



March 31, 2010

Chief, Water Programs Enforcement Branch Water Management Program US EPA Region 4 Atlanta Federal Center 61 Forsyth Street SW Atlanta, GA 30303 Chief, Environmental Enforcement Section Environmental and Natural Resources Division U.S. Department of Justice Post Office Box 7611 Washington DC 20044-7611

Jeff Cummins, Acting Director Division of Enforcement Department of Environmental Protection 300 Fair Oaks Lane Frankfort, KY 40601

Subject:

Jeffersontown Water Quality Treatment Center

Blending Elimination Plan

Civil Action No. 3:08-cv-00608-CRS

Attention Chiefs and Director:

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has developed this plan to eliminate the practice of "blending" at the Jeffersontown Water Quality Treatment Center (WQTC), in accordance with Paragraph 26 (c) of the Amended Consent Decree filed with the Federal Court on March 9, 2009.

BACKGROUND

Located in eastern Jefferson County, the Jeffersontown WQTC was formerly named the Jeffersontown Wastewater Treatment Plant (WWTP) which is how it is referred to in the Amended Consent Decree. The WQTC is currently rated at 4.0 million gallons per day (MGD) annual average flow. During wet weather events flows to the WQTC can approach 20 MGD, which exceeds both the hydraulic and treatment capacity of the existing secondary treatment process units. To prevent the discharge of untreated wastewater from the headworks of the facility, MSD currently provides partial treatment (screening, grit removal, primary sedimentation) to a portion of the wet weather flows, and then "blends" this partially treated flow with effluent from the secondary treatment process. The blended flow is then disinfected by ultra-violet light and discharged to Chenoweth Run.

Requirements of the Amended Consent Decree

While the practice of blending reduces pollutant discharges during wet weather flows, regulatory agencies have determined that the routing of flows around the secondary treatment system does not meet the intent of the regulations enforcing the Clean Water Act. To address this, the Amended Consent Decree Paragraph 26 (c) requires:



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"...appropriate alternatives for both the complete elimination of the Jeffersontown WWTP and long term upgrades to the Jeffersontown WWTP should elimination not be practical or achievable."

"... expeditious implementation and completion schedules not extending past December 31, 2015..." and,

"No later than March 31, 2010, MSD must select and commit to perform pursuant to this Amended Consent Decree one of the alternatives for either the elimination or long term upgrade of the Jeffersontown WWTP...and inform Cabinet/EPA of its selection."

The purpose of this report is to document the process used to select the approach for eliminating blending at the WQTC, and to describe the approach and the schedule for implementing.

Comprehensive Performance Evaluation and IOAP

The Comprehensive Performance Evaluation (CPE) performed for the Jeffersontown WQTC in 2009 evaluated a number of plant upgrade alternatives to eliminate blending. The Integrated Overflow Abatement Plan (IOAP) incorporated the preferred plant upgrade alternative into an overall evaluation that also considered eliminating the Jeffersontown WQTC and diverting flows to other locations for treatment and discharge. The IOAP found that complete elimination of the WQTC was both practical and achievable, and recommended an approach that pumps flow to the Hikes Lane Interceptor. Dry weather flow is then routed to the Morris Forman WQTC, and wet weather flow can be routed to the Derek R. Guthrie WQTC.

When this plan was presented to the public during review of the final draft IOAP, strong reaction was received from residents of southwest Jefferson County, suggesting that MSD re-consider sending all wet weather flows to the Derek R. Guthrie WQTC. MSD agreed to investigate refinements to the blending elimination plan and review the final recommendation prior to committing to an approach as required by the Amended Consent Decree.

EVALUATION OF ALTERNATIVES

The evaluation process used to select the final approach to eliminate blending at the Jeffersontown WQTC is documented in the following text.

Decision Process

During development of the IOAP, MSD developed a decision model based on a risk-management approach to protecting key community values as identified by the Wet Weather Team Stakeholder Group. This decision model was used to evaluate, select, and prioritize the projects required to mitigate sewer overflows. This decision model was well received by stakeholders, regulators, and the general public. It was determined that a similar process would be used to select the final blending elimination approach as well.

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The decision model used in the Jeffersontown WQTC blending elimination evaluation uses the same set of values as the IOAP. Most of the performance measure evaluation scales and scoring criteria were also retained, with a few exceptions that recognize the differences in the decision required in the blending elimination evaluation. For example, in the Eco-Friendly Solutions value, the IOAP performance measures include a factor that assigns benefit points for alternatives that reduce overall pollutant loadings in the watershed. To better differentiate between blending elimination alternatives, this performance measure was modified to assign benefit points based on how much of the effluent load was diverted to the Ohio River, as compared to diversion to other discharge points still within the overall Floyd's Fork watershed of which Chenoweth Run is a part. As a result of these changes, the benefit scores calculated in this evaluation cannot be used to compare projects described in this report with projects described in the IOAP. The benefit scores used in this report can only be used to compare the alternatives described herein.

Similarly, the project costs for the IOAP were developed using a standardized cost model useful for planning-level estimating. Projects in this report used the IOAP cost model where appropriate, but some components such as pipe lining could be more accurately estimated using unit prices from recent MSD bids. As a result, the costs shown herein cannot be directly compared to costs in the IOAP, and are referred to as "comparative" to clarify their intended use for alternative evaluation.

Public Input on Blending Elimination Alternatives

After development and evaluation of the alternatives, MSD conducted "open house" public meetings in both the Jeffersontown area and in the Valley Station area in southwest Jefferson County. While the meetings did not generate the same level of interest as the previous meetings, residents and other interested parties were able to express ongoing concerns and suggest refinements to the plans presented.

Representatives of the Floyds Fork Future Fund Land Trust (Future Fund) expressed concern about the planned relocation of the proposed "Billtown Road Pump Station" approximately4000 feet south to a more accessible site at Seatonville Road. Figure 1 shows the location of the Billtown Road Pump Station and the boundaries of the proposed service area as defined in the 2000 Cedar Creek Action Plan Update (CCAPU), the currently approved Facilities Plan for the area. Since Future Fund is a non-profit organization formed to purchase land and conservation easements for parks and green space, they are concerned that the relocation of the pump station and the associated expansion of the Cedar Creek WQTC service area could negatively impact their ability to acquire land and easements in the area. While the blending elimination plan may rely on downstream infrastructure provided under the CCAPU, the exact location of the pump station does not impact the blending elimination decision. An update to the Action Plan is currently being prepared that will address potential service area modifications, and providing sewer service to additional properties and potential customers in the watershed. The review process for this Action Plan is the established forum to discuss service area boundaries and pump station locations in the Cedar Creek WQTC basin.

Property owners who live immediately south of the Jeffersontown WQTC along the route of the current Chenoweth Run Force Main noted that Alternative 3 (the lowest cost alternative) showed the elimination of the Jeffersontown WQTC being achieved by a pump station at the current WOTC site

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with a force main pumping south along the same route as the Chenoweth Run Force Main to a connection point with the Cedar Creek WQTC collection system. They questioned if a gravity sewer could be used instead, thereby allowing sewer service to be provided to property south of the WQTC currently served only by septic tanks. A preliminary evaluation of the gravity sewer option showed higher construction costs for the gravity sewer design based on the assumption that the existing force main could be reused for the pumped option. Further evaluation showed that the force main would need to be replaced if the pumped option was selected, resulting in essentially equal construction costs for the pumped and gravity options. The gravity option will have lower total present worth costs when operation and maintenance costs are considered. As a result of this evaluation and the public input received at the open house, the connection between the Jeffersontown WQTC site and the Cedar Creek WQTC collection system has been changed to a gravity sewer in the alternatives presented herein.

BLENDING ELIMINATION ALTERNATIVES

Three additional alternative approaches were developed to be compared to the elimination approach presented in the IOAP. The following is a summary of the IOAP solution and the three additional alternatives that were evaluated.

IOAP Approach

The approach presented in the IOAP is illustrated in Figures 2 and 3. Figure 2 summarizes the amount of dry weather flow diverted to the Floyds Fork WQTC and the Morris Forman WQTC. Dry weather flow is used to illustrate the approximate split of flow diversions. Wet weather flow is assumed to be split in approximately the same proportions. As Figure 2 shows, except for a small portion of flow diverted to the Floyds Fork WQTC (an approach common to all Alternatives), all flow is pumped from the existing Jeffersontown WQTC site up to the Hikes Lane Interceptor. Figure 3 shows the preliminary pipe routing used for cost estimating. Table 1 presents the major cost elements and the comparative cost estimate for this approach.

Table 1 - Original IOAP Approach Flows Diverted to Hikes Lane Interceptor									
Main Projects	Description	Com	parative Cost						
J-Town to HLI Improvements (replace interceptor from Grassland area to WQTC, Storage and PS at the WQTC, force main to HLI)	Range of 15"-42" Interceptor Upsize; 5.7 MG Storage; 10 MGD PS; 24" FM to HLI	\$	23,737,000						
Chenoweth Run PS Improvements	2.7 MGD PS; Upsize FM to 12"	\$	2,207,000						
Total:		\$	25,944,000						

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Alternative 1

Alternative 1 differs from the IOAP approach in that a portion of the service area south of the WQTC is diverted to the Cedar Creek WQTC. Figure 4 shows the proportion of flow diverted, and Figure 5 shows the preliminary pipe routing. Note that this alternative is consistent with the concepts contained in the CCAPU as shown in Figure 1. For the purpose of alternative comparison, costs for blending elimination are calculated based on what is specifically needed for Jeffersontown WQTC elimination, or the upsizing required to accommodate WQCT elimination in facilities planned for other purposes (such as serving areas not currently sewered). Costs for facilities such as the Billtown Road Pump Station are not included in the evaluation, except to the extent that they must be enlarged to accommodate the Jeffersontown WQTC flows (as compared to the Hikes Lane Interceptor diversion approach presented in the IOAP). Table 2 presents the major cost elements and the comparative cost estimate for this approach.

Table 2 - Alternative 1 Costs
80% Diverted to Hikes Lane Interceptor
20% Diverted to Cedar Creek WQTC

Main Projects	Description	Comparative Cost		
J-Town to HLI Improvements (replace interceptor from Grassland to WQTC, Storage and PS at the WQTC, FM to HLI)	Interceptor Upsize: 2,613 LF ~ 42"; 1,525 LF ~ 36"; 1,370 LF ~ 24"; 700 LF ~ 15"; 2.3 MG Storage; 10 MGD PS; 32,100 LF ~ 24" FM to HLI	\$	20,596,000	
Upsize Billtown Road Interceptor	4,511 LF ~ 30"; 7,093 LF ~ 24" Chenoweth Run PS Elimination	\$	1,304,000	
Upsize Billtown Road PS & FM	15 MGD PS; 5,814 LF ~ 30" FM	\$	1,811,000	
Upsize Fairmount Road PS Improvements	21.7 MGD PS; 9,935 LF ~ 36" FM	\$	1,526,000	
Total:		\$	25,237,000	

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Alternative 2

Alternative 2 is the only alternative under consideration that keeps the Jeffersontown WQTC in operation (at reduced flows). As shown in Figure 6, the northwest part of the service area is pumped to the Hikes Lane Interceptor from a new pump station site assumed to be located on or near the existing Sanitary Sewer Overflow at Grassland Avenue. The south area is routed to the Cedar Creek WQTC similar to Alternative 1. Approximately 0.8 MGD of dry weather flow continues to be treated and discharged from the current Jeffersontown WQTC, which would require substantial rehabilitation to assure reliable service into the future. Figure 7 shows the preliminary pipe line routing and pump station locations. Table 3 presents the major cost elements and the comparative cost estimate for this approach.

Table 3 - Alternative 2 Costs 55% Diverted to Hikes Lane Interceptor 20% Diverted to Cedar Creek WQTC 25% Continues Treatment at Existing WQTC

Main Projects	Description	Comparative Cost		
J-Town to HLI Improvements (replace interceptor from Grassland to WWTP, Storage and PS at the WWTP, FM to HLI)	Interceptor Upsize: 680 LF ~ 24"; 700 LF ~ 15" 0.54 MG Storage; 10 MGD PS; 25,820 LF ~ 24" FM to HLI	\$	13,460,000	
Jeffersontown WTP Improvements	Equipment Repairs Needed if Plant is kept in Place (This cost needs to be corrected by CH2)	\$	3,000,000	
Pipe Cured In Place Pipe Lining	2,638 LF ~ 36"; 2,836 LF ~ 30"; 172 LF ~24"; 735 LF ~ 18"	\$	2,675,000	
Upsize Billtown Road Interceptor	4,511 LF ~ 30"; 7,093 LF ~ 24" Chenoweth Run PS Elimination	\$	1,304,000	
Upsize Billtown Road PS & FM	15 MGD PS; 5,814 LF ~ 30" FM	\$	1,811,000	
Upsize Fairmount Road PS Improvements	21.7 MGD PS; 9,935 LF ~ 36" FM	\$	1,526,000	
Total:		\$	23,766,000	

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Alternative 3

Alternative 3 is illustrated in Figures 8 and 9. This alternative diverts the northwest area to the Hikes Lane interceptor similar to Alternative 2. In this alternative all remaining flows (except those diverted to Floyds Fork WQTC) are diverted to the Cedar Creek WQTC. The pump station site is anticipated to be located on or near the existing Jeffersontown Municipal Services storage yard. It is expected that a connection will be retained between the pump station diverting flow to the Hikes Lane Interceptor and the interceptor carrying flow south to the Cedar Creek WQTC. This connection will allow MSD more flexibility in flow routing, and allows the option of sending all from this watershed to a new regional treatment facility on the Salt River, should that become available in the future. Table 4 presents the major cost elements and the comparative cost estimate for this approach.

Table 4 - Alternative 3 Costs 60% Diverted to Hikes Lane Interceptor 40% Diverted to Cedar Creek WQTC

Main Projects	Description	Comparative Cost		
J-Town to HLI Improvements (replace interceptor from Grassland to WQTC, Storage and PS at the WQTC, FM to HLI)	Interceptor Upsize: 1,370 LF ~ 24"; 700 LF ~ 15"; 0.8 MG Storage; 10 MGD PS; 28,110 LF ~ 24" FM to HLI	\$	15,014,000	
Pipe Cured In Place Pipe Lining	2,638 LF ~ 24"; 172 LF ~ 18"	\$	268,000	
Upper Billtown Rd Interceptor	8,030 LF ~ 24" Interceptor from Jtown WQTC to Chenoweth Run PS	\$	1,047,000	
Upsize Billtown Road Interceptor	9,179 LF ~ 30"; 2,426 LF ~ 24" Chenoweth Run PS Elimination	\$	1,505,000	
Upsize Billtown Road PS & FM	19.5 MGD PS; 5,814 LF ~ 36" FM	\$	3,194,000	
Upsize Fairmount Road PS Improvements	25.9 MGD PS; 9,935 LF 36" FM	\$	2,227,000	
Total:		\$	23,255,000	

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ALTERNATIVE EVALUATION

Table 5 summarizes the benefit scores, comparative costs, and benefit/cost ratios for the IOAP approach and the three alternatives. Detailed benefit scoring sheets are attached at the end of this report, following the figures.

Table 5 - Cost and Benefit Summary												
	Original IOAP	Alternative 1	Alternative 2	Alternative 3								
Comparative Cost	\$ 25,944,000	\$ 25,237,000	\$ 23,776,000	\$ 23,255,000								
Benefit Score	3,636	3,636	2,826	3,564								
Benefit/Cost Ratio (x100,000)	14.01	14.41	11.89	15.33								

As Table 5 shows, Alternative 3 has the lowest comparative construction cost, and also has the best benefit/cost ratio. This Alternative has an additional benefit not quantified by the benefit/cost evaluation. Since it retains connectivity between the northwest diversion and the southern diversion, it has the potential to make maximum use of a future regional treatment facility on the Salt River should that become available in the future.

At the time this report was prepared, a bill (HB 221) was being considered by the Kentucky legislature that would allow the creation of a regional sewer district to serve the Salt River watershed. If this regional sewer district is formed in the future, MSD would retain the option to include all its Salt River basin facilities within the service area of this new entity.

SELECTED BLENDING ELIMINATION APPROACH

Alternative 3 is the approach selected by MSD to eliminate blending at the Jeffersontown WQTC. It eliminates the WQTC in its entirety, which is clearly the preferred approach stated in the Amended Consent Decree. It is consistent with concepts in the Cedar Creek Action Plan Update, and will be included in the Floyds Fork Watershed Plan Update currently being prepared to update the facilities plans for all WQTCs in the Floyds Fork watershed.

Phasing Plan

Completion of the elimination plan requires coordination with enabling projects in the Cedar Creek WQTC service area. Figure 10 presents the general phasing plan for all the projects required to implement the selected plan.

Schedule

Figure 11 presents the proposed schedule for all the components of the elimination plan. Critical schedule elements include the design and construction of the force main from the new pump station

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assumed to be located at or near the existing Jeffersontown Municipal Services storage yard and the east end of the Hikes Lane Interceptor. The biggest unknowns in this project are issues surrounding land and easement acquisition and permitting of stream crossings etc. MSD plans to complete the components of this plan by the December 31, 2015, requirement for blending elimination, and will be able to complete the elimination in advance of the required date if the force main construction can be completed early.

I certify under penalty of law that this document and all attachments were prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have questions or need additional information, please contact me at (502) 649-3850.

Sincerely,

W. Brian Bingham

Regulatory Services Director

W. Bin B.

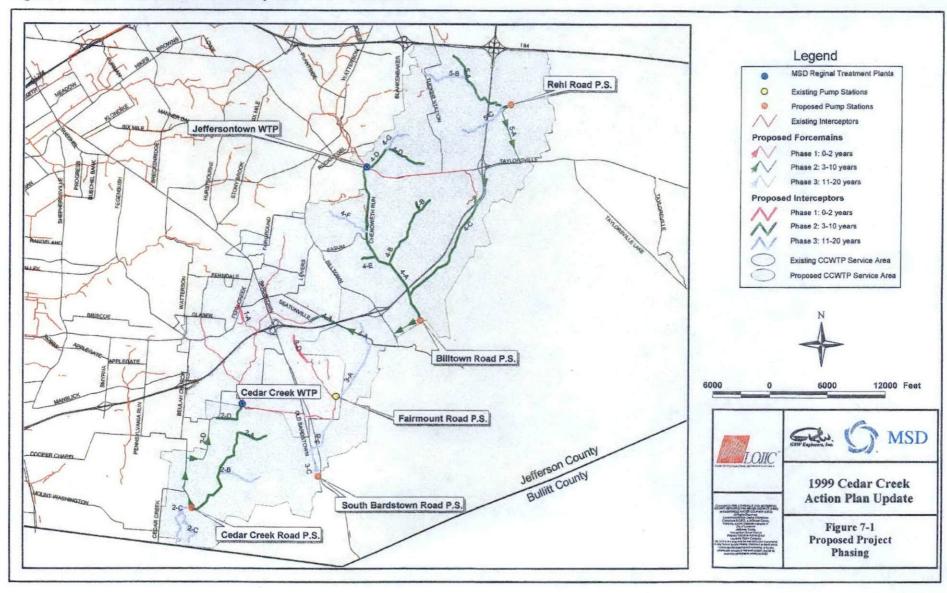
Attachments

cc: H. J. Schardein, Jr.

