project Title	Buyout and Reclamation
Project Location	Brookdale Ave - Priority area 1
Type of flood damage reduction measure	Buyout & Reclamation

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

- Buyout approx 40 homes that have been subjected to repetative flooding on Brookdale ave. The area for buyout would then provide an ideal area for floodplain reclamation/restoration. Then, possibly, install a levee to protect homes that remain (if needed).

This area was the focus of a buyout once before.

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
- has the potential to alleviate flooding issues in other areas of the watershed
- eliminate properties with repetitive loss
- improve safety
- Potential for floodway restoration/reclamation
Cons
- cost of buyout
- The opposition of homeowners not part of buyout

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description
Cost	
Loss of revenue to municipality/School/County	

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

- Down Stream will have positive perspective due to the immediate effects they will see.
- Some of the homeowners within the buyout area may be apprehensive. But more are willing.

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

- Who will buy out, who won't.
- Funding for buyout.

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

If applicable, give a rough estimate of the level of protection and/or minimization the project will provide. ***For example, a levee may offer protection against a 100-year flood event.***

100 year

Feasibility

Please refer to the following formulation criteria definitions to answer questions 1 through 3 below.

Effectiveness– The extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities, as established in the planning objectives.

Efficiency – The extent to which an alternative plan is the most cost effective means of alleviating the specified problems and realizing the specified opportunities as established in the planning objectives, consistent with protecting the nation's environment.

Acceptability – The workability and viability of the alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies.

1. How would you rate the **effectiveness** of the project? *(1 being ineffective and 10 being extremely effective)*

   1 2 3 4 5 6 7 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   1 2 3 4 5 6 7 8 9 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 8 9 10

Group	Purple
Project Title	Buyout
Project Location	High School Rd. (2 Home buyout) - Rock CK.
Type of flood damage reduction measure	Opening up the floodplain / safety

Project Description

Provide a detailed description of the proposed project. ***(What is the identified problem? How and why does this project provide a solution to the problem?)***

Buyout Two homes along Rock Creek.

- Safety concern; Home storm damage
- remove structure from floodway

Pros and Cons

Identify advantages and disadvantages/pros and cons of the project.

Pros
improves Safety
removes structure from floodway
Potential for floodway restoration/reclamation
Cons
•Cost
•Near mouth of CK. So little impact on system
- Flooding from side not creek
- localized
•Revenue loss/Taxes

Constraints

What potential constraints may be associated with this project *(i.e., space, environmental, public perception, overall potential impact, etc.)*? Please provide a brief description for each.

Constraint	Description
COST	

Public Perception

How does your group feel the project will be perceived by the public? Please explain.

Very Supportive
- ½ a double with one side in foreclosure

Data Needs

What additional data will be needed to assess, evaluate, and implement the project?

- Owner of ½ open to sell - Status?
- Avail of Buyout funds

Costs

Estimate the cost to implement the project (circle one).

Less than $100,000

$250,000

$1,000,000

$5,000,000

$10,000,000 or more

Additional Comments:

Protection/Minimization

If applicable, give a rough estimate of the level of protection and/or minimization the project will provide. ***For example, a levee may offer protection against a 100-year flood event.***

Feasibility

Please refer to the following formulation criteria definitions to answer questions 1 through 3 below.

Effectiveness– The extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities, as established in the planning objectives.

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Acceptability – The workability and viability of the alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies.

1. How would you rate the **effectiveness** of the project? *(1 being ineffective and 10 being extremely effective)*

   1 2 3 4 5 6 (7) 8 9 10

2. How would you rate the **efficiency** of the project? *(1 being inefficient and 10 being highly efficient)*

   1 2 3 4 5 6 7 8 (9) 10

3. How would you rate the **acceptability** of the project? *(1 being unacceptable and 10 being very acceptable)*

   1 2 3 4 5 6 7 8 (9) 10