Paula Purifoy

Laurence J. Zielke

Figure 1 - Cedar Creek Action Plan Update Flow Diversions

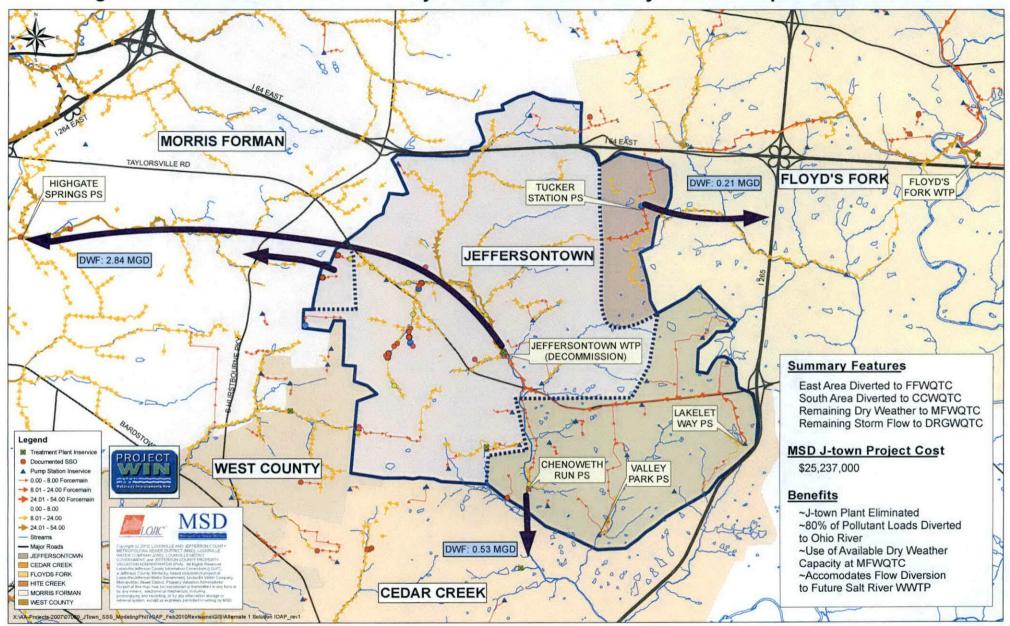


MORRIS FORMAN TAYLORSVILLE RD FLOYD'S FORK HIGHGATE DWF: 0.21 MGD FLOYD'S TUCKER SPRINGS PS FORK WTP STATION PS **JEFFERSONTOWN** DWF: 3.37 MGD JEFFERSONTOWN WTP (DECOMMISSION) TAYLORS WILLE RD LAKELET **Summary Features** WAY PS East Area Diverted to FFWQTC Legend Dry Weather Flow to MFWQTC Treatment Plant Inservice CHENOWETH Storm Flow to DRGWQTC WEST COUNTY Documented SSO VALLEY RUN PS ▲ Pump Station Inservice PARK PS → 0.00 - 8.00 Forcemain MSD J-town Project Cost → 8.01 - 24.00 Forcemain - 24.01 - 54.00 Forcemain \$25,944,000 0.00 - 8.00 **MSD 8.01 - 24.00 24.01 - 54.00** Benefits Streams ~Maximize Use of Dry Weather Capacity at MFWQTC - Major Roads JEFFERSONTOWN CEDAR CREEK ~J-town Plant Elimination FLOYDS FORK HITE CREEK ~95% Pollutant Load Transferred CEDAR CREEK MORRIS FORMAN to Ohio River WEST COUNTY X:\AA_Projects 2007/07089 JTown_SSS_ModelingPhill\GAP_Feb2010Revisions\GIS\Ortiginal Solution IOAP_rev

Figure 2 - Jeffersontown Diversion Projects: Original IOAP - J-Town to HLI

Figure 3 - Jefferson Diversion Projects: Original IOAP - Jeffersontown to HLI Hill Ridge WTP Chenoweth Hills WTP Legend ▲ Pump Station Inservice Treatment Plant Inservice **Proposed Sewers** Force Main Gravity Hikes Lane Interceptor Other IOAP Projects → 0.00 - 8.00 Forcemain → 8.01 - 24.00 Forcemain - 24.01 - 200.00 Forcemain 0.00 - 8.00 Sewer MSD 8.01 - 24.00 Sewer → 24.01 - 200.00 Sewer County Line

Figure 4 - Jeffersontown Diversion Projects: Alternate 1 - Gravity to HLI / Pumped to Cedar Creek



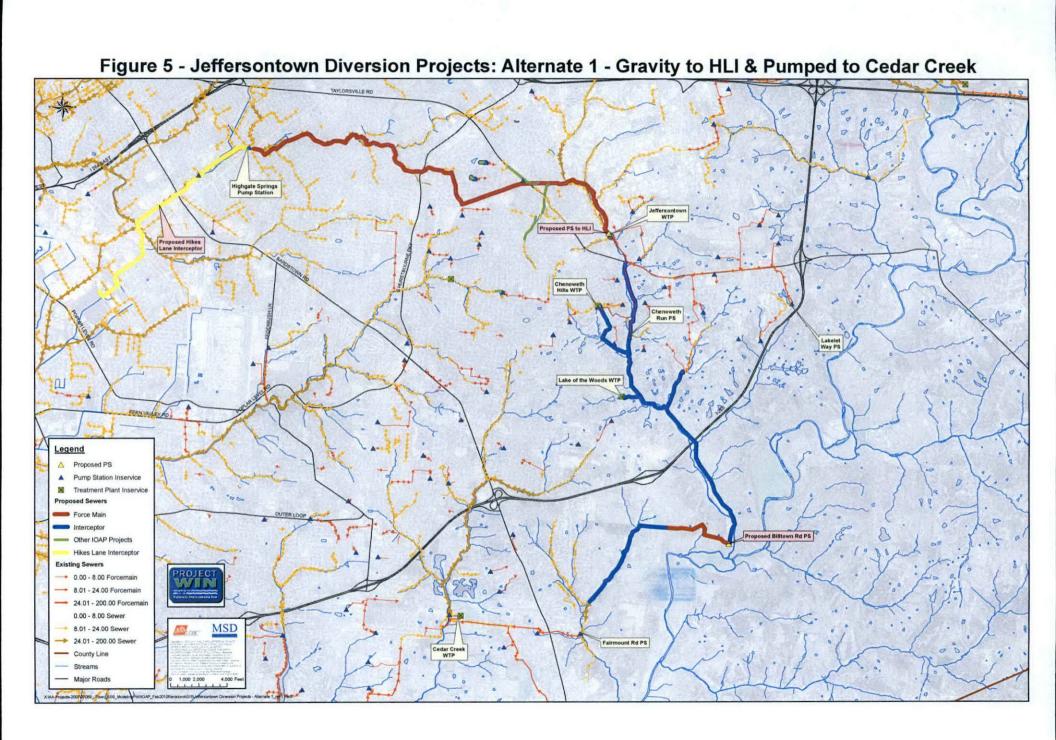


Figure 6 - Jeffersontown Diversion Projects: Alternate 2 - Grassland to HLI / Gravity and Pumped to Cedar Creek

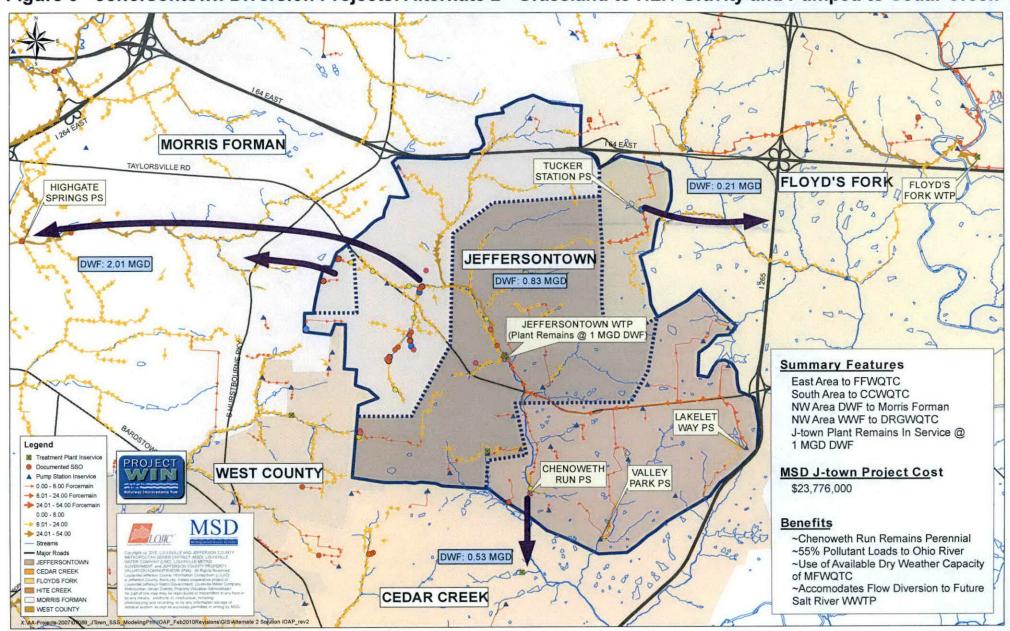


Figure 7 - Jeffersontown Diversion Projects: Alternate 2 - Grassland PS to HLI & Gravity and Pumped to Cedar Creek Proposed PS to HLI Proposed Hikes Lane Interceptor Lakelet Way P5 Lake of the Woods WTP Legend A Pump Station Inservice Treatment Plant Inservice △ Proposed PS Proposed Sewers Interceptor Other IOAP Projects Solutions_Preferred_Slip_Lining Hikes Lane Interceptor → 0.00 - 8.00 Forcemain → 8.01 - 24.00 Forcemain 24.01 - 200.00 Forcemain 0.00 - 8.00 Sewer MSD 8.01 - 24.00 Sewer > 24.01 - 200.00 Sewer Fairmount Road PS Major Roads

Figure 8 - Jeffersontown Diversion Projects: Alternate 3 - Public Works to HLI / Gravity and Pumped to Cedar Creek

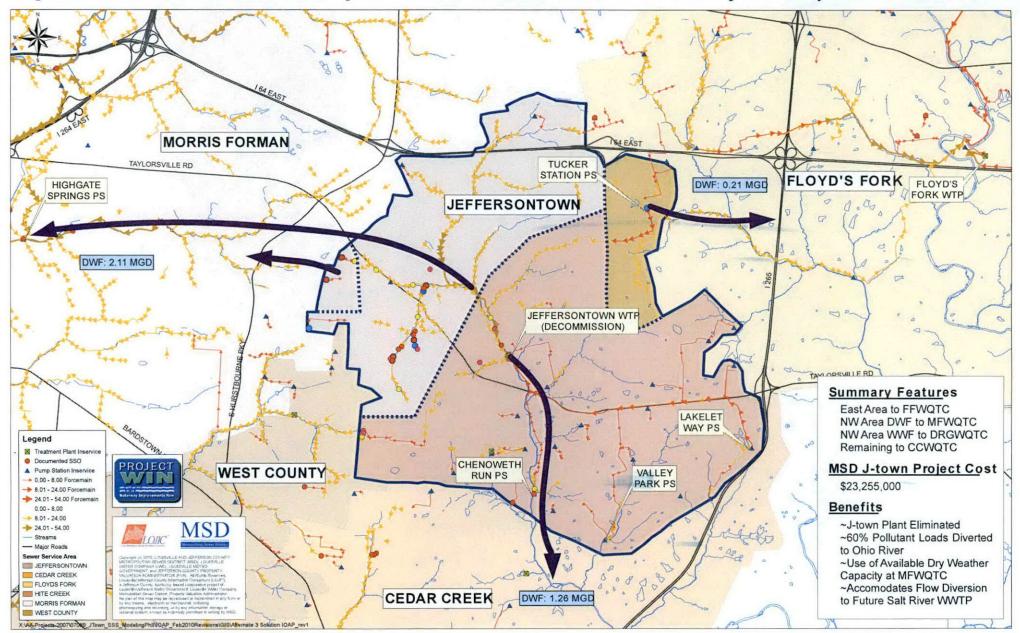


Figure 9 - Jeffersontown Diversion Projects: Alternate 3 - Public Works PS to HLI & Gravity and Pumped to Cedar Creek Proposed PS to HLI Legend ▲ Pump Station Inservice Treatment Plant Inservice Proposed Sewers Force Main Hikes Lane Interceptor Solutions_Preferred_Slip_Lining Other IOAP Projects Existing Sewers - 0.00 - 8.00 Forcemain 8.01 - 24.00 Forcemain 24.01 - 200.00 Forcemain 0.00 - 8.00 Sewer MSD

Fairmount Rd PS

→ 8.01 - 24.00 Sewer → 24.01 - 200.00 Sewer

County Line

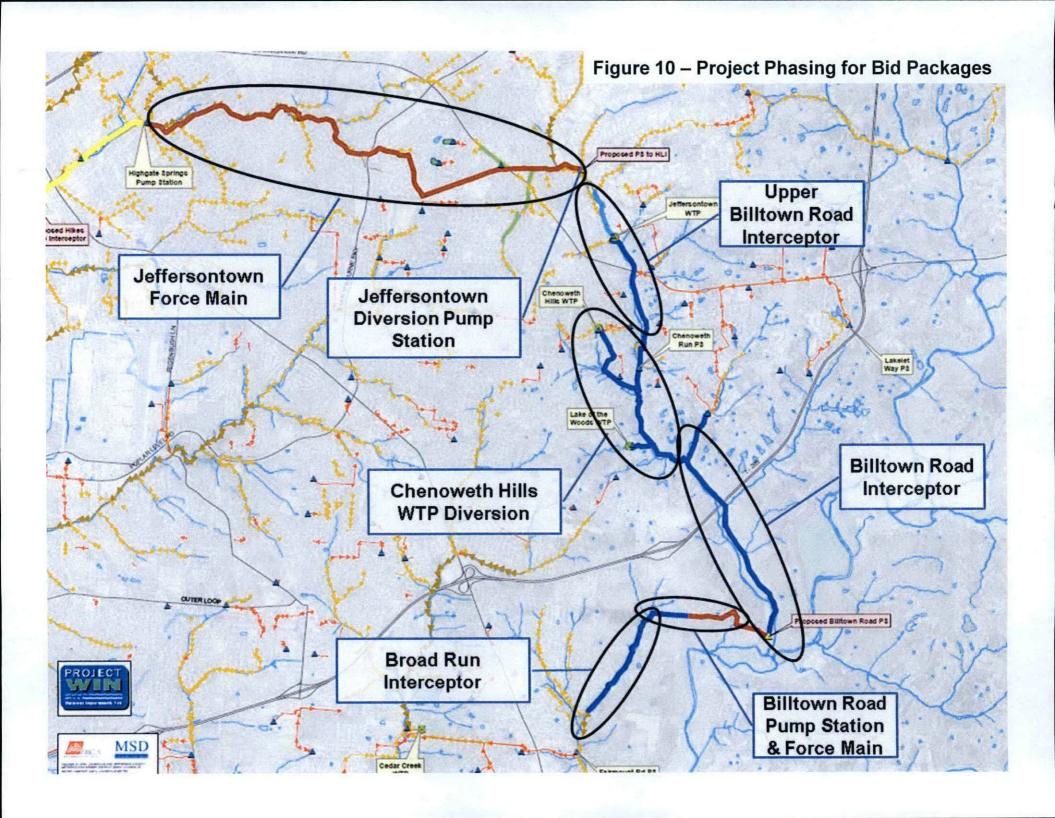
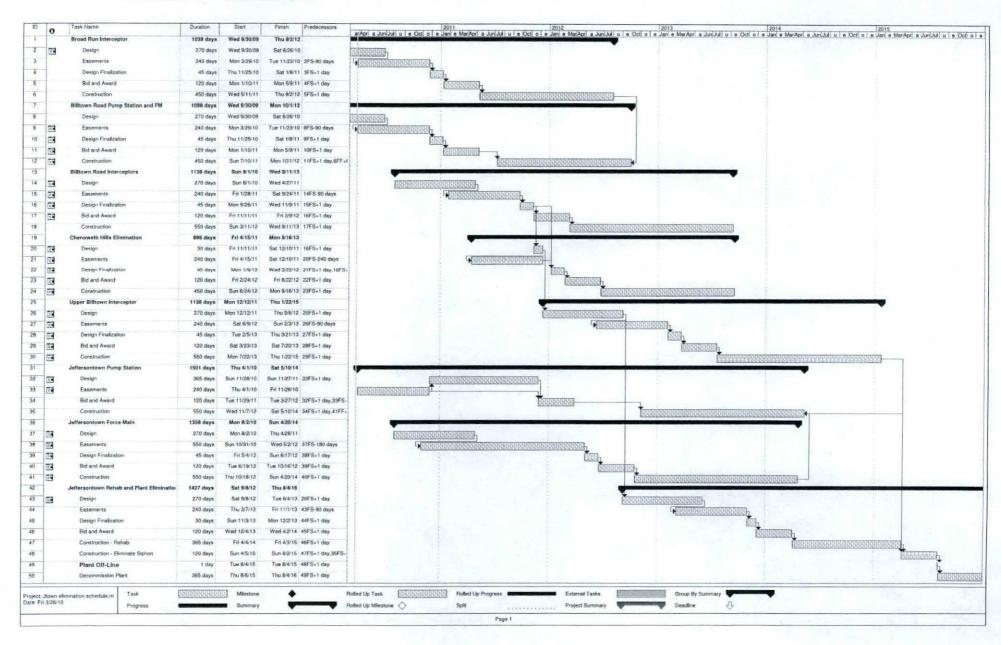


FIGURE 11-SCHEDULE



Attachment

Benefit Scoring Sheets

(References LOC_JT_JT_NB01_Q_Q.xls and LOC_JT_JT_NB01A.xls)

Cluster Comparison

Project #1: S_JT_JT_NB01_01_C_A (Original IOAP)

Raw Benefit Score²

CSO/SSO ID		Regulatory Performance	Public Health	Asset Protection	Environmental Enhance	Eco-Friendly Solutions
ISO28		21	22	10	11	3
28390		5	7	10	11	3
31733		21	20	10	11	3
28395A		5	3	10	11	3
64505		5	3	10	11	3
MSD0255		0	0	10	11	3
28392		0	0	10	11	3
28391		0	0	10	11	3
28173		0	0	10	11	3
64096		21	8	5	4	-4
86052		21	22	5	4	-4
92061		0	0	5	4	-4
MSD0263		21	18	5	4	-4
Weighting Factor		8	10	6	8	6
Weighted Benefit Score		960	1030	660	920	66
Total Benefit Score	3636					
Total Capital Cost ³	27595000					
Total Present Worth Costs ³	2,000000					
Weighted Benefit/Cost Ratio (Capital Costs)	13.1763					
Weighted Benefit/Cost Ratio (Total Present Worth Costs)	#DIV/0!					

Notes:

- 1. Data Input Cells are highlighted in yellow
- 2. Raw Benefit Scores for Regulatory Performance and Public Health values are from the CSO or SSO Level of Control Benefit Sheets
- 3. Capital and Total Present Worth Costs from the "Proj Summary" Page of the Cost Model for the clustered alternative

JT_NB01_BCA_Q_Q.xls)

2-Year	Jeffersontown Blending Elimin	ation Plan - Original IOAP, A	Alternatives 1, 2, 3 (all the same)
Value: Regulatory	Performance - SS0s		
Measure	Impact / Frequency	Rationale	Measurement Method

	Measure		In	npact	/ Freq	uency		Rationale	Meas	urement Met	hod
Performanc e Measure	SSOs	6 month	1 Year	2 Year	5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO disc		c models to
	Value	25	12	0	4	1	0				
	ISO28	BL			PR		- FeV		25	4	21
	28390			BL	PR				9	4	5
>	31733	BL			PR				25	4	21
enc	28395A			BL	PR				9	4	5
Frequency	64505			BL	PR				9	4	5
T.	MSD0255						BL		0	0	0
	28392						BL		0	0	
	28391						BL		0	0	
	28173						BL		0	0	
ote - This v	alue sheet calcula	tes the tota	l benefit.						F		

	Measure		In	npact	/ Freq	uency		Rationale	Meas	urement Met	hod
Performanc e Measure	SSOs			5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement methods will be via hydraulic models			
	Value	25	16	9	4	1	0	1. 2			
ıcy	64096	BL			PR				25	4	21
Frequency	86052	BL			PR				25	4	21
rec	92061						BL	54 45-	0	0	0
ш	MSD0263	BL			PR				25	4	21

/alue:	Public Hea	alth Enhar	cement -	SSOs				AP, Alternatives 1, 2, 3 (all t			
	Measure			Release	e Impact			Rationale	Measurement Method		
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gais	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a e distance from	
>	6 Month	25	20	15	10	5	0	Releases 900,000 gallons	25	0	25
Frequency	1 Year	20	16	12	8	4	0	Releases 2,000,000 gallons	20	0	20
ä	2 Year	15	12	9	6	3	0	Releases 3,080,000 gallons	15	0	15
9	5 Year	10	8	6	4	2	0	Releases 4,600,000 gallons	10	6	4
ш	10 Year	5	4	3	2	1	0	Releases 5,720,000 gallons	5	4	1
te - This value s eximum score of Acronyms	hoot calculates the aver 25.	rage benefit over th	ne recurrence inte	rvals. A correcti	on calculation is in	ncluded in order	to obtain a	Average Total Se	core		13
CSO - Combine FC - Fecal colifo	d sewer overflow irm ic information system							Corrected Sco	ге		22

/alue:	Public Hea	alth Enhai	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Measurement Method		
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a e distance from	via hydraulic mode ind the GIS to designated
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
quency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
nb	2 Year	15	12	9	6	3	0	Releases 63,000 gallons	12	0	12
Fre	5 Year	10	8	6	4	2	0	Releases 167,000 gallons	8	2	6
ш	10 Year	5	4	3	2	1	0	Releases 248,000 gallons	5	2	3
ximum score of	heet calculates the aver 25.	rage benefit over t	he recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total S	core		4
CSO - Combined FC - Fecal colifo GIS - Geographi								Corrected Sco	re		7

Value:	Public Hea	alth Enhai	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SO discharge a e distance from	
>	6 Month	25	20	15	10	5	0	Releases 80,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 172,000 gallons	16	0	16
ž	2 Year	15	12	9	6	3	0	Releases 269,000 gallons	15	0	15
ē	5 Year	10	8	6	4	2	0	Releases 393,000 gallons	10	2	8
u.	10 Year	5	4	3	2	1	0	Releases 495,000 gallons	5	2	3
aximum score of	sheet calculates the aver	rage benefit over t	he recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total So	core		12
FC - Fecal colife	ord sewer overflow orm nic information system							Corrected Sco	re		20

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SO discharge ar e distance from o	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
n n	2 Year	15	12	9	6	3	0	Releases 2,000 gallons	3	0	3
5	5 Year	10	8	6	4	2	0	Releases 31,000 gallons	4	0	4
ш	10 Year	5	4	3	2	1	0	Releases 46,000 gallons	2	1	1
ximum score of	neet calculates the ave 25.	rage benefit over ti	ne recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total So	core		2
Acronyms CSO - Combined FC - Fecal colifo GIS - Geographi								Corrected Sco	re		3

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	Impact			Rationale	Mea	surement l	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gais	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge ar e distance from o	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
e de	2 Year	15	12	9	6	3	0	Releases 13,600 gallons	3	0	3
ē	5 Year	10	8	6	4	2	0	Releases 170,000 gallons	8	2	6
u_	10 Year	5	4	3	2	1	0	Releases 282,000 gallons	5	2	3
ite - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	on calculation is i	ncluded in order	to obtain a	Average Total So	core		2
Acronyms CSO - Combine FC - Fecal collife	d sewer overflow							Corrected Sco	re		3

Value:	Public Hea	alth Enhar	cement -	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a distance from	
>	6 Month	25	20	15	10	5	0	Releases 600 gallons	5	0	5
Frequency	1 Year	20	16	12	8	4	0	Releases 16,000 gallons	4	0	4
nt da	2 Year	15	12	9	6	3	0	Releases 55,000 gallons	12	0	12
ē	5 Year	10	8	6	4	2	0	Releases 123,000 gallons	8	4	4
ш	10 Year	5	4	3	2	1	0	Releases 160,000 gallons	4	3	1
ximum score of	heet calculates the ave	rage benefit over t	he recurrence inte	rvais. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total Se	core		5
FC - Fecal colife	d sewer overflow							Corrected Sco	re		8

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	and the environment Therefore EDA developed	to quantify the S	SSO discharge a e distance from	ia hydraulic model nd the GIS to designated
₹	6 Month	25	20	15	10	5	0	Releases 155,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 223,000 gallons	20	0	20
n n	2 Year	15	12	9	6	3	0	Releases 292,000 gallons	15	0	15
ē	5 Year	10	8	6	4	2	0	Releases 360,000 gallons	10	2	8
ш	10 Year	5	4	3	2	1	0	Releases 405,000 gallons	5	2	3
ite - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correction	on calculation is i	ncluded in order	to obtain a	Average Total So	core		13
Acronyms CSO - Combine FC - Fecal colife	d sewer overflow							Corrected Sco	re		22

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Releas	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gais or Park or Blue Line <50,000 Gais or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SO discharge a e distance from	ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 36,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 71,000 gallons	16	0	16
an	2 Year	15	12	9	6	3	0	Releases 123,000 gallons	12	0	12
ē	5 Year	10	8	6	4	2	0	Releases 204,000 gallons	10	4	6
ш	10 Year	5	4	3	2	1	0	Releases 274,000 gallons	5	2	3
ote - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	ervals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		11
FC - Fecal colife	d sewer overflow orm ic information system							Corrected Sco	re		18

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SO discharge ar e distance from o	ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	No Release	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Release	0	0	0
an I	2 Year	15	12	9	6	3	0	No Release	0	0	0
Je .	5 Year	10	8	6	4	2	0	No Release	0	0	0
LL	10 Year	5	4	3	2	1	0	No Release	0	0	0
aximum score of	heet calculates the ave	rage benefit over t	he recurrence inte	ervals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		0
FC - Fecal colife	d sewer overflow orm ic information system							Corrected Sco	re		0



lue:	Asset Pro	otection								Solution and Alterantives 1,			
		Measure				Im	pact			Rationale	Mea	surement Metho	d
		Flood	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	localized stormwater peak nows and	Customer Information Sys	vvallable, historic customer o stem, or historic observation expected relative impacts o ater flows.	ns of flood-prone
Performance Measures		Basemer	it Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 feet above ground surface, and basement floors are typically 8 - 10 feet below the first floor. A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods w		
rforman	Storm Events		•	Most Severe Impact				Least Impact	No Impact			5	
Pel		1		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Score
	6 Month	Most	5	25	20	15	10	5	0		10	0	10
	1 Year		4	20	16	12	8	4	0		12	4	8
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0		8	4	4
	10 Year	Least	1	5	4	3	2	1	0		5	3	2
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Average	Total Score		6
This value s	heet calculates the av	rerage benefit o	ver the recurre	nce intervals. A correc	ction calculation is inc	cluded in order to o	btain a maximum sco	ore of 25.		Correc	ted Score		10

1, AA Projects 2007/07089 _71ewn_SSS_ModelropPNFICAP _Feb2010Revisions Cost Estimates Jown blending elimination benefit scoring Asset Environment and Eco Francisy sta



Pro	ject #1	-						S_JT	JT NB01A 0	3 C			
alue:	Asset Pro	otection											
		Measure				Im	pact			Rationale	Mea	surement Method	d
		Flood I	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stormwater BMPs can reduce stormwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Customer Information Systems combined with the amodifications on storm was	vailable, historic customer c stem, or historic observation expected relative impacts o ster flows.	ns of flood-prone
ce Measures		Basemen	t Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 feet above ground surface, and basement floors are typically. 8 - 10 feet below the first floor A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods w hydraulic grade lines comp	ill be via hydraulic models to pared to ground surface elec	o quantify the vations at manho
Performance	Storm Events	1	-	Most Severe Impact				Least Impact	No Impact				
Per		1		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Scor
	6 Month	Most	5	25	20	15	10	5	0		5	0	5
	1 Year		4	20	16	12	8	4	0		4	4	0
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0		8	6	2
	10 Year	Least	1	5	4	3	2	1	0		4	3	1
	Not Possible	Not Poss ible	0	0	o	0	0	0	0	Aver	age Score		3
te - This value :	street calculates the a	verage benefit o	ver the recurre	nce intervals. A corre	ction salculation is in	cluded in order to o	btain a maximum sc	ore of 25,		Corre	cted Score		5



		1			Jerre	ersontow	ii pieudi	ng Elimi	nation - C	Original IO	AP Solut	ion	
Value:	Environmental I	Enhancement											
Aspect	4	4	-3		-1		50	oring				Assumptions	Score Per Asp
Aquetic and	Simplestian of hisbook for own o		Smneton of neur anount		More proper amount to existing		More extensioned of	Danker starens	Creation of more amount of	Creation of significant emount	Creation of critical habitas for		
Terestrial Habitat. Protection	endangereil species	enound of common business	of consess tradition	Significant hobital trapporaria	habitet.	Tile impact on hamile!	writing habitan	existing Netral	common habitat	of common habitet	trans or endangered species	Plant elimination restores (Cremowath Plant to intermitant stream habital - its natural state that has been modified by continuous plant discharges.	3
Aesthetics - Solids and Floatables	755+ reductor in viture of See with no SSF paptics	50 - 75% of flow with no SAF removal	25 - 50% of Sow with no. 555 (Notice of	10 - 25% of Sow with no SAF removal	Reduces efficiency of estation SAF control device. 2 - 10% of fine with no SAF removal	No change in SAF removal	0 - 10% of destroyed flow tracked with practice SSF removal (screens)	10 - 25 % of discharged for treated with positive SGF removal (borsens)	25 - 50% of dacharged flow bested with positive S&F retroval (accesse)	to - 75% of decharged flow treated with positive DAF common accesses	75% - of discharged fine treated with positive RAP removal (screece)	No sultions will provide changes in SSF Removal	0
Aesthetics - Odor and Air Emissions	Criside entroying order source offering # 20 customers often	Create etempting older mounts effecting +20 toutloners often or +20 sustainers occeanised	Create screeping oder source is effecting <20 customers occasionally	Create detectable odor source affecting = 50 tousiumers aften	Create delectable ador neuros effecting < 50 instantes occasionally	No impact on oders	Eliminate delectable inter- source effecting + 50 continues occasionate	Eliminate detectable notice source affecting > 50 customers often	Eleverate accoying oder many affecting <20 customers occusionally	e Element arroying day source affecting +20 customers often. sr +20 customers occessorally	Element annoying odor source affecting +20 continues often	Other will be administed from all overflows along Joven interceptor being alternated. Treatment Plant adom alternated accept for most storage and puring states passed.	3
Dissolved Oxygen mpacts	Reduction of in severe DC by regil + during striked false period	Continues reductor of a- extraor DO of 2 ings =	Continuous reduction of example of the street DO of D-2 right, presides induction of in- streets DO 2-4 right outring or the property DO 2-4 right outring.	transmittent reduction of in stream DO 2 ergs + preside turing non-critical conditions, reduction of DO 0 - 2 mgf during critical conditions.	Voluminities reduction of in- stream DO 0 - 2 mg/ possible during non-critical conditions	No DO Inguich	intermittent ingrovement of in others DO 8 - 2 mg8	internities ingrovement of overseen DO 2 regil v internities tracked condition ingrovements 5 · 2 regil	Continuous improvement of a stream DO 8 - 3 mg/l improvements 2-d mg/l	Conditional inprovement of in- strain DO 2 mgb •	Cardinuosa improvement of critical condition in eleven DC 2 mg/l +	Plack efficient land elementary and provide represented of in obtain DOO - 2 right land obtains may day up in surrows.	1
Downstreem Impacts	79% increase in arount 800 or outside leads	50 - 75% horsees in process BCIC or numerol bears	25 - 50% inclnates in arrival BOD or nutrient locate	10 - 15% increase in entruel 800 or nutrient treets (CSC + nutrient)	Potential 0 - 10 % increase in instruction of CSC + runoff	No impact on BOO or ruleing loads (CBO + runnif)	2 - 10% reduction in annual BIDD of material basis (CSC - runos)	10 - 25% reduction in every 8000 or nutrient leads (CSI + nunoff)	25 - 50% resturation in arrower 8000 or number liseas (CSO + runoff)	35 - 75% reduction in annual 8000 or number limits (CSO + number)	75%+ reduction in enruel 800 or nutrient loads (050 - runoli)	Improved capture and Electrical SSCs will provide 0 - 10 % reduction in annual BOD or restricts hade (SSC - runost) soverest and adjusted Capture.	1
Stream Flow Impacts (Peak flows)	25% - norman ri pesit films	10% - 25% repassa at pask. Nove	Up to 10% increases in pass. Book	Fraquent incresse in time sturing critical conditions.	Possible increase in average flow, or major nursease in high flow peaks	No impact on year flows	Minor reduction in Nowe - n algorithms peak reduction	Minor reduction in peak films under some condition	Up to 10% reduction in posit Freet	10% - 25% reduction is year form	25%- reduction in peak flows	Flow pasint to be reduced due to diversion of plant officers.	3
Streem Flow Impacts (DWF only)	2514- decrease in few during critical conditions.	10% - 25% decrease in fine during critical conditions	0-10% permanent decrease in their during critical conditions	Frequent decrease in flow states unless considera	Fossible decrease in average flow	t life impact on avecage or base of earn fine	schemitted victoria in alream how rust trend to princel conditions	triarmitant increase in stream flow - often improve ordered conditions.	0 - 10% permanent intrease a dream fore during critical conditions	n 10 - 25 % permanent romanse in streem flow during critical conditions	25%- pertherent increase in observ furing critical conditions	Base for midisteristly reduced, but the restricts stream to its natural condition pushion and negative impacts bisance and	o
instructions: (1.) Sc total score for this s	ors sech alternative for alternative in this value,	each of the seven aspe (3.) Shaded area repres	ects of the value. Score ents "fetal flew". Alten	es can be positive or neg netives that score in this	ative, depending on the area should not be pro	e impact of the alterna oposed.	otive on the value. (2.)	Total the scores for e	ech aspect to get the		Total	Raw Score Calculated	11
Aspect	Rationale						Measurement I	Mathod				Corrected Score	11
Aquatic and Ferestrial Habitet Protection	shape and characteristic	s etc. Predicitive models	used to evaluate wel we	th changes in base flow, positive control measures to nather control measures to nate future positive and ne	we a limited ability to pre	ne cover, channel edict biological diversity	and configuration, tree and other water qualit	y impacts. Flow model	models will address DO	Note: The total score c	siculated may be more	than 25. In the instances where this might occur, a default man	dmum score of 25 v
Aesthetics - Solids and Floatables	advanced treatment optic	ins. Storm water retention	n, constructed wetlends	overnents in capture rates and other control system y, penalty points will be ass	may provide solids and	floatebles removal as	all sites with control to will be estimated for a advanced treatment to	echnology, improvement it alternatives that add a echnologies. Where tre	creening or other				
Assthetics - Odor and Air Emissions	Odors and air emissions by both the intensity and from sewage handling fac	the quality of the odor. D	age systems, pursp state and annoying	iotis, force mains, and long are two common descripto	flet sewers. Odors are is of different intensities	generally characterized and qualities of odors	intensity, quality, and a level of evaluation is no rare circumstances. I estimated based on ty	sewage handling facilitis geographic spread. Fo of common, and will no The potential for odor ar pical applications and of of events, sverage flow	planning purposes this be done except in very d air emissions will be widel predictions for				
Dissolved Oxygen mpacts	Dissolved oxygen in stree	erns is dependent on a va	triely of factors including	BOD load, nutrient load, a	tream flow velocity, water	er temperature, etc.	of various loading con	unity Tool will be used ditions, flows, temperat rojects will be estimate condition scenarios.	res, etc. Probable				
Downstream impacts	been identified as the sou	or to conditions in the Ohi erce of 30 - 45% of the tot have detrimental impacts	tel nutrient kieds reachin	County, Nutrient loadings i g the Gulf of Mexico, SIOD	n the Ohio (not just Jeffe is not likely to persist in	erson County) have the river long enough		be estimated based or he downstream impacts	reductions in annual are primarily long-term				
tream Flow npacts (Peak lows)	Extremently high peak for make water based recrea	ws as are often caused b tion unsafe or impractical	y urbanization of a water.	rshed can erode the stream	nhed, damage aquatic a	nd terrestriel habitet,	sources, and the Water	estimate flow peaking I or Quality Tool has a hy during various storm e	fraulic component to				
treem Flow mpacts (DWF only)	Diversion of flows away fr measures such as ground	om a stream due to abor Swater pumping can incre	donment of a treatment	plant etc. can reduce base eficial results.	flows in a stream. Alter	matively, other control		s a hydraulic componen	evidual sources, and the to estimate stream				
Acronyms IGC - Seargrass Cred IGD - Biological oxyg ISO - Combined sew	en demand		DO - Dissolved oxygen DWF - Dry weather flow mg/l - Milligram per liter		S&F - Solids and floatab	oles				1			



Environmental E -5 Simmator of repose to zero or water precise	4											
Eliminatury of Hallital for yarm or	District Control of the Control of t						optic					
Einterators of nations for care or enablingered species		-3	-2	-1	8	1	oring 2	3	4	5	Assumptions	Score Per Aspect
AND DESCRIPTION OF THE PARTY OF THE PARTY.	Etherates of significant amount of common habitat	Elimination of mittor amount of common feature	Significant habital imperament	More imperement to estalling hybran	No impact on habital.	Minor enhancement of existing historial	Significant echanisment a existing habital	Creation of minor amount of common habited	Creation of significant amount of common habital	Charten of critical habital for tars or andungment species		
75% restriction in volume of	50 - 75% of fine with my BEF	26 - 90% of Sale with our East	10 - 25% of Now with no Stalf	Reducas efficiency of exister SIMF control device, 0 - 10%		0 - 10% of decharged line	10 - 25 % of discharged fo	= 20 - 50% of decharged flow	50 - 79% of doctrorged from	19th a of discharges have		
fine with our SAF capture	removed	CHECKER	removel	SSF control device, 0 - 10% of how with no SSF removal	His shange in SAF removel	reated with positive DAF removal (screens)	Tested with provides SAF	Pasing with positive SM removel (streens)	treated with positive S&F ramoval Screens	Vested with positive GAF removal (screens)		
								-				
Create enoughing oder source of selecting + 20 customers often	O'alds animaling oder enlarce effecting GD quetomers often	Cress everying odor source offecting +30 customers	Create delectable ador source offentee a 50 centeres offen	Create detectable odor source affecting + 50	has impact on odors	Contrara desectation ador source effecting + 50	Eliminate delectatio esta anucca affecting + 50	(Science entroping oder source effecting <20 customers	elizate arroying our source effecting <20 customers offer,	Discouse arranging over assure effecting +20		
	a +26 materiers scranings	accessorally		customers occasionally.		customers accessorally	customers often	occasionally	or +20 continues occasionally	contamers often		
					1	-	_					
		Continuous reduction of in-	intermittent reduction of in							-		
Restaction of its greats DO by 2 right is during critical falls period	Continuous reduction of in- extrem DC of Zings +	possible reduction of in-	street DO 2 mgl + possible during non-critical conditions, cohorton of DO 6 - 2 mod 4 min	intermittent reduction of in stream DO 0 - 2 mg/ possible	Ne DO Inquicts	Intermittent triprovement at Investment DO 6 - 2 mg/l	in etream DO 2 mg/l *, intermittent scilical condition	atraum DO 5 - 2 mgt, intermitant critical condition	Continuous improvement of to stream DO 2 mg/t +	Continuous improvement of ordical condition in attent DO		
		strikead consistency	orikel conditions	during non-critical concession			Improvements 0 - 2 mg/l	Improvements 2-4 mg/l		2 mg1 *		
75fer increase in ennuel BOD or outlest leads	50 - 75% increase in armint BCID or nutrient loads	25 - 50% increases in annual SOD at huthert loads	SCO or nutrient leads (CSC +	Potential D - 10 % provide of armost everage BOD or published trade (CBD) a purelli	No impact on BOD or nutrien loads (CBO = nunell)	BCC or nutrient hauts (CSC	BCC or outstand leads (CSC	BOD or nutrient hads (CSO +	\$00 or nutrient leads (CSC) +	BCO er nutrient treats (CSC) -		
				Premitre provides in average						1930)		
29% - ricrasca in past, from	foes	time.	critical conditions	Now or minor this same in high flow peeks	tile impact on peak flows	significant peak reduction	fires under some condition	Op to 10% reduction in peak flows	fore	25%+ reduction in year, fixes		
									1 12 -			
25% decrease in fine during critical conditions.	10% - 25% decrease in fine during critical conditions	to Now during critical	Frequent decrease in Now during ordered constitutions.	Possible decrease in everyone	His impact on everage or home present flow	priemitant repeats to stream for - not freed in	intermittent increases in streets flow - offers improves	0 - 10% permanent increase i streem five during critical	n 10 - 25 % permanent incresse in steem few items critical	25% permenent increase in stream flow storag critical		
						(Intra constant	trem inches	Cordon .	- Contraction	in the same		
re each atternative for s	each of the seven aspe	ots of the value. Score	s can be positive or neg	ative, depending on th	impact of the alterna	tive on the value. (2.)	Total the scores for a	sch aspect to get the				
ternative in this value. (3.) Shaded area repres	ents "fatal flew". Alten	natives that score in this	area should not be pro	posed.					Total	Raw Score Calculated	•
Pationala	7					Management N	Anthod				Corrected Score	
Canonino	1-2-									7.7		
Wet weather projects may	affect both equatic and	terrestrial habitat throug	h changes in base flow, pe	eak flow, water quality, tr	ee cover, channel	and configuration, tree	cover etc. Predictive	models will address DO	Note: The total across o	alcutated may be more t	han 25. In the lentances where this minut occur a default many	terrors across of 95 will be
shape and characteristics changes, wester impacts	etc. Predictive models etc., so surrogala metric	used to evaluate well we on must be used to entire	ather control measures he sale future positive and ne	we a limited ability to pre- pative impacts.	dict biological diversity	and peak flow rates to	ripacts. Flow models allow estimates of cha	i will predict base flow inges in erosion and wate	calculated.	anchesies may be more.	tion 25. In the manuscree where the might occur, a seraut ma	omum score or 25 will to
						Surface area.						
Most CSOs have some fo	rm of solids and floatable	es control baffles, Impro	vernents in capture rates o	onn be expected with scr	eening or other	all sites with control to	chnology, Improvemen	its in removal efficiencies				
sdvanced treatment option	ns. Storm water retentio	n, constructed wetlends.	and other control systems	may provide solids and	floatables removal as	advanced treatment to	chnologies. Where tre	atment is proposed for				
						removal data.	a ramovana viin par stani	marine sussess on publisher				
									1 - 1 - 30			
						Odor emissions from a	ewage handling facilitie	es can be modeled for	-			
Odors and air emissions o	can be generated in ston	age systems, pump stati	ons, force mains, and long	flat sewers. Odors are	generally characterized	level of evaluation is n	ot common, and will not	be done except in very				
om sewage handling faci	ities.	the and analysis	an two common descripto	S Of Division States	and qualities in occurs	estimated based on ty	pical applications and n	nodel predictions for				
						storage time, number	of events, everage flow	velocities etc.				
						For BGC the Water Co	only Tool will be used t	o estimate the impacts				
Dissafved oxygen in street	ms is dependent on a ve	riety of fectors including	BOD load, nutrient load, at	tream flow velocity, water	and the same of the same	impacts of individual p	rojects will be estimated	ires, etc. Probable I besed on comparisons				
						to the various stream	condition scenarios.					
een identified as the sour	ce of 30 - 45% of the tot	al nutrient loads reacting	the Gulf of Mexico. BOD	is not likely to persist in	the river long enough	average loads, since t						
yer so the Ode, but can i	nave dedimental impacts	Tar sownower.				and cumulative.						
						Predictive models den	extense flow neaking (action from individual				
attendently high peak flow wike water based recreat	es as are often caused by ion unsafe or impractical	y urbanization of a water L	shed can erode the stream	nbed, demage aquatic a	nd terrestrial habitet,	sources, and the Wate	Cuality Tool has a hy	drautic component to				
harries of Source annual fron		decimant of a transmission										
mesures such as ground	water pumping can incre	ese bese flows with beo	eficial results.	man er e susem. Ader	morely, other control	Water Quality Tool has flows during various dr	a hydraulic componen y weather events.	to estimate stream				
	13											
and the property of the proper	tenderion of to others DO by 2 of 1 every strike the period of 1 every strike the stri	tenderion of to others DO by 2 Continuous reduction of in- get 1 comp stratus feet personal seem DO of Engli 1 201- Increase is amoust 800 00 - 10's brownes in service 100's reduced tender 100's 30's increase in peak 100's 30's 30's increase in peak 100's 30's 30's increase in peak 100's 30's 30's 30's 30's 30's 30's 30's	The noneman from any office of the server aspects of the values. Score control in this value. (3.) Shaded area represents "fitted files". After movemen from any office or control in the server of the control in the cont	The normal is not a continued of the service of the value. Scores can be positive or negaritative for each of the service and service of the value. Scores are the positive or negaritative for each of the service of the value. Scores are the positive or negaritative for each of the service of the value. Scores are the service of the value. Scores are the positive or negaritative for each of the service of the value. Scores are the positive or negaritative for each of the service of the value. Scores are the positive or negaritative for each of the service and for the value. Scores are the positive or negaritative for each of the service and the value. Scores are the positive or negaritative for this value. (2.) Shaded area represents "fetal flew". Alternatives that score in this value, (2.) Shaded area represents "fetal flew". Alternatives that score in this value, (3.) Shaded area represents "fetal flew". Alternatives that score in this value, scores are the positive or negaritative flew of this value. Scores are the positive or negaritative flew of this value. Scores are the positive or negaritative flew of this value and the value	The noneman is served 500 by 2 Continues an expect of the control	September 1 in America (1 in A	Combined in reliable of the seven in process of a press DD by Continue and education of the seven to do 2-d and continued in reliable of the 3-d and continued	Combinate readout of the common of the commo	Combined analysis of the company of	Interest to the Diff. To Selb-own antiferror of the Control of the	Section of control (1972) Control control (1974) Control control (1974) Control control (1974) Control control (1974) Control	And the control of th



	Te =			Jener	SUITOWII	Dienani	g Lilling	ation Eva	luation -	Original	IUAP 30	Jution	
Value:	Eco-Friendly	y Solutions											
Aspect	-5	-4	-3	-2	-1	0	1 1	coring 2	3	4	5	Assumptions	Score Per Aspec
Non-Renewable Energy Consumption	Primary energy consumption is greater than secondary freatment	Primary energy r consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treatment	Primary energy consumption equal to 15 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary treatment	No energy consumption except for cleaning and maintenance	Cleaning and maintenance not needed, no primary consumption	NA .	NA	NA .	NA	Energy consumption needed for storage and pump station at the plant. 95% of flow pumped, secondary treatment still required end of pipe	-4
Use of Natural Systems	Constructed teclibles permanently displace 5+ acres wetlends or 50% locally available green space	Constructed facilities permanently displace 3 - 5 acres wetlands or 25 - 509 locally available green space	Constructed facilities permanently displace 1 - 3 acres wetlands or 10 - 159 locety available green space	Constructed facilities permanently displace 0 - secre wetlands or up to 10% locally available green space	Constructed facilities temporarily disrupt wellands or green space	Alternative does not use or affect natural systems, wetlands, or green space	Alternative doesn not use natural systems, but enhances green spece or wetland	Natural systems play a minor role in afternative function, up to 1 acre wetlend or 10% additional green space created	n Natural systems are significent part of alternative function, 1 - 3 acres of wetland created or 10 - 25% additional green space	Alternative fully uses natural systems, 3 - 5 ecres of wetland created or 25-50% additional green space	Afternative results in multi- use natural system development, 5+ occes of welland or 50% additional green space	Construction would temporarily disrupt green space, but potentially allow new green space to be created at the existing plant site.	1
Multiple-Use Facilties	Constructed facilities permanently airminate recreational opportunity	Constructed facilities significantly impera recreational opportunity	Constructed fecibles moderately impare recreational opportunity	Constructed facilities have minor impacts on recreational apportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Alternative improves access to existing recreational areas	Alternative has limited positive impact on recreation	Atternative significantly enhances recreational opportunities	Atternative increases recreational opportunities in area	Atternative results in multi- use facility	Portion of plant site poslid be converted to multi- use recreation when treatment process is decommissioned.	2
Source Control of subwatershed pollutant loads	Pollutant loadings are increased by SO%	Polistant leadings are increased by 30 - 50%	Pollutant leadings are increased by 10 - 30%	End of pipe pollutant loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely higher	End of pipe pollutant loading are unchanged	Diversion trensfers more in their 25% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 50% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 75% of pollutard loadings to less sensitive receiving water	Diversion transfers more than 90% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 100% of pollutant loadings to less sensitive receiving water	94% of pollutant leads transferred to Ohio River, a less sensive watershed.	4
Non-Obtrusive Construction Techniques	Permanent loss of green space or sensitive area disruption	Main thoroughfare closures, sensitive area temporery disruptions	Widespread dust and noise, blesting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, treffic lene closures	No construction impacts	NA	NA .	NA	NA	NA .	Construction would cause localized dust and noise with street closures	-2
Consistent Land Use	Intrusive or nuisance fedities incursistent with neighborhood or land use.	Facilities inconsistent with neighborhood or land use.	Facility characteristics mitigated to reduce impact on neighborhood	Facilies have significant impact on development density or land use	Facility has minor impact on development density or land one	No impact on land use or no above ground facilities	Alternative mitigates existing compatibility problem	Alternative removes facility inconsistent with neighborhood	Alternative removes nuisance facility from neighborhood	Atternative enhances property values in neighborhood	Alternative provides enhancements that significantly improve neighborhood	Facilities on plant site will be reduced to a pump station and storage facility, eliminating the existing incompatable use of a treatment facility.	2
Impermeable Surfaces	5 acres + of impermeable surfaces are added	3 - 5 acres of impermeable surfaces are added	1 - 3 acres of impermeable surfaces are added	up to 1 acre of impermeable surfaces are added	Minor increase in impermeable surfaces added	No change in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 sore of impermentile surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermentile surfaces removed	More than 5 ecres of impermeable surfaces removed	No change in impormable surface in all options	0
LEEDS Performance	NA	NA	NA	NA	NA.	LEEDS not applicable or LEEDS score <10	LEEDS Score 10 - 25	LEEDS Certified	LEEDS Silver	LEEDS Gold	LEEDS Pletinum	LEEDS not applicable or LEEDS score < 10	0
instructions: (1.) to get the total so	Score each alternations for this alternat	ive for each of the eig ive in this value. (3.) S	ht aspects of the value Shaded area represents	s. Scores can be posi s "fatal flaw". Alterna	tive or negative, depend dives that score in this	ding on the impact of the area should not be prop	se alternative on the va	lue. (2.) Total the score	s for each aspect		Total Raw Score	Calculated	3
Aspect	Rationale						Measurement M	Method			Corrected 5	Score	3
	Eco-friendly solutions w	rould be expected to be low for high energy consuming a	consumers of non-renewable alternatives.	energy. Benchmarking en	ergy consumption against com	ventional secondary treatment	Measurement M	gy consumed per MG of flow tr	realed, compared to the	Note: The total score maximum score of 25	calculated may be m	ore than 25. In the instances where th	
Aspect Non-Renewable Energy	Eco-friendly solutions w provides penalty points Natural systems replace	for high energy consuming a e concrete and steel constru	ellernetives.	e legoons, constructed bios	rrgy consumption against com waters, rain gardens etc. that is		Measurement M Evaluation of primary energy energy consumed at the W Acres of westlands, and other	gy consumed per MG of flow tr	d or eliminated. Also includes	Note: The total score maximum score of 25	calculated may be m		
Aspect Non-Renewable Energy Consumption Use of Natural	Eco-friendly solutions w provides penalty points Natural systems replac- various kinds. Options Eco-friendly solutions of	for high energy consuming a e concrete and steel constru- that reduce wetlands and gr create recreational apportunit	ellernatives, sction with well bottom storage even space get penelty points	e lagoons, constructed bios-	wales, rain gardens etc. Usat in	ncrease green space of	Measurement M Evaluation of primary energy energy consumed at the W Acres of wetlands and othe subjective evaluation of the Subjective evaluation of ch	gy consumed per MG of flow to CWTP per MG treated. or types of green space created "besis" of the alternative - "gri enges predicted in the aquatic y, increased base flow or decre y, increased base flow or decre	of or eliminated. Also includes een" or "grey".	Note: The total score maximum score of 25	calculated may be m		
Aspect Non-Renewable Energy Consumption Use of Natural Systems Multiple-Use	Eco-friendly solutions was provided penalty points Natural systems replace various kinds. Options Eco-friendly solutions of the direct water-based or	for high energy consuming a e concrete and steel constru- tivit reduce wetlands and gr create recreational opportunity create recreation. Bird watching, his dis at the source through bed	atternatives, uction with wet bottom storage, uction with wet bottom storage, uction storage, uction with with the storage uction of	e legions, constructed bloss, . (parian recreation, Boeting etc., would be considered.)	wales, rain gardens etc. Usat in	ncrease green space of would seeing, swimming etc. would	Measurement III Evaluation of primary energy energy consumed at the W Acres of vertilands and othe subjective evaluation of the subjective evaluation of the result of letter value quality tree cover or vegitated rips Modeleel land-side politican	gy consumed per MG of flow to CWTP per MG treated. or types of green space created "besis" of the alternative - "gri enges predicted in the aquatic y, increased base flow or decre y, increased base flow or decre	t or eliminated. Also includes men' or 'grey'. or ignarien environment as a nessed flow peaks, increased sted by the BGC Water Qualifi.	Note: The total score maximum score of 25	calculated may be m		
Aspect Non-Renewable Energy Consumption Use of Natural Systems Autitiple-Use acitities Source Control of ultiwaterahed Solutant loads Aon-Obtrusive Construction	Eco-friendly solutions we provides penalty points. Natural systems replact various kinds. Options the direct water-based in Controlling pollutant beautiful penalty and pipe the evolving and of pipe the	for high energy consuming a e concrete and steel constru- tive reduce wetlends and gri meate recreational opportunity meate recreation. But watching, his do at the source through behaviored requirements.	alternetives, uction with wet bottom storage even space get penelty points es for both weter-based and king, bilding, picnicing, campir havior modification, product n	e legoons, constructed bloss. (parism recreation. Bosting etc., would be considered etc., would be considered etc., would be considered.)	weles, rain gardens etc. that is that is to canoing, keyeking, fishing, to canoing, keyeking, fishing, related siparien recreation.	wading, swimming elic, would use pollutants thereby	Measurement II Evaluation of privacy energy energy consumed at the W Acres of vertilands and othe subjective evaluation of the subjective evaluation of the result of letter value quality tree cover or vegitated tips Modeled land-side politican Tool or by comparison to it	by consumed per MG of flow to CVVTP per MG treated. If the special of the stematic creation is a special or types of green space creation the stematice - "girl angues predicted in the equation," in creased base flow of decreased	of or eliminated. Also includes need or "grey". or rightrien environment as a nessed flow peaks, increased the by the BGC Water Quality in measurements.	Note: The total score maximum score of 25	calculated may be m		
Aspect Non-Ranewable Energy Consumption Use of Natural Systems Autiple-Use acities Source Control of Subwatershed collutant loads Non-Obtrusive Construction echniques	Eco-friendly solutions up provides penalty points Natural systems replact various kinds. Options or be direct water-based or Controlling pollutant lose avoiding end of pipe ten direct water-based or prohable construction in missance conditions. Alternative configuration uply. The aume pumps	for high energy consuming a e concrete and steel constru- tive treduce wetlends and gra- mate recreational apportunity materials of the second apportunity do at the source through be- stment requirements.	alternetives, uction with wet bottom storage een space get penelty points ees for both water-based and long, leisting, campie share medification, product re sharing are all measures of the fi	reparian recreation. Boating of the would be considered to the considered applicaments or stormwaler brendliness of an alternative worty. For example, an extract the neighborhood. If a	weles, rain gerdens etc. that is canning, keyeking, fishing, canning, keyeking, fishing, raided riparies recreation. menagement BMPs that capts. Construction impacts get permitty pump station on larger parcel of lond is evaleting larger parcel of lond is evaleting the parcel of lond is evaleting.	eading, swimming etc. would use pollutants thereby wratly points for creating can be noisy, smelly, and	Measurement II Evaluation of primary energy energy consumed at the W Acres of wetlands and othe subjective evaluation of the result of better water quality tree cover or vegitated rips Modeled land-side politicar Tool or by compensate to it Subjective evaluation of pro- construction envisioned for At the plenning level, proje- strumming properies. De-	by consumed per MG of flow to CVVTP per MG treated. If the special of the stematic creation is a special or types of green space creation the stematice - "girl angues predicted in the equation," in creased base flow of decreased	of or alliminated. Also includes the "grey". or ignation serviconnend as a newed flow peaks, increased the service service service of the service service service or the service service of the service service service service the service service service service the service service service service the service service service service the service service the service service the service the the service the se	Note: The total score maximum score of 25	calculated may be m		
Aspect Non-Renewable Energy Consumption Use of Natural Systems Autopie-Use Facilities Source Control of ubwatershad	Eco-friendly solutions as provides penalty points Natural systems replact various kinds. Options on the direct water-based in direct water-based in Controlling pollutant lose avoiding end of pipe ter various kinds on the direct water-based in the direct water based on the dire	for high energy consuming a e concrete and steel constru- tivat reduce wetlends and gr reate recreational apportunity, as at the source through behaviour or the stream requirements. It can either enhance or defer tation can be "disputed" as decepting, and a community of faces increases total number.	alternetives, viction with wet bottom storage een space get penalty points in get penalty points and in get penalty points and in get penalty eet from the surrounding prog a residence that fits right in gerden or other green space	riperian recreation. Boeling set, would be considered biose of an alternative with the neighborhood. If a added to anhance the neigh as added to anhance the neigh a, and the total iransport of the sould be and the total iransport of the sould be and the total iransport of the neighborhood.	welles, rain gardens etc. that is canning, keysking, fishing, canning, keysking, fishing, canning, keysking, fishing, canning, keysking, fishing, canning, keysking, k	eading, swimming siz, would are pollutants thereby malty points for creating can be noisy, smelly, and late, a pump station can be	Measurement II Evaluation of privacy energenergy consumed at the W Acres of wellands and other subjective evaluation of the subjective evaluation of the subjective evaluation of the subjective evaluation of the subjective evaluation of properties of the subjective evaluation of proceedings of the subjective evaluation evaluati	by consumed per MG of flow by CWTP per MG breated. In types of green space creates "besis" of the atternative - "gin any space of the atternative - "gin any space of the atternative of the any space of the atternative of the any space of the atternative of the atternative values or pilot program to atternative values or pilot program to a space of the atternative of the	of or alliminated. Also includes the "grey". or ignation serviconnend as a newed flow peaks, increased the service service service of the service service service or the service service of the service service service service the service service service service the service service service service the service service service service the service service the service service the service the the service the se	Note: The total score maximum score of 25	calculated may be m		



Project #1							2 11 1	IT_NB01/	4 03 C				
/alue:	Eco-Friendly	Solutions											
Aspect	-5	4	-3	-2	-1	0	S	coring	3	1	5	1 2	
ion-Renewable nergy onsumption	Primary energy consumption is greater than secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treetment	Primary energy consumption equal to 15-30% of secondary treatment.	Primary energy consumption equal to 0 - 15% of secondary treatment	No energy consumption except for cleaning and maintenance	Cleaning and maintenance not needed, no primary consumption	NA .	NA S	NA .	NA S	Assumptions Energy consumption due to increase in primping	Score Per Aspec
se of Natural	Constructed facilities permanently displace 5+ acres wetlands av 50% locally available green space	Constructed facilities permanently displace 3 - 5 acres wellands or 25 - 50% locally available green space	Constructed facilities permanently displace 1 - 3 acres vertiands or 10 - 154 kcelly available green space	Constructed facilities permanently displace 0 - 1 acre wetlands or up to 10% locally available green space	1 Constructed fecilities temporarily disrupt wetlands or green space	Alternative does not use or affect natural systems; wetlands, or green space	Atternative doesn not use netural systems, but enhances green space or wetlend	Natural systems play a mino role in alternative function, up to 1 sere welland or 10% additional green space created	Natural systems are significant part of alternative function, 1 - 3 acres of wettand created or 10 - 25% additional green space	Alternative fully uses natural systems, 3 - 5 acres of wellend created or 25-50% additional green space	Alternative results in multi- use natural system development, 5+ acres of wetland or 50% additional green space	Force Main construction temporarily disrupts green space	-1
lultiple-Use acilties	Constructed facilities permanently eliminate recreational opportunity	Constructed facilities significantly impare recreational opportunity	Constructed facilities moderately impera recreational opportunity	Constructed facilities have minor impacts on recreational opportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Atemative improves access to existing recreational areas	Afternative has limited positive impact on recreation	Alternative significantly enhances recreational opportunities	Alternative increases recreational opportunities in orea	Alternative results in multi- use facility	No impact	0
ource Control f subwatershed ollutant loads		Pollutarn loadings are excreased by 30 - 50%	Poliutant loadings are increased by 10 - 30%	End of pipe pollutant loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely highe	End of pipe pollutant loading are unchanged	Pollutent loadings impacts are inconsistent, but likely lower	Source control reduces pollutant loadings by 0 - 105	Source control reduces pollutant loadings by 10 - 30%	Source control reduces pollutant loadings by 30 - 50%	Source control reduces pollutant loadings by more than 50%	End of pipe pollutant loadings impacts are inconsistent, but tikely higher in all options	-1
on-Obtrusive onstruction echniques	Permanent loss of green space or sensitive area deruption	Main thoroughfare closures, sensitive area temporary disruptions	Widespread dust and noise, blesting, secondary street circures	Localized dust, noise and local street closures	Minor dust and noise, traffic lane closures	No construction impacts	NA .	NA	NA.	MA	NA	Force main construction would result in minor dust and lane closures	-1
onsistent Land se	Infrusive or nultance facilities inconsistent with neighfanthood or land use.	Facilities inconsistent with neighborhood or land use.	Facility characteristics mitigated to reduce impact on neighborhood	Facilies have significant impact on development, density or land use	Facility has minor impact on development density or land use	No impact on land use or no above ground facilities	Attenuative mitigates existing competibility problem	Alternative removes facility inconsistent with neighborhood	Alternative removes numerical facility from neighborhood	Alternative enhances property values in heighborhood	Alternative provides enhancements that significently improve neighborhood	No impact on land use or above ground facilities in all options	0
npermeable urfaces	5 ecres+ of impermeable surfaces are added	3 - 5 scres of impermeable surfaces are edded	1 - 3 scres of impermeable surfaces are added	up to 1 acre of impermeable surfaces are added	Minor increase in impermeable surfaces added	No shange in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 scre of impermeable surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces removed	More than 5 acres of impermeable surfaces removed	No change in impermeable surface in all options	0
EEDS erformance	NA	NA	NA	NA	NA	LEEDS not applicable or LEEDS score <10	LEEDS Score 10 - 25	LEEDS Certified	LEEDS Saver	LEEDS Gold	LEEDS Pletinum	LEEDS not applicable or LEEDS acore < 10 in all options	0
get the total sco	ore for this alternat				tive or negative, depend tives that score in this			elue. (2.) Total the score	s for each aspect		Total Raw Score		4
spect on-Renewable nergy	Rationale Eco-triendly solutions w	3 3 3 3 4 5 5 6 7 5 7 7 7 8 9 7 7 8 9 7 7 8 9 7 7 8 9 7 8 9 7 8 9 7 8 8 9 7 8 8 9 7 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 8 9 8 8 8 8 8 9 8				Measurement Method Evaluation of primary energy consumed per MG of flow treated, compared to the energy consumed at the WCWTP oer MG treated.			Note: The total score calculated may be more than 25. In the instances where this might occur, a demandance of 25 will be calculated.				
onsumption se of Natural ystems	Nebral systems replace concrets and steel construction with wel bottom storage ingoons, constructed biosweles, rain gardens etc. that increase green space of various kinds. Options that reduce wellands and green space get penulty points.					Acres of wellands and other types of green space created or eliminated. Also includes subjective evaluation of the "basis" of the alternative - "green" or "grey".							
ultiple-Use acilties	Eco-friendly solutions create recreational opportunities for both water-based and riparien recreation. Bosting, canoing, kayeking, fishing, waiting, swimming etc. would be direct water-based recreation. But watching, hiking, piking, picking, camping etc. would be considered related riparian recreation.					Subjective evaluation of changes predicted in the equatic or riparian environment as a result of better water quality, increased base flow or decreased flow peaks, increased tree cover or vegitated riparian sreas etc.							
surce Control of ibwatershed illutant loads	Controlling politions loads at the source through behavior modification, product replacements or stormwater management BMPs that capture politions thereby avoiding and of pipe treatment requirements.					Modeled tand-side pollutant locating reductions as calculated by the BGC Water Quality Tool or by companision to Benefute values or pilot program measurements.							
on-Obtrusive onstruction echniques	Probable construction impacts on traffic, noise and dust are all measures of the Biendliness of an alternative. Construction impacts get penalty points for creating numbering conditions.					Subjective evaluation of probable construction impacts based on the type of construction envisioned for the attenuative.							
onsistent Land se	Alternative configuration can either enhance or dethect from the surrounding property. For example, an autremely unifically pump station can be notey, arredy, and uply. The same pump station can be "disquised" as a residence that the right in with the neighborhood. If a larger parcel of land is available, a pump station can be libblen from view by fendscaping, and a community gention on other green space added to enhance the neighborhood.					At the planning level, projects can be defined to evoid negative impacts on the surrounding properties. Depending on the availability of land, enhancements are possible. This expect encourages project definition and bodgets to onhance, not detact.							
	Adding impermeable surfaces increases total runoff volume, peek runoff flowratee, and the futal transport of any pollutant deposited in the surface from any source. Conversely, permeable surfaces can reduce flow volume and peaks, and provide filtering mechanisms for pollutants.					Acres of permeable surfaces created or eliminated.							
permeable urfaces	Conversely, permeable												

Cluster Comparison

Project #1: S_JT_JT_NB01_01_C_A (Alternative 1)

Raw Benefit Score²

CSO/SSO ID		Regulatory Performance	Public Health	Asset Protection	Environmental Enhance	Eco-Friendly Solutions
ISO28		21	22	10	11	3
28390		5	7	10	11	
31733		21	20	10	11	3 3 3 3
28395A		5	3	10	11	3
64505		5	3	10	11	3
MSD0255		0	0	10	11	3
28392		0	0	10	11	3
28391		0	0	10	11	3
28173		0	0	10	11	3
64096		21	8	5	4	-4
86052		21	22	5	4	-4
92061		0	0	5	4	-4
MSD0263		21	18	5	4	-4
Weighting Factor Weighted Benefit Score		8 960	10 1030	6 660	8 920	6 66
Total Benefit Score	3636					
Total Capital Cost ³	24831000					1
Total Present Worth Costs ³	0					
Weighted Benefit/Cost Ratio (Capital Costs) Weighted Benefit/Cost Ratio (Total Present Worth Costs)	14.642987 #DIV/0!					

Notes:

- 1. Data Input Cells are highlighted in yellow
- 2. Raw Benefit Scores for Regulatory Performance and Public Health values are from the CSO or SSO Level of Control Benefit Sheets
- 3. Capital and Total Present Worth Costs from the "Proj Summary" Page of the Cost Model for the clustered alternative

2-Year			Jeffe	erson	town	Blendi	ng Elimir	nation Plan - Original IOAP, Alt	ternatives 1,	2, 3 (all the s	ame)
Value:	Regulate	ory Pe									
	Measure	Ti-lie	In	npact	/ Fred	uency		Rationale	Meas	urement Met	nod
Performanc e Measure		6 month	1 Year	2 Year	5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO disc		models to
	Value	25	12	0	4	1	0				
	ISO28	BL			PR		mark Til		25	4	21

28173 Note - This value sheet calculates the total benefit.

Acronyms

Frequency

AAOV - Average annual overflow volume CSO - Combined sewer overflow

28390

31733

28395A

64505

MSD0255

28392

28391

BL

WQS - Water quality standards WWTPs - Wastewater treatment plants

BL

BL

BL

PR

PR

PR

PR

BL

BL

BL

BL

Subtotal

4

4

4

4

0

0

0

0

9

25

9

9

0

0

0

0

57

5

21

5

5

	Measure		In	npact	/ Freq	uency		Rationale	Meas	urement Met	hod
Performanc e Measure	SSOs	6 month	1 Year	2 Year		10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value. Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO disci	s will be via hydraulie	
ncy	Value	25	16	9	4	1	0	3- 10-10 To			
	64096	BL			PR				25	4	21
ne	86052	BL			PR				25	4	21
Freq	92061						BL		0	0	0
-	MSD0263	BL			PR				25	4	21

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact		,	Rationale	Meas	urement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gais	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge as distance from (
75	6 Month	25	20	15	10	5	0	Releases 900,000 gallons	25	0	25
Frequency	1 Year	20	16	12	8	4	0	Releases 2,000,000 gallons	20	0	20
nt.	2 Year	15	12	9	6	3	0	Releases 3,080,000 gallons	15	0	15
9	5 Year	10	8	6	4	2	0	Releases 4,600,000 gallons	10	6	4
ш	10 Year	5	4	3	2	1	0	Releases 5,720,000 gallons	5	4	1
aximum score of	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		13
FC - Fecal colife	d sewer overflow orm ic information system							Corrected Sco	re		22

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge are distance from o	ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
ž	2 Year	15	12	9	6	3	0	Releases 63,000 gallons	12	0	12
J.	5 Year	10	8	6	4	2	0	Releases 167,000 gallons	8	2	6
ш	10 Year	5	4	3	2	1	0	Releases 248,000 gallons	5	2	3
ote - This value s	heet calculates the aver	rage benefit over t	he recurrence inte	rvals. A correcti	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		4
Acronyms CSO - Combine FC - Fecal colife	d sewer overflow						Corrected Score			7	

10 Year

Note - This value sheet calculates the average benefit over the recurrence intervals. A correction calculation is included in order to obtain a maximum score of 25.

Acronyms

CSO - Combined sewer overflow

FC - Feacl coll

31733 - 2	YR	Jefferso	ntown Ble	ending E	limination	Plan - C	riginal IC	OAP, Alternatives 1, 2, 3 (all	the same		
Value:	Public Hea										
	Measure			Releas	e Impact			Rationale	Mea	surement	Method
Performance y Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Line <50,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA develope guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the	SSO discharge a re distance from	via hydraulic mode and the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 80,000 gallons	20	0	20
ů,	1 Year	20	16	12	8	4	0	Releases 172,000 gallons	16	0	16
an t	2 Year	15	12	9	6	3	0	Releases 269,000 gallons	15	0	15
Je C	5 Year	10	8	6	4	2	0	Releases 393,000 gallons	10	2	8
LL.	10 Year	5	4	3	2	1	0	Releases 495 000 gallons	5	2	3

Releases 495,000 gallons

Average Total Score

Corrected Score

2

3

12

alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a e distance from	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
2	2 Year	15	12	9	6	3	0	Releases 2,000 gallons	3	0	3
ē	5 Year	10	8	6	4	2	0	Releases 31,000 gallons	4	0	4
ш	10 Year	5	4	3	2	1	0	Releases 46,000 gallons	2	1	1
dmum score of	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	ion calculation is I	ncluded in order	to obtain a	Average Total S	core		2
FC - Fecal colife	d sewer overflow							Corrected Sco	re		3

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement I	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SO discharge an e distance from d	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
ž	2 Year	15	12	9	6	3	0	Releases 13,600 gallons	3	0	3
ē	5 Year	10	8	6	4	2	0	Releases 170,000 gallons	8	2	6
ш	10 Year	5	4	3	2	1	0	Releases 282,000 gallons	5	2	3
ote - This value s	theet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	ion calculation is	ncluded in order	to obtain a	Average Total S	core		2
Acronyms CSO - Combine FC - Fecal collid	ed sewer overflow						Corrected Score			3	

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a e distance from	
7:	6 Month	25	20	15	10	5	0	Releases 600 gallons	5	0	5
Frequency	1 Year	20	16	12	8	4	0	Releases 16,000 gallons	4	0	4
ä	2 Year	15	12	9	6	3	0	Releases 55,000 gallons	12	0	12
ě	5 Year	10	8	6	4	2	0	Releases 123,000 gallons	8	4	4
ш	10 Year	5	4	3	2	1	0	Releases 160,000 gallons	4	3	1
ite - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total So	core		5
FC - Fecal colife	d sewer overflow							Corrected Sco	re		8

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure		,	Release	Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge are e distance from o	
>	6 Month	25	20	15	10	5	0	Releases 155,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 223,000 gallons	20	0	20
and the	2 Year	15	12	9	6	3	0	Releases 292,000 gallons	15	0	15
ē	5 Year	10	8	6	4	2	0	Releases 360,000 gallons	10	2	8
ш	10 Year	5	4	3	2	1	0	Releases 405,000 gallons	5	2	3
ximum scare of	theet calculates the aver	rage benefit over t	he recurrence inte	rvals. A correction	on calculation is i	to obtain a	A. T. A. I.C.			13	
FC - Fecal colife	orm orm oic information system						Corrected Score			22	

Value:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 19,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a distance from	ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 36,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 71,000 gallons	16	0	16
n n	2 Year	15	12	9	6	3	0	Releases 123,000 gallons	12	0	12
5	5 Year	10	8	6	4	2	0	Releases 204,000 gallons	10	4	6
ш	10 Year	5	4	3	2	1	0	Releases 274,000 gallons	5	2	3
ote - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		11
Acronyms CSO - Combine FC - Fecal colife	ed sewer overflow						Corrected Score			18	

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge ar e distance from o	ia hydraulic model nd the GIS to designated
>	6 Month	25	20	15	10	5	0	No Release	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Release	0	0	0
and the	2 Year	15	12	9	6	3	0	No Release	0	0	0
ě	5 Year	10	8	6	4	2	0	No Release	0	0	0
u.	10 Year	5	4	3	2	1	0	No Release	0	0	0
te - This value si	heet calculates the aver	rage benefit over t	he recurrence inte	rvals. A correct	on calculation is i	ncluded in order	to obtain a	Average Total So	core		0
Acronyms CSO - Combine FC - Fecal colifo GIS - Geograph							Corrected Score		0		



alue:	Asset Pro	otection								Solution and Alterantives 1,	-, (o danio,	
		Measure				Im	pact			Rationale	Mos	surement Metho	d
		Flood	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stormwater BMPs can reduce stormwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Drainage models where a Customer Information Sy areas combined with the	ivailable, historic customer o stem, or historic observation expected relative impacts o	complaints from M
Performance Measures		Basemen	it Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 5 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 leet above ground surface, and basement floor are typically 8 - 10 feet below the first floor. A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods w hydraulic grade lines com	ill be via hydraulic models h pared to ground surface ele	o quantify the vations at manhok
Performano	Storm Events		-	Most Severe Impact				Least Impact	No Impact				
ď		+		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Score
	6 Month	Most	5	25	20	15	. 10	5	0		10	0	10
100	1 Year		4	20	16	12	8	4	0		12	4	8
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0		8	4	4
	10 Year	Least	1	5	4	3	2	1	0		5	3	2
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Average	Total Score		6



	ject #1							S_JT_	JT_NB01A_0	3_C			
alue:	Asset Pro	otection											
		Measure				Im	pact			Rationale	Mea	surement Metho	d
		Flood	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stormwater BMPs can reduce stormwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Customer Information Syl areas combined with the	vallable, historic customer c stem, or historic observation expected relative impacts o ster flows.	ns of flood-prone
Performance Measures		Basemen	it Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 feet above ground surface, and basement floors are typically. 8 - 10 feet below the first floor. A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods w hydraulic grade lines comp		
forman	Storm Events	1	•	Most Severe Impact				Least Impact	No Impact				
Per		ļ		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Score
	6 Month	Most	5	25	20	15	10	5	0		5	0	5
	1 Year		4	20	16	12	8	4	0		4	4	0
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0	124	8	6	2
	10 Year	Least	1	5	4	3	2	1	0		4	3	1
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Avera	age Score		3
- This value s	sheet calculates the a	verage benefit o	over the recurre	nce intervals. A corre	ction calculation is in	cluded in order to o	btain a maximum so	ore of 25.		Corre	cted Score		5



						Jefferso	ntown B	lending	Eliminati	on - Alteri	native 1		
Value:	Environmental 8	nhancement	THE REAL PROPERTY.										
Aspect	-5	-4	3	2	-1	0	So	oring				Assumptions	Score Per Aspe
Aquatic and Terestrial Habitat Protection	Eliminature of habital for race of erulangered species	Elimenation of argreficent anticast of common habitat	Simination of miner amount of common baddet	Significant habital imparament	Mirror imperament to extering trabital		Move annexement of emelog natital	Significant enhancement of emistrig habitet	Creation of manage amount of common habited	Creation of aignificant amount of common habitat	Creation of ortical hands for rare or endangered species	Place allowables restores Chargersh Res to interrobed agreen habitat, its nature	3 Score Per Aspe
Aesthetics - Solids and Floatables	77%- reduction in voticine of Time with no SSF papeurs	30 - 75% all flow with ris S&F (simplyal)	25 - 50% of flow with no Sal (emissal	10 - 25% of time with no SAF (emissed	Radices afficiency of easter 56F control device, 0 - 10% of few with no 56F removal	Oto change in SSF removal	6 - 10% of decharged few beater with positive SAF (emovel (ocreans)	IC-25 % of discretized for beared with positive SAF removal (accesse)	25 - 50% of discharged flow treated with positive DAF removal (accreens)	50 - 75% of discharged fine treated with positive SAF removal screens	75% + of decharged flow Vested with positive SAF removal (screens)	No setions will provide changes in S&F Removes	0
Aasthetica - Odor and Air Emissions	Create annoying oder source effecting # 20 outlemes often	Creeta anoxioni pider source effecting 120 customers offer or 120 customers occasionet	Drefit stranging later source affecting 430 crasses as acceptionally	Create stelectable able source affecting + 50 customers often	Create desecutive aday source affecting + 50 customers accessmely	No regact on orders	Elements describing other assures effecting 4 50 continues recasionally	(Simmate detectable silve source effecting + 50 customers often	Element energing ode source effecting +20 commerce occessorally	Co Strengt erroying othe source affecting 420 sourcement offers or 420 customers excessionally	Eliminate annuying odor source effecting +20 maisoners often	Other will be administed from all overflows along John triverspiler being elemented. Treatment Plant solves witnessed accept for more obrega and gump station polential.	. 3
Diasolved Oxygen Impacts	Heaterier of in drawn DO by 2 ergel - during critical fine paried	Continuous reduction of in- scream DD of 2 right +	Continuous reduction of an attended to 3 - 2 mgs, prosides reduction of an attended to 4 mgs during critical conditions.	Intermittent instruction of in attem DO 2 regit + presents sharing non-critical candidates. Instruction of DO 0 - 2 regit states without candidates.	transmittent (extluction of se street DO 0 - 2 mg/ possible starrag non-critical considerate	No CO engrace	Information topp overcome or extension DO 5 - 2 right	internations expressions of in-observations (20 graph - electrosters) colored coulders or a constant of the colored coulders (20 graph - 20 gra	Continuous ingressment of a examp DC 0 - 2 reg t references order orders more water 5-4 reg t	Conditions expressment of ex-	Gentinuous argoniument of critical consister in at earn D 2 mg/s	Place officers track detroaction will provide improvement of in operant DO 0 - 2 mg/L Dut extracts may dry up in automate.	(*)
Downstream Impacts	Title- pursue in social SOD or material sols	30 - 75% increase in encod. SCID or representations	25 - 50% increase in arrival 9000 or number licease	10 - 25% increase et minual 600 er nutrieri kaute (CSO - runsif)	Potential 0 - 10 % increase in ennual average BOD or hulters loads (CBO + nunef)	No impact on BOD or native seeds (CBO - naneff)	0 - 13% reduction in annual SCO or nutrient trade (CSO - nuncify	10 - 25% reduction in service 8000 or nutrient made (CEX + nutrief)	25 - 50% reduction in around 800 or traitien hads (CSO - hand)	50 - 75% reduction in annual BOD or hydrent leads (CBO - nuncit)	75% reduction in service 800 or human hada (CBO numb)	triproved regions and teatment of SSCs will provide G : 10 % reduction in sensel GCO or nutrient trasts (SSO + nutriel) downstream of Jefferbon County	1
Stream Flow Impacts (Peak flows)	29% - PORMA ROSER ROSE	10% - 25% Parreless in peak Boos	Up to 10% increase in pess fines	Frequent increase in flow dutin critical conditions	Possible recrease in everyge fire or meas increase in high fire peaks	his impact or year. Sows	Minor restaction in time - n arguitcom posit restaction	Non-reduction to peak flows under some condition	Up to 10% reduction in page.	(Ons - 25hs) eduction in peak Sires	25"ur vertucitori in peet fine	Fine peaks in he restured due in diversion of plant efficient.	3
Stream Flow Impacts (DWF only)	25"s- decrease in flow during collicial conditions.	13% - 25% decrease in fine during critical conditions	0-10% permanent decrease in fine during critical conditions	Frequent decrease in few darks orlical conditions	Fossible decrease in everage flow	File érgiact on average or érese straum Nov	Insertations increase in street few rest freet to other conditions	Internitions occupie in stream fine - often improve ordical conditions	0 - 10% partnered increase i s stream flow during critical conditions	In attent from during order conditions. In attent from during order conditions from during order conditions. Description and register reports between an authorized conditions.			0
Tream Flow 29%- Screen in Nov dump product (DVR) only) officer conducts. (L) Some seath all transfers for each of \$150 and \$150 a								**					
Aspect	Rationale						Measurement N	Method			1	otal Score (Default)	11
Aquatic and Terestrial Hebitat Protection	shape and characteristics	etc. Predictive models	used to evaluate wet we	h changes in base flow, pe eather control measures hi wate future positive and ne	ve a limited ability to ore	ee cover, channel dict biological diversity	and configuration, tree and other water quality	cover etc. Predictive y impects. Flow models	anges in channel shape models will address DO s will predict base flow inges in erosion and wate	Note: The total score c	alculated may be more	than 25. In the instances where this might occur, a default maxis	mum score of 25 w
Aesthetics - Solids and Floatables				overments in capture rates of and other control systems y, penalty points will be ass			all sites with control to will be estimated for all advanced treatment to	schnology, Improvement I alternatives that add a schnologies. Where tre					
leathetics - Odor and Air Emissions	Odors and air emissions by both the intensity and throm sewage handling fac	he quality of the oxfor. De	ige systems, pump stati electable and annoying	ons, force mains, and long are two common descripto	flat severs. Odors are s of different intensities	generally characterized and qualities of odors	intensity, quality, and g level of evaluation is neare circumstances. To estimated based on by	sewage handling fecilitis geographic spread. For of common, and will no the potential for odor an pical applications and n of events, average flow	planning purposes this the done except in very d air emissions will be sodel predictions for				
Rissolved Oxygen Impacts	Dissolved oxygen in stree	rrs is dependent on a val	riety of factors including	BOD load, nutrient load, a	ream flow velocity, water	r temperature, étc.	of various leading con-	rojects will be estimated	ires, etc. Probable				
lownstream mpacts	Downstream impacts refer been identified as the sour to get to the Gulf, but can i	ce of 30 - 45% of the total	al nutrient loads reaching	County, Nutrient loadings is g the Gulf of Mercico, BOD	the Chio (not just Jeffer is not likely to persist in	rson County) have the river long enough	Pollutant removals will average loads, since the and cumulative.	be estimated based on he downstream impacts	reductions in annual are primarily long-term				
itream Flow npacts (Fleak owe)	Extremently high peak flow make water based recreat	rs as are offen caused by ion unsafe or impractical	r urbanization of a water	shed can erode the stream	ibed, damage aquatic an	nd lerrestriel habitat.	sources, and the Wate	estimate flow peaking f r Quality Tool has a hyd during various storm ev	fraulic component to				
tream Flow	Diversion of flows ewey fro measures such as ground	m a stream due to abend water pumping can increa	dominent of a beatment ; sae base flows with benu	plant etc. can reduce base eficial results.	ferms in a stream. Altern	netively, other control	Predictive models can Water Quality Tool has flows during various dr	s hydraulic component	hidual sources, and the to estimate stream				
cronyma GC - Beargrass Cree OD - Biological sayge SO - Combined sawe	en demand		DO - Dissolved sxygen DWF - Dry weather flow ngft - Milligram per liter		S&F - Solids and floatable	es				1			



Pro	oject #1						S	JT JT N	IB01A 03	C		- 47 17 17 18	
Value:	Environmental I	Enhancement								_			
Aspect		1 4	- 4	1 4	1 1		Scr	oring			1	Assumptions	Score Per Asp
Aquatic and Ferestrial Habitet Protection		Services of algorithms amount of common habitat	Obvination of money amount of continues trabilities	Significant natified improvement	Minor important to existing habital	No interact on fullistat	Minor antencement of emiling habital	Significant entercement of entering facilities	Creation of minor amount of common habital	Creation of significant amount of common teorital	Creation of critical habitat for time or entergered species	Assumptions	Score Per Asp
Nesthefics - Solids and Floatables	79% reductor, or votupe of fine with no SRF coplure	50 / 75% of Soul with no SEE Immercial	26 - 60% of Box with the 387 (40%) of	10 - 25% of flow with no DEF	Reduces efficiency of easter SAF control device, 0 - 10% of fire with no SAF removal	o No change in S&F removal	0 - 10% of discharged from Inseled with positive SAF removal (occesse)	10 - 25 % of discharged for braned with positive S&F removal (Screens)	20 - 50% of decharged line heated with positive (IAF removal (SC mets.)	50 - 75% of discharged few trailed with positive (LEF removal acreers	75% - of decharged flow Yested with positive S&F removal (accesses)		
Aesthetics - Odor and Air Emissions	Oracle arrhoying other source offsching = 20 customers offer	Create anaroging older transfer affecting <20 customers often ar >20 customers occasional	Order arraying oder source effecting +20 customers sections unity	Oracle delectable oder anutra affecting + 50 outsenues often	Orana desectable oder source affecting + 90 sustaining occasionally	No engant on release	Elemente desectable odor enurce effecting + 50 customers rezestimely	Eliminate descrable scor ecurce affecting + 50 maximum other	Characte arraying oder autor affecting 420 continues screeningly	Elizabilis serviving odor source affecting 470 coatement other or +30 husbanness occasionals	Dimensia annoying rater source affecting +20 customers often		
Dissolved Oxygen mpects	Deduction of in strains DO by regit 4 during striking lister paris	Continues reduction of in-	Continuous reduction of in- alt wan DO of 5 - 2 raps, president respection of in- sit seen DO 2 - 4 raps studing tribial conditions.	entermitteed reduction of in all team DO 2 mgf + presides during non-unifical conditions, reduction of DO 0 - 2 mgf sturing critical conditions.	Internetiant reduction of in otherm DC 0 - 2 mg/t possible during inon-critical conditions	t No DO Impachi	International Improvement of the Street DO 0 - 2 mgs	inierrottent sryrsverhent in drukkeen DO 2 mg/ «, internittent critical condition regritements 0 / 2 mg/l	Curdinatus improvement of a stream DO 3 - 2 ingli, internition of fical carolities injurities are a line of the injurities are a line of the plant o	Commons approvement of in street DO 2 right #	Continuous Ingravement of Orlical condition in altern DO 2 right =		
ownstream npacts	75% no vega in arrust 500 or material teats	50 - 75% increase is simuel BOID or nutriant heats	26 - 50% bycomin in arrest BOD or restreet leads	10 - 25% increase in arrusti BCC or nutrient leads (CSC + runsf)	Principal 0 - 10 % increase in strough sverage 500 or rudnient heads (CSO + runoff)	No impact on SCO or nutrier teach (CSO = nutrief)	C - 10% reduction at annual BOD or nutrient hads (CBC + nand)	10 - 25% reduction in arread 8000 or nutrient kinds (CSC + nutrief)	25 - 50°s reduction in annual BOD or nutrient touch (CSO s runoff)	50 - 75% reduction in arread 800 or mathem leads (CSO + runoff)	This reduction is arrived 800 or nutrient hads (CSO - nutrieff)		
Bream Flow mpacts (Peak lows)	29% - exchess in past files	10% - 25% recrease in peak. Noise	Up to 10% increases in past from	Frequent recrease in fine during critical considerse	Preside increase in preriging flow, or many increase in high flow peems.	Me impact on year flows	Minor reduction in fines - n pignificant presi reduction	tions reduction in past.	Lip to 10% reduction in peek. Nove	10% - 25% reduction in past from	25% reduction in pask flows		
Stream Flow mpacts (DWF only)	25% decrease in few during professi conditions.	10% - 25% decrease in flow during critical conditions	O-10% permanent decreases in Sew during critical conditions	Frequent decrease in New Gains orising conditions	Parable decrease in everyone from	No impact on wverage or trate of eart fine	inserretient increase to stream fine - not timed to ordical conditions	triumittant ricrease III etresm flow - offen improve school conditions	0 - 10% permitners increases a site on the staring critical conditions	n 10 - 25 % parmenent increases in stream time during critical conditions	25%- permenant norsass or all sain flow fluring critical conditions.		
netructions: (1.) So otal score for this a	ore each alternative for alternative in this value.	each of the seven aspe (3.) Shaded area repres	ets of the value, Score ents "fetal flow". Alter	s can be positive or neg natives that score in this	ative, depending on the	e impact of the alternations.	etive on the value. (2.)	Total the acores for e	ach aspect to get the		Total	Rew Score Calculated	
Aspect	Rationale						Measurement N	Inthad				Corrected Score	
Aquatic and Escaptial Habitat Protection	Wel weather projects me shape and characteristic changes, emison impact	ry affect both equalic and a etc., Predictive models a etc., so surrogate metric	ierrestriel habital throug used to evaluate wet wi as must be used to estin	th changes in hase flow, pe eather control measures ha rate future positive and ne	eak flow, water quality, tr eve a firelled ability to pre gative impacts.	ne cover, channel dict biological diversity	and configuration, tree	v impacts. Flow models	models will eddress DO	Note: The total score of calculated.	alculated may be more	than 25. In the instances where this might occur, a d	rfault maximum score of 25 w
Aesthetics - Solids and Floetables	Most CSOs have some fi advanced treatment option well. White reduction is a	orm of solids and floatable one. Storm water retention colids and floatables remo	es control baffies, Impro n, constructed wellands val efficiency is not likel	overrents in capture rates of and other control systems y, penalty points will be ass	cen be expected with sor a may provide colids and respect if this is possible	eening or other Sostables removal as with any alternative.	all sites with control to will be estimated for a edvanced treatment to	chnology, improvemer I alternatives that add s schoologies. Where the	oy has been estimated to ds in removal efficiencies oreening or other atment is proposed for nated based on published				
wathetics - Odor nd Air Emissions	Odors and air emissions by both the intensity and from sewage handling far	the quality of the odor. D	age systems, pump stati detectable and annoying	ions, force mains, and long are two convision descripto	g flat sewers. Odors are rs of different intensities	generally characterized and qualities of odors	intensity, quality, and placed of evaluation is no rare circumstances. It estimated based on ty	sewage handling facilities geographic spread. For of common, and will not the potential for odor an pixal applications and not of events, average flow	plenning purposes this be done except in very d air emissions will be sodel predictions for				
Issolved Oxygen npacts	Dissolved oxygen in street	arra is dependent on a va	riety of factors including	BOD load, nutrient load, at	tream flow velocity, wate	or temperature, etc.	of various loading con-	uality Tool will be used to ditions, flows, temperati rojects will be estimated condition scenarios.	res, etc. Probable				
ownstream ripects	been identified as the sou	or to conditions in the Chic size of 30 - 45% of the tot have detrimental impacts	al nutrient loads reachin	County. Nutrient loadings i g the Gulf of Mexico. BOD	in the Ohio (not just Jeffe is not likely to persist in	reson County) have the river long enough	Pollutant removals will average loads, since the and comulative.	be estimated based on he downstream impacts	neductions in annual are primerily long-term				
ream Flow spects (Peak res)	Extremently high peak for make water based recrea	ws as are often caused b tion unsafe or impractice	y urbanization of a water	rshed can erode the stream	mbed, demage aquatic a	nd terrestrial habitat,	sources, and the Wate	estimate flow peaking (r Quality Tool has a hy- during various atorm en	draulic component to				
ream Flow spects (DWF only)	Diversion of films away for measures such as ground	om a stream due to alian dwater pumping can incre	donment of a treatment ase base flows with ben	plant etc. can reduce base eficial results.	flows in a stream. Alter	matively, other control	Predictive models can Water Quality Tool has flows during various di	a hydraufic componen	ividual sources, and the to estimate stream				
cronyma GC - Beargrass Cree 50 - Biological cryg- 50 - Combined sews	en demand		DO - Dissolved oxygen DWF - Dry weather flow right - Milligram per liter		S&F - Solids and floatet	iles							



					enerson	town Bie	naing E	liminatio	n Evaluat	tion - Alte	ernative	1	
Value:	Eco-Friendly	y Solutions											
Aspect	-5	-4	-3	-2	-1	0	I t	coring	3				
Non-Renewable Energy Consumption	Primary energy consumption is greater than secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treatment	Primary energy consumption equal to 15 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary treatment	No energy consumption except for cleaning and maintenance	Cleaning and maintenence not needed, no primary consumption	NA .	NA S	NA.	NA S	Assumptions Energy consumption needed for storage and pump station at the plant, 80% of flow pumped, secondary treatment still required and of pipe	Score Per Aspec
Use of Natural Systems	Constructed facilities permanently displace 5+ acres wetlands or 50% locally available green space	Constructed facilities permanently displace 3 - 5 acres wettands or 25 - 50% locally available green space	Constructed facilities permanently displace 1 - 3 acres wettands or 10 - 151 locally available green space	Constructed facilities permanently displace 0 - acre wetlands or up to 10% locally available green space	Constructed fecilities temporarily disrupt wetlands or green space	Alternative does not use or affect natural systems, wetlands, or green space	Alternative doesn not use natural systems, but enhances green space or wetland	Natural systems play a mino role in alternative function, up to 1 acre wedand or 10% additional green space created	Netural systems are significant part of alternative function, 1 - 3 scress of wettand created or 10 - 25% additional green space	Alternative fully uses natural systems, 3 - 5 scree of wetland created or 25-50% additional green space	Alternative results in multi- use natural system development, 5+ acres of welland or 50% additional green space	Construction would temporarily disrupt green space, but potentially allow new green space to be created at the existing plant size	1
Multiple-Use Facilties	Constructed facilities permanently aliminete recreational opportunity	Constructed facilities significantly impera recreational opportunity	Constructed facilities moderately impare recreational opportunity	Constructed facilities have minor impacts on recreational opportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Alternative improves access to existing recreational areas	Alternative has limited positive impact on recreation	Atternative significantly enhances recreational apportunities	Atternative increases recreational opportunities in area	Alternative results in multi- use facility	Portion of plant site could be converted to multi- use recreation when beatment process is decommissioned.	2
Source Control of subwatershed pollutant loads	increased by 50%	Polistant loadings are increased by 30 - 50%	Pollutant feedings are increased by 10 - 30%	End of pipe pollutent loadings are increased by 0 - 10%	End of pipe pollutent loadings impacts are inconsistent, but likely higher	End of pipe pollulant loading are unchanged	Diversion transfers more than 25% of pollutent loadings to less sensible receiving water	Diversion transfers more than 50% of pollutant bedings to less sensitive receiving water	Diversion transfers more then 75% of pollutent loadings to less sensitive receiving water	Diversion transfers more than 90% of pollutant loadings to less sensitive receiving water	Olversion transfers more than 100% of pollutant loadings to less sensitive receiving water	79% of pollutant loads transferred to Otio River, a less sensitive watershed.	3
Non-Obtrusive Construction Techniques	Permanent loss of green space or sensitive area disruption	Main thoroughfare closures, sensitive area temporary insruptions	Widespread dust and noise, blasting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, treffic tane closures	No construction expects	NA	NA	NA	NA	NA	Construction would cause localized dust and noise with street closures	-2
Consistent Land Use	Intrusive or nuisence fecilities inconsistent with neighborhood or land use.	Facilities incomistent with neighborhood or land use.	Facility characteristics mitigated to reduce impact on neighborhood	density or land use	Facility has minor impact on development density or land use	No impact on land use or no above ground facilities	Alternative mitigates existing compatibility problem	Alternative removes facility inconsistent with neighborhood	Alternative removes minance facility from neighborhood	Alternative enhances property values in neighborhood	Alternative provides enhancements that significantly improve neighborhood	Facilities on plant site will be reduced to a pump station and storage facility, eliminating the existing incompetable use of a treatment facility.	2
Impermeable Surfaces	S acres+ of impermeable surfaces are added	3 - 5 acres of impermestile surfeces are added	1 - 3 scres of impermeable surfaces are added	up to 1 acre of impermeable surfaces are edded	Minor increase in impermeable surfaces added	No change in impermeable surface	Minor reduction in Impermeable surfaces	Up to 1 acre of impermeable surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces rerroved	More than 5 acres of impermeable surfaces removed	No change in impermeable surface in all options	0
LEEDS Performance	NA.	NA	NA	NA	NA	LEEDS not applicable or LEEDS score <10	LEEDS Score 10 - 25	LEEDS Certified	LEEDS Silver	LEEDS Gold	LEEDS Platinum	LEEDS not applicable or LEEDS acore < 10	0
	tions; (1.) Score each alternative for each of the eight aspects of the value. Scores can be positive or negative, depending on the imp the total score for this alternative in this value. (3.) Shaded area represents "fatal flaw". Alternatives that score in this area should no					-							
Instructions: (1.) to get the total so	Score each alternat ore for this alternat	ive for each of the eightive in this value. (3.) S	nt aspects of the value haded area represents	. Scores can be posi a "fatal flaw". Alterna	tive or negative, depend tives that score in this	ding on the impact of th area should not be prop	e alternative on the va	due. (2.) Total the scores	for each aspect		Total Raw Score	Calculated	3
Aspect	Score each alternations for this alternat	ive for each of the eight live in this value. (3.) S	nt aspects of the value haded area represents	. Scores can be posi "fatal flaw". Alterna	tive or negative, depend tives that score in this	ding on the impact of th area should not be prop	Measurement M		for each aspect		Total Score (E		3
to get the total so	Rationale	live in this value. (3.) S	haded area represents	s "fatal flaw". Alterna	tive or negative, depend tives that score in this tives that score in this ergy consumption against con-	area should not be prop	Measurement M	Method		Note: The total score maximum score of 25 v	Total Score (E		3
Aspect Non-Renewable Energy	Rationale Eco-friently solutions w provides penalty points Netural systems replace	rould be expected to be low core for high energy consuming a	haded area represents consumers of non-renewable dernatives.	s "fatal flaw". Alterna	tives that score in this	area should not be prop	Measurement N Evaluation of primary energy energy consumed at the W Acres of wetlands and other	Method	taled, compared to the	Note: The total score of 25 v	Total Score (E	Default)	3
Aspect Non-Renewable Energy Consumption Use of Natural	Rationale Eco-friendly solutions we provides penetty points Netural systems replact various kinds. Options Eco-friendly solutions or	rould be expected to be low or for high energy consuming a concrete and steel construction that reduce welfands and gre	consumers of non-renewable determined and the consumers of non-renewable determined and the consumers are some space get penalty points as fair both water-based and	"fetal flaw". Alterna energy, Benchmarking one r legoons, constructed biase	arry consumption against con-	area a hould not be prop ventional secondary treatment notease green space of	Measurement N Evaluation of primary energy energy consumed at the W Acres of vettlands and othe subjective evaluation of the Subjective evaluation of ch	Method gy consumed per MG of flow try CWTP per MG treated. to hypes of green space created "basis" of the attenutive - "gre songer predicted in the aquatic increased base flow or decree	reled, compared to the or eliminated. Also includes en' or "gitey".	Note: The total score maximum score of 25 t	Total Score (E	Default)	3
Aspect Non-Renewable Energy Consumption Use of Natural Systems Aultiple-Use	Rationale Eco-friently solutions we provides penalty points when the provides penalty points were replaced with the provides penalty points when the provides penalty points with the provides and the provides a	rould be expected to be low or for high energy consuming a e concrete and steel construint that reduce wetlends and gre- resde recreational opportunities creation. Bird watching, his dis at the source through beh-	haded area represents consumers of non-renewable identitives. ction with well bettom storaged interestation with well bettom storaged interestation with well bettom storaged interestation with storaged interestation with the storage interestation	"fetal flaw". Alberna energy, Benchmarking ene r lagoons, constructed biass programme of the constructed biass special programme of the constructed special programme of the constructed special programme of the constructed	arry consumption against con-	area a hould not be prop ventional secondary treatment crease green space of wading, swimming str. would	Measurement II Evaluation of primary energy energy consumed at the W Acres of vettlands and othe subjective evaluation of the Subjective evaluation of cha- result of british water quality these cover or vegitated spec Modeled land-side poliutant	Method gy consumed per MG of flow try CWTP per MG treated. to hypes of green space created "basis" of the attenutive - "gre songer predicted in the aquatic increased base flow or decree	or eliminated. Also includes en' or "grey". or eliminated. Also includes en' or "grey". or riperials environment as a assell flow passia, increased feet by the BOC Water Qualific.	Note: The total score maximum score of 25 t	Total Score (E	Default)	3
Aspect Aspect Non-Renewable Energy Consumption Use of Natural Systems Autisple-Use acilities Source Control of subwatershed	Rationale Eco-friently solutions we provides penalty points Natural systems replace various kinds, Options Eco-friently solutions or too direct water-based re Controlling poliutant loss avoiding and of pipe the	rould be expected to be low or for high energy consuming a concrete and steel construct that reduce wellands and greater recreational opportunities reduce wellands and greater recreation. Bird watching, naid set the source through behaltment requirements.	haded area represents consumers of non-renewable identifiers ction with wet bottom storage en space get penalty points as for both water-based and any, taking, picnicing, campin evice modification, product n	"fetal flaw". Alterna energy, Benchmarking one lagoons, constructed bias- iparian recreation. Boeting iparian recreation. Boeting g etc., would be considered	argy consumption against com- wister, rain perdens etc. that in wister, rain perdens etc. that in concing, keyesting, fishing, related riperian recreation.	area a hould not be propertional secondary treatment of the properties of wading, swimming str., would are pollutarits thereby	Measurement II Evaluation of primary energy energy consumed at the W Acres of vettlands and othe subjective evaluation of the Subjective evaluation of the subjective evaluation of chromatil of britter water quality tree cover or vegitated (spa- Modeled land-eide poliutant Tool or by comparision to fit	Method by consumed per MG of flow try CWTP per MG treated. r hypes of green space created basis of the attension - "ye enges predicted in the equatic r, increased base flow or iterre rate areas ste. I loading reductions as calculat eresture values or pilot program babble construction impacts has babble construction impacts has	or eliminated. Also includes en' or "gitey". or riptey". or riptey'. or riptey's environment as a seed flow passia, increased interesting the properties of the interesting the properties of the interesting the properties of the interesting the properties of the interesting the interesting interesting the interesting the interesting the interestin	Note: The total score maximum score of 25 t	Total Score (E	Default)	3
Aspect ion-Renewable inergy consumption Jise of Natural pystems fulliple-Use acities fource Control of ubwatershed ollutant loads ton-Obtrusive construction echniques	Rationale Eco-friendly solutions we provides penelty points Natural systems replace vertous kinds. Options to be direct water and the conditions of the conditions. Probable conditions. Alternative configuration uply. The same pump s	rould be expected to be low to for high energy consuming a e concrete and steel constring to that reduce welfands and gire that reduce welfands and gire reads recreational opportunities coreation. Bird watching, his did at the source through behalter frequirements mpacts on traffic, noise and did train either enhance or detra	haded area represents consumers of non-renewable identitives. ction with wet bottom storage an spoce get penalty points as for both water-based and age, librage, penalty points evior modification, product or unit are all measures of the fi ct from the surrounding prop a residence than filts right in	"festal flaw". Albertsa energy, Benchmarking one lagoons, constructed bisss spaces of an abstractive splacements or stormwater splacements of an abstractive erty. For example, an extre erty. For example, an extre erty. Be neighborhood. If a	argy consumption against con- ergy consumption against con- erge, rain genders etc. that in protection of the control of the control construction impacts get pe mely unfriently pump station larger perceil of pump station	area should not be prop ventional secondary treatment, ventional secondary treatment, crease green space of weding, swimming etc. would are pollutants thereby matry points for creating	Measurement N Evaluation of primary snore energy consumed at the W Acres of wetfamets and othe subjective evaluation of the subjective evaluation of primary of the subjective of vegitated ripse Modeleid Band-side politicars Tool or by comparation to 8 Subjective evaluation of pri constitution envisioned for All the planning level, project	Method by consumed per MG of flow try CWTP per MG treated. r hypes of green space created basis of the attension - "ye enges predicted in the equatic r, increased base flow or iterre rate areas ste. I loading reductions as calculat eresture values or pilot program babble construction impacts has babble construction impacts has	or eliminated. Also includes err or "gley". or eliminated as a eased flow peeks, horeased to the BDC Water Quelin, measurements.	Note: The total score maximum score of 25 t	Total Score (E	Default)	3
Aspect Non-Renewable Energy Consumption Use of Natural Systems Aultiple-Use acities Source Control of uldwaters shed solutant loads Ion-Obtrusive Construction	Rationale Eco-friently solutions we provides penetly points Natural systems replace we would be a solution to be direct water-based to be direct water-based to be direct water-based or controlling poliulant bear working and of pipe their poliulant bear working and pipe their poliu	thee in this value, (3.) S rould be expected to be low or for high energy consuming a concrete and steel constraint of that reduce wetlends and girl reads recreational opportunities creation. Bird watching, na, did at the source through behat attempt requirements in the contract of the contract in the c	consumers of non-renewable stematives. It is not better at reason and a stemative service and points are against a stemative service and points are stematically product of the service modification, product or unit are all measures of the fact of them the surrounding proper a residence that tilts right in upration or office green space and the surrounding proper a residence or office green space.	"festal flaw". Albertsa energy, Benchmarking one plagoons, constructed bisss sparian recreation. Boating g etc. would be considered itendiness of an alternative. itendiness of an alternative. erty. For example, an extre with the neighborhood. If a added to enhance the neigh , and the total transport of	array consumption against com- array consumption against com- array consumption against com- array consumption against com- array consumption, keystaing, fishing, violated riperan recreation. Tennagement BMPs that capt. Construction impacts get pe rectly unfriendly pump station larger percel of land is evaluate Mountmood.	area a hould not be prop ventional secondary treatment. Accrease green space of weding, swimming etc. would are pollutants thereby and points for creating can be noisy, smally, and ale, a pump station can be	Measurement N Evaluation of primary snorg emergy consumed at the W Acres of vestlands and othe subjective evaluation of the subjective evaluation of pro- constitution envisioned for At the planning level, project surrounding properties. De	Method by consumed per MG of flow tre which is a present agues a created r hypes of green squice created "basis" of the attenuative - "gre songer predicted in the equatic is not created than flow or increa- tion areas etc. I loading reductions as calculated to the creative values or pilot progreen babble construction impacts her the attenuative. It can be defined to avoid nega- proving on the availability of le surages project definition and bus larges project definition and bus	or eliminated. Also includes err or "gley". or eliminated as a eased flow peeks, horeased to the BDC Water Quelin, measurements.	Note: The total score maximum score of 25 t	Total Score (E	Default)	3



Value:							S_JT_J	T_NB01/	A_03_C				
	Eco-Friendly	y Solutions											
Aspect	-5	-4	- 3	-2	-1	0	T 1	oring 2	1	4	5	Assumptions	Score Per Aspec
Non-Renewable Energy Consumption	Primary energy consumption is greater than secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treatment	Primary energy consumption equal to 15 - 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary treatment	No energy consumption except for cleaning and maintenance	Cleaning and maintenance not needed, no primary consumption	NA	NA	NA	NA	Energy consumption due to incresse in pumping	-1
Use of Natural Systems	Constructed facilities permanently displace S+ acres wellands or 50% lacelly available green space	Constructed facilities permanently displace 3 - 5 acres wettands or 25 - 509 locally available green space	Constructed facilities permanently displace 1 - 3 acres wellands or 10 - 151 locally available green space	Constructed facilities permanently displace 0 - 1 acre wetlands or up to 10% locally evallable green space	Constructed facilities temporarily disrupt wetlands or green space	Alternative does not use or affect natural systems, wellands, or green space	Alternative doesn not use natural systems, but enhances green space or wetlend	Natural systems play a mino role in ellernative function, up to 1 scre wellend or 10% additional green space created	Natural systems are significant part of alternative function, 1 - 3 acres of welland created or 10 - 25% additional green space	Alternative fully uses natura systems, 3 - 5 acres of welland crasted or 25-50% additional green space	Alternative results in multi- use natural system development, 5+ acres of welland or 50% additional green space.	Force Main construction temporarily disrupts green space	. 31
Multiple-Use Facilties	Constructed facilities permanently eliminate recreational opportunity	Constructed facilities significantly impare recreational opportunity	Constructed facilities moderately impairs recreational opportunity	Constructed facilities have minor impacts on recreational opportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Afternative improves access to existing recreational areas	Alternative has limited positive impact on recreation	Alternative significantly enhances recreational opportunities	Afternative excreases recreational opportunities in area	Alternative results in multi- use facility	No impact	0
Source Control of subwatershed pollutant loads	Pollutant loadings are increased by 50%	Pollutant loadings are vicreased by 30 - 50%	Pollutant loadings are increased by 10 - 30%	End of pipe pollutant loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely higher	End of pipe pollutant loadings are unchanged	Pollutant loadings impacts are inconsistent, but likely lower	Source control reduces pollutant loadings by 0 - 10%	Source control reduces pollutant loadings by 10 - 30%	Source control reduces pollutant loadings by 30 - 50%	Source control reduces pollutant loadings by more than 50%	End of pipe pollutant loadings impacts are inconsistent, but likely higher in all options	-1
Non-Obtrusive Construction Techniques	Permanent loss of green space or sensitive area disruption	Main thoroughfare closures, sensitive area temporary disruptions	Widespread dust and noise, blesting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, traffic lane closures	No construction impacts	NA.	NA	NA	NA	NA	Force main construction would result in minor dust and lane closures	-1
Consistent Land Use	Intrustive or nuisance facilities inconsistent with neighborhood or lend use.	Facilities inconsistent with neighborhood or land use.	Fecility characteristics mitigated to reduce impact on neighborhood	Facilies have significant impact on development density or land use	Facility has minor impact on development density or land use	No impact on land use or no above ground facilities	Attenuative miligates existing competibility problem	Atternative removes facility inconsistent with neighborhood	Alternative removes noisance facility from neighborhood	Atternative enhances property values in neighborhood	Atternative provides enhancements that significantly improve neighborhood	No impact on land use or above ground facilities in all options	0
Impermeable Surfaces	5 acres+ of impermeable surfaces are added	3 - 5 acres of impermeable surfaces are added	1 - 3 acres of impermeable surfaces are added	impermesble surfaces are	Minor increase in impermeable surfaces added	No change in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 acre of impermeable surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces removed	More than 5 acres of impermeable surfaces removed	No change in impermeable surface in all options	0
LEEDS Performance	NA	NA	NA	NA.	NA	LEEDS not applicable or LEEDS score <10	LEEDS Score 10 - 25	LEEDS Certified	LEEDS Silver	LEEDS GOM	LEEDS Pletinum	LEEDS not applicable or LEEDS score < 10 in all options	0
								lue. (2.) Total the score	s for each aspect		Total Raw Score	Calculated	-4
Aspect	Rationale						Measurement M	Method			Corrected 5	Score	. 4
Non-Renewable Energy Consumption	Eco-friendly solutions v provides penalty points	would be expected to be low for high energy consuming	consumers of non-ranewable afternatives.	energy, Benchmarking éne	ergy consumption against conv	entional secondary treatment	Evaluation of primary energy energy consumed at the W		wated, compared to the	Note: The total score maximum score of 25		ore than 25. In the instances where th	is might occur, a def
Use of Natural Systems	Natural systems replac various kinds. Options	e concrete and steel constru that reduce wetlands and go	ection with well bollom storage een space get penalty points	e legoons, constructed biox	vales, rain gardens etc. that in	crease green space of	Acres of wellands and other		d or eliminated. Also includes				
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		al systems replace concrate and afset construction with wet bottom storage legions, constructed bloowaites, rain gardens etc. that increase green space of is binds. Options that reduce wetlands and green space get penalty points. In the construction of the property of the construction						types of green space created "basis" of the alternative - "gre	een" or "grey".				
Multiple-Use Facilties	Eco-friendly solutions of be direct water-based of	reate recreational opportunt ecreation. Bird watching, his	ies for both water-based and king, bilking, picnicing, campi	riparism recreation. Boating ig etc. would be considered	, canning, kayaking, fishing, v related riparian recreation.	waiting, swimming atc. would	Subjective evaluation of ch	"basis" of the alternative - "gra anges predicted in the equation , increased base flow or decre	or riperien environment as e				
Multiple-Use	be direct water-based r	ecreation. Bird watching, his	king, biking, picnicing, campi	ng etc. would be considered	g, canoing, kayaking, fishing, v related fiparien recreation. management BMPs that capts		Subjective evaluation of chresult of better water quality tree cover or vegitated rips	"basis" of the alternative - "gra anges predicted in the equation , increased base flow or decre	or riperien environment as a exact flow peeks, increased ated by the BGC Water Quality				
Multiple-Use Facilties Source Control of subwatershed	be direct water-based a Controlling pollutant has avoiding and of pipe tre	ecreation. Bird watching, hill ads at the source through bel atment requirements	hang, bilding, picnicing, campi	ng etc. would be considered	related riparien recreation.	ire pollutants thereby	Subjective evaluation of characteristic defection where quality tree cover or vegitated rips. Modelind tand-side pollutar Tool or by companishes to 8	"basis" of the attendative - "girl anges predicted in the aquadic i, increased base flow or decre sen areas etc. I loading reductions as calculat erature values or gill of program hable construction impacts be hable construction impacts be	or riperian environment as a nased flow peaks, increased steed by the BGC Water Quality is measurements.				
Multiple-Use Facilities Source Control of subwistershed solidurant loads Non-Obtrusive Construction Fechniques	be direct water-based of Controlling pollutant to avoiding end of pipe tre Probable construction in nuisance conditions. Alternative configuration ugly. The same pump ugly.	ecreation. Bird watching, hill use at the source through bel- extreent requirements repeats on treffic, noise and on can either enhance or debra station can be "disguised" as	why, bithing, picricing, campin havior modification, product of dust are all measures of the to act from the surrounding pro-	ng etc., would be considered eplecements or stormwester therefiness of an alternative perty. For example, an extre with the neighborhood. If a	related riparien recreation. management BMFs thet capti Construction impacts get pe metry unfoendly pump station larger percei of land is evaleties.	ore pollutants thereby makly points for creating	Subjective errabation of chreated of bottler water quality tree cover or vegitated rips. Modeled land-side politism. Tool or by comparison to it. Subjective errabation of processing tools are subjective expension of processing the construction envisioned for At the planning level, projective.	"basis" of the attendative - "girl anges predicted in the aquadic i, increased base flow or decre sen areas etc. I loading reductions as calculat erature values or gill of program hable construction impacts be hable construction impacts be	or riparian environment as a exact flow peaks, increased and by the BGC Water Quality in measurements. seed on the type of safer impacts on the active impacts on active impacts on active active impacts on active impacts on active active impacts on active impacts on active active impacts on active active active active active active active active active active active active active active active active active acti				
Multiple-Use Facilities Source Control of subwatershed soliutant loads	be direct water-based of Controlling pollutant has excising and of pipe for Probable constituction rule some conditions. Alternative configuration togly. The same pump indicentions was Adding importmeable as Adding importmeable as	ecreation. But watching, hill as at the source through between requirements requests on treffic, noise and in can either enhance or detir station can be "disguised" as discaping, and a community whereas increases total runoff	why, bithing, picricing, campin havior modification, product or dust are all measures of the sect from the surrounding prop a residence that the right in periden or other green space	ng etc., would be considered eplecements or stormwester eplecements of an alternative intendificess of an alternative eith the neighborhood. If a added to enhance the neigh es, and the lotal transport of	related riparien recreation. menegement BMPs that capture and the capture and	ore pollutants thereby mally points for creating can be noisy, smelly, and le, a pump station can be	Subjective evaluation of chi result of better water quality thes cover or vegitated rips the cover or vegitated rips Modeled land-side pollutar Tool or by comparision to 8 Subjective evaluation of pro- construction envisioned for At the planning level, project surrounding properties. De- position, This aspect encour	Tossis of the alternative - "girl progress predicted in the aquetic increased base flow or decre fair erease etc. Lossling reductions as calculat lossling reductions as calculat erature values or pilot program beable construction impacts be the alternative. In can be defined to avoid neg project definition and but progress project definition and progress project progress project progress project progress project progress project progress project progress project progress project project progress project progress progress project project project progress p	or riparian environment as a exact flow peaks, increased and by the BGC Water Quality in measurements. seed on the type of safer impacts on the active impacts on active impacts on active active impacts on active impacts on active active impacts on active impacts on active active impacts on active active active active active active active active active active active active active active active active active acti				

Cluster Comparison

Project #1: S_JT_JT_NB01_01_C_A (Alternative 2)

Raw Benefit Score²

CSO/SSO ID		Regulatory Performance	Public Health	Asset Protection	Environmental Enhance	Eco-Friendly Solutions
ISO28		21	22	10	2	0
28390		5	7	10	2	0
31733		21	20	10	2	0
28395A		5	3	10	2	0
64505		5	3	10	2	0
MSD0255		0	0	10	2	0
28392		0	0	10	2	0
28391		0	0	10	2	0
28173		0	0	10	2	0
64096		21	8	5	4	-4
86052		21	22	5	4	-4
92061		0	0	5	4	-4
MSD0263		21	18	5	4	-4
Weighting Factor		8	10	6	8	6
Weighted Benefit Score		960	1030	660	272	-96
Total Benefit Score	2826					
Total Capital Cost ³	25798000					
Total Present Worth Costs ³						
Weighted Benefit/Cost Ratio (Capital Costs) Weighted Benefit/Cost Ratio (Total Present Worth Costs)	10.954338 #DIV/0!			Nother transfer or the		

Notes:

- 1. Data Input Cells are highlighted in yellow
- 2. Raw Benefit Scores for Regulatory Performance and Public Health values are from the CSO or SSO Level of Control Benefit Sheets
- 3. Capital and Total Present Worth Costs from the "Proj Summary" Page of the Cost Model for the clustered alternative

(Reference

JT NB01 BCA Q Qxis

2-Year

Jeffersontown Blending Elimination Plan - Original IOAP, Alternatives 1, 2, 3 (all the same)

	Measure		In	npact	/ Freq	uency	-	Rationale	Meas	urement Met	nod
Performanc e Measure	SSOs	6 month	1 Year	2 Year	5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO disc		: models to
	Value	25	12	0	4	1	0				
	ISO28	BL			PR				25	4	21
	28390			BL	PR				9	4	5
cy	31733	BL			PR				25	4	21
enc	28395A			BL	PR				9	4	5
Frequency	64505			BL	PR				9	4	5
F	MSD0255						BL		0	0	0
	28392						BL	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	0	
	28391						BL		0	0	TAN
	28173						BL		0	0	
ote - This v	alue sheet calcula	ites the tota	I benefit.					3. 1. 7			

	Measure		Ir	npact	/ Freq	uency	T	Rationale	Mooo	urement Met	h a d
Performanc e Measure	SSOs	6 month	1 Year	2 Year	5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO disc	s will be via hydraulie	
	Value	25	16	9	4	1	0				
uency	64096	BL			PR				25	4	21
lank	86052	BL			PR				25	4	21
Freq	92061						BL		0	0	0
_	MSD0263	BL			PR				25	4	21

/alue:	Public Hea	alth Enhar	cement -	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a distance from	ria hydraulic model nd the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 900,000 gallons	25	0	25
Frequency	1 Year	20	16	12	8	4	0	Releases 2,000,000 gallons	20	0	20
and and	2 Year	15	12	9	6	3	0	Releases 3,080,000 gallons	15	0	15
ē	5 Year	10	8	6	4	2	0	Releases 4,600,000 gallons	10	6	4
u.	10 Year	5	4	3	2	1	0	Releases 5,720,000 gallons	5	4	1
ite - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	tion calculation is i	ncluded in order	to obtain a	Average Total S	core		13
Acronyms CSO - Combine FC - Fecal colife	d sewer overflow							Corrected Sco	re		22

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a distance from (ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
ane	2 Year	15	12	9	6	3	0	Releases 63,000 gallons	12	0	12
ě	5 Year	10	8	6	4	2	0	Releases 167,000 gallons	8	2	6
u.	10 Year	5	4	3	2	1	0	Releases 248,000 gallons	5	2	3
ta - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		4
FC - Fecal colife	d sewer overflow							Corrected Sco	re		7

Value:	Public Hea	alth Enhar	ntown Ble	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a distance from	
25	6 Month	25	20	15	10	5	0	Releases 80,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 172,000 gallons	16	0	16
ž	2 Year	15	12	9	6	3	0	Releases 269,000 gallons	15	0	15
9	5 Year	10	8	6	4	2	0	Releases 393,000 gallons	10	2	8
щ	10 Year	5	4	3	2	1	0	Releases 495,000 gallons	5	2	3
ximum score of	heet calculates the aver	rage benefit over t	he recurrence inte	rvais. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total So	core		12
FC - Fecal colife	d sewer overflow							Corrected Sco	re		20

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the	SSO discharge are distance from o	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
a a	2 Year	15	12	9	6	3	0	Releases 2,000 gallons	3	0	3
ē	5 Year	10	8	6	4	2	0	Releases 31,000 gallons	4	0	4
ш	10 Year	5	4	3	2	1	0	Releases 46,000 gallons	2	1	1
te - This value st	neet calculates the ave	rage benefit over ti	he recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total So	core		2
Acronyms CSO - Combined FC - Fecal colifor	sewer overflow						-17	Corrected Sco	re		3

/alue:	Public Hea	alth Enhar	cement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement l	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000.49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge ar e distance from d	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
n n	2 Year	15	12	9	6	3	0	Releases 13,600 gallons	3	0	3
ē	5 Year	10	8	6	4	2	0	Releases 170,000 gallons	8	2	6
ш	10 Year	5	4	3	2	1	0	Releases 282,000 gallons	5	2	3
te - This value s	heet calculates the ave	rage benefit over t	he recurrence inte	orvals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total So	core		2
Acronyms CSO - Combine FC - Fecal colifo	d sewer overflow	100						Corrected Sco	re		3

Value:	Public Hea	alth Enhan	ncement -	SSOs							
	Measure			Releas	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a e distance from	
25	6 Month	25	20	15	10	5	0	Releases 600 gallons	5	0	5
Frequency	1 Year	20	16	12	8	4	0	Releases 16,000 gallons	4	0	4
ž	2 Year	15	12	9	6	3	0	Releases 55,000 gallons	12	0	12
9	5 Year	10	8	6	4	2	0	Releases 123,000 gallons	8	4	4
ш	10 Year	5	4	3	2	1	0	Releases 160,000 gallons	4	3	1
aximum score of	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total So	core		5
FC - Fecal colife	d sewer overflow							Corrected Sco	re		8

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the	SSO discharge a re distance from (ia hydraulic model nd the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 155,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 223,000 gallons	20	0	20
ž	2 Year	15	12	9	6	3	0	Releases 292,000 gallons	15	0	15
5	5 Year	10	8	6	4	2	0	Releases 360,000 gallons	10	2	8
ш	10 Year	5	4	3	2	1	0	Releases 405,000 gallons	5	2	3
ximum score of	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total Se	core		13
FC - Fecal colifo	d sewer overflow							Corrected Sco	re		22

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact		,	Rationale	Mea	surement	Method
Performance Measures	\$SOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act- Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge are distance from (
>	6 Month	25	20	15	10	5	0	Releases 36,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 71,000 gallons	16	0	16
n n	2 Year	15	12	9	6	3	0	Releases 123,000 gallons	12	0	12
9	5 Year	10	8	6	4	2	0	Releases 204,000 gallons	10	4	6
ш	10 Year	5	4	3	2	1	0	Releases 274,000 gallons	5	2	3
te - This value s	sheet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total So	core		11
Acronyms CSO - Combine FC - Fecal colife	ed sewer overflow							Corrected Sco	re		18

Value:	Public Hea	alth Enhar	ncement -	SSOs					- 4		
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gais	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge ar e distance from (ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	No Release	0	0	0
requency	1 Year	20	16	12	8	4	0	No Release	0	0	0
ne	2 Year	15	12	9	6	3	0	No Release	0	0	0
ē	5 Year	10	8	6	4	2	0	No Release	0	0	0
II.	10 Year	5	4	3	2	1	0	No Release	0	0	0
aximum score of	heet calculates the ave	rage benefit over t	he recurrence into	rvals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total S	core		0
FC - Fecal colife	d sewer overflow	4						Corrected Sco	re		0



ue:	Asset Pro	tection								Solution and Alterantives 1,			
	- 1	Measure				Im	pact			Rationale	Mea	surement Metho	d
		Flood	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stomwater BMPs can reduce stomwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Customer Information Sys areas combined with the e	vailable, historic customer o stem, or historic observation expected relative impacts o ster flows.	ns of flood-prone
Performance Measures		Basemer	it Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 feet above ground surface, and basement floors are typically 8 - 10 feet below the first floor. A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods wi hydraulic grade lines comp	Il be via hydraulic models to pared to ground surface elec	
rforman	Storm Events	1	•	Most Severe Impact				Least Impact	No Impact				
Pe		1		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Score
	6 Month	Most Likely	5	25	20	15	10	5	0		10	0	10
	1 Year		4	20	16	12	8	4	0		12	4	8
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0		8	4	4
	10 Year	Least	1	5	4	3	2	1	0		5	3	2
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Average	Total Score		6



	ject #1							S_JT_	JT_NB01A_0	3_C			
alue:	Asset Pro									And the second second			
		Measure				Im	pact			Rationale	Mea	surement Method	d
		Flood	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stormwater BMPs can reduce stormwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Customer Information Sys	evailable, historic customer of stem, or historic observation expected relative impacts of after flows.	ns of flood-prone
Performance Measures		Basemen	nt Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 feet above ground surface, and basement floors are typically 8 - 10 feet below the first floor. A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods w hydraulic grade lines comp	ill be via hydraulic models to pared to ground surface ele	o quantify the vations at manhole
forman	Storm Events	1	•	Most Severe Impact				Least Impact	No Impact				
Per		ļ		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Score
	6 Month	Most	5	25	20	15	10	5	0		5	0	5
	1 Year		4	20	16	12	8	4	0		4	. 4	0
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0	The state of the s	8	6	2
	10 Year	Least	1	5	4	3	2	1	0		4	3	1
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Aver	age Score		3
Acronyms	sheet calculates the av	verage benefit	over the recurre	ence intervals. A corre	ction calculation is in	cluded in order to o	obtain a maximum sc	ore of 25.	-	Corre	cted Score	12	5



Value:	Te .					Jenersc	MOWN B	nending	⊏iiminati	on - Alterr	lative 2		
	Environmental E	Enhancement											
Aspect	- 3	1 4	1 3	-2	-1		So	oring 2	1	1			
Aquatic and Terestrial Hebitat	Commission of habital for care o	Commission of arguidous	(Dimination of critical amount		Miner imperament to evalue	Contractor to the Contractor	More entrancement of	Significant enhancement a	Creation of morer amount of	Creation of algorithmus amount	Greaten of critical habital for	Assumptions	Score Per Anne
rotection	endangered species	actioned of common metabolic	of conseives tradulate	Significant habitat inglerement	habitel	File imprect on Netotal	Minut enflactument of existing habites	westing hapitet	continues habitat	of comment habital	rais or endangered species	Plant Rose reduced that risk attrimated, Shaly minor impacts on existing habital during compliantion.	-1
esthetics - Solids	9 795+ reduction in entures of	SO - 75% of flow with no 656	25 - 50% of fire with no 540	10 - 25% of four with me DAF	Reduces efficiency of estation	•	0 - 10% of decharged fine	10 - 25 % of dactor ped for	25 - 50% of discharged flow	50 - 75% of destroyed fine	75% - of decharged flow		
nd Floatables	few with tio SSF pagazin.	terroral	PRITICIPAL	removal	SAF control device. 0 - 10% of flow with no SAF removed	his charge in S&F remove	Yeared with positive SEF removal (screens)	tracted with positive SAF (amount (screens)	Penind with positive SEF removel (screens)	treated with positive S&F	removal (screens)	his options will provide stranges in SAF Removal	0
17450 W. S.							The state of the s	Annahari Bar	AND TO SHARE THE	2000			
Aesthetics - Odor and Air Emissions	Create envoying oder source effecting > 20 contenues often	effecting +20 outlaners ofter	Crette arraying other south infecting +35 customers recessoratly	Create detectable only source affecting + 50 customers when	Create detectable spor source affecting + 50	Na impact on sales.	Eliminate detectable odor source affecting + 50	Eliminate detectable odor source affecting = 50	Elicanete suncyting odor source affecting <20 contement	e (Brende arraying othe south effecting +20 customers often, or +20 customers accessively	Eliminate annoying odor source effecting +20	Offer will be stimulated from all enwittenes along Johan interceptor being elemented. Treatment Plant outpre will be reduced due to each reduction and plant upgrades. New tectation for potential mover planage and pump indoors attacking potential.	
		# 120 success scottored	f, seconorally		customers accessorably		customers recurrently	customers often	оскинийу.	or +20-customers economiety	customers often	Incubon for potential mover storage and pump index ataken potential	
			Continuous reduction of in-	Intermittent restuction of in	essential programme			Annual transfer and the second second	Contractor	.1			
Dissolved Oxygen Impacts	Reduction of instream DO by 2 mg1 + during enficial Sew period	Continuous restaction of in-	Attent DG of A - 2 right possible reduction of in-	alream DO 2 mg/l + possible during nen-critical conditions, reduction of DO 0 - 2 mg/l during	triermitent reduction of in streem DO 0 - 2 night processes	Ne DO ingracit	in steam DO 0 - 2 mgd	in as van DO 2 mpt •.	At early DQ 0 - 2 regit.	Continuous improvement of in-	Continuous improvement of orfices condition in-sites of DC	Phot efficient need restriction may will provide improvement of excitages DO 0 - 2 and 1	,
Inpacts			streets DO 2 - 4 mg5 ituring unifical constitute.	reduction of DO 0 - 2 mgf during orthogo conditions	during non-critical conditions		mereum CO 0 - 2 mgs	internations critical condition improvements 0 - 2 mg/l	ingrovements 3-4 mg1	streen DO 2 mg1 •	2 mgt +		
									1			l I	
Downstream				10 - 25% recrease transpar	Potential 8 - 10 % pursuance in				25 - 50% reduction in words	50 - 75% reduction in around	Titler reduction in annual		
Downstream Impacts	75% recrease in arount ECO or GUNERO leads	50 - 75% increase in enrice! BOD or nutrient heads.	25 - 50% increases in anyone 800 or nutrient loads	800 or nutries treds (CSO + nutries)	arrust everage \$00 or putient loads (CBC + nunef)	No impact on 800 or nutrie loads (CSO + runoff)	SOO or nutrient freets (CSC	800 or natives leads (CSO	33 - 50% reduction in arount 800 or nutrient losses (CSO - runol)	SOD or nutrient leads (CSO -	500 or nutrient leads (CSO)	Improved capture and treatment of SSOs will provide 0 - 10 to reduction in annual BCO or nutrient tests (BSO - number) operate sens of Jefferson County	1
Stream Flow						and the same	- Januari	· riznak)	rund)	(unaf)	nuvel)	The second secon	
mpacts (Peak	20% - norwess in past, Sout.	20% - 20% recreme in peak.	Up in 10% increase in post	Frequent increase in fige dums critical conditions.	Possible increase in everage Now or never increase in high	No report on past fows	Moor reduction in flows - in	Miner reduction in peak. Sows under some condition	Up to 10% reduction in page.	10% - 25% reduction in peak	200 reduction in case bu-	Firm posts to be reduced due to partial diversion of plant afficent.	2
lows)				trincer conditions.	Son pents		significant peek reduction	Rows under some condition	fret	Scot		The party to be reported by a special or party and a special or part	*
Stream Flow Impacts (DWF only	25%+ decrease in few during	10% - 25% decrease in flow during critical conditions.	o flow sharing critical	Frequent decrease in flow during ordinal conditions	Possible decrease in everage	Ne impact on everage or	presentant incresse in	Street for - other increve	D - 10% permanent increase in atream fine during critical	n steam few during critical	2014* permanent increase in all semi few during critical	Date for substantially reduced	-2
impacts (LIVI) only	A Crace continues.	during critical contrastric	conditions	Committee Chesolithics	Sow	trans alream Spe	critical conditions	critical conditions	conditions	conditions	conditions.		-
instructions: (1.) Si	core each atternative for atternative in this value.	each of the seven sope	ets of the value. Score	es can be positive or neg	etive, depending on the	impact of the altern	stive on the value. (2.)	Total the scores for as	sch aspect to get the		Fastel	Raw Score Calculated	
lotal score for this	affarmative in this value.	(3.) Sheded area repres	ents "fatal flaw". Alten	natives that score in this	eres should not be pro	posed.					1000	naw score Carculated	3
							In the second	oworene			T	ital Score (Default)	-
Aspect	Rationale						Measurement N	Method				nai seria (carant)	2
							Decine deficition con-	specifically address chi					
Aquatic and	Wet weather projects may	y affect both aquatic and	terrestrial habitat throug	h changes in base flow, pe	ak flow, water quality, to	ne cover, channel	and configuration, tree	cover etc. Predictive i	models will address DO	Note: The total acres of	to stated may be seen	than 25. In the instances where this might occur, a default maxi-	
Terestrial Habitat	changes, arosion impacts	etc. Predictive models etc., so surrogate metri	used to evaluate wet we ca must be used to estin	nether control measures he nete future positive and ne	we a limited ability to pre- onlive impacts.	dict biological diversity	and other water quality and peak flow rates to	y impacts. Flow models allow estimates of cha-	will predict base flow noss in erosion and water	calculated.	ncomed may be more	man 20. In the meanices where this hoghi occur, a deraon maxis	mum score or 25 wi
N. S.	The second second second			-			surface area.		MILES CONTRACTOR				
							La Contraction	-0.00					
				consents to contrast out of		and the second	all sites with control te	stables removal efficien chnology, Improvemus	oy has been estimated to to in removal efficiencies	1			
	Most CSOs have some for	om of anists and finalehile	and consistent hardfore. Second	Authorities to carbinita cares o	au be exbected with etc.	rening or other	will be entiremented for all	atternatives that add so	creening or other	1			
Aesthetics - Solids	Most CSOs have some for advanced treatment option	ns. Storm water retentio	 constructed wetlends. 	and other control systems	mey provide solids and	ROBLEDIES FEITSZYBL BS	will be appropriated for an	Andrews to the state of		1			
Aesthetics - Solids and Floatables	advanced treatment option	ns. Storm water retentio	 constructed wetlends. 	and other control systems y, penalty points will be ass	mey provide solids and essed if this is possible	with any alternative.	advanced treatment to storm water discharge	chnologies. Where the	streent is proposed for				
Aesthetics - Solids and Floatables	advanced treatment option	ns. Storm water retentio	 constructed wetlends. 	and other control systems y, penalty points will be as:	may provide solds and essed if this is possible	with any alternative.	advanced treatment to	chnologies. Where the	streent is proposed for nated based on published				
Aesthetics - Solids and Floatables	advanced treatment option	ns. Storm water retentio	 constructed wetlends. 	and other control systems y, penalty points will be ass	may provide solids and essed if this is possible	with any alternative.	advanced treatment to storm water discharge	chnologies. Where the	streent is proposed for				
Aesthetics - Solids and Floatables	advanced treatment option	ns. Storm water retentio	 constructed wetlends. 	and other control systems y, penalty points will be ass	may provide solids and eased if this is possible	with any alternative.	advanced treatment to storm water discharge	chnologies. Where the	streent is proposed for				
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Pro	oject #1	LH.					S	JT JT N	IB01A 03	C			
Value:	Environmental E	nhancement								_			
Aspect	-5	-	1	-2	1 -1	0	Soc	ring	1 3		1 4 1	Assumptions	Score Per Aspect
Aquatic and Torestrial Habitat	Elementary of habitat he care of	Commander of arginificant	December of many way on	Services testing in an exercise	Minor impaisment to existing		Mayor enhancement of	Spoken enecessor of	Creator of more amount of	Creation of aignificant amount	Creation of critical habitanter	Pasteriganus	acute ret Aspect
Protection	entarge et species	writing of community helical	all investors features	DESCRIPTION DESCRIPTION			existing habital	emiting habital	common habited	of common habital	rare or entangered species		
Asstructics - Solids and Floatables	75%- reduction in volume of flow with no DEF cophura	50 - 75% of fine with no SAF temoval	29 - 80% of Sent with no SSZ removal	10 - 25% of flow with no BAF removal	Reduces efficiency of easter SAF control stevice. 0 - 10% of fine with no SAF computer	No change is SSF remove	0 - 10% of decharged flow travial with positive SAF removal (screens)	10 - 25 % of dacharged for treated with pusitive SSF rangest (screens)	25 - 50% of decharged five tracked with positive DSF removal (screens)	SQ - 75% of docturged flow 3 usted with positive SAF (winoval screens)	75% - of decharged Sow 9 nated with positive SSF removal (screens)		
Aesthetics - Odor and Air Emissions	Create arroying oder source effecting + 20 outsimes when	Create annoying sider siture effecting <20 toxonwers often or > 20 toxonwers occurred	Credin annuying lidar source shacing +20 customers stronomety	Create detectable oder approx effecting > 50 pussement after	Oresis desociativa odor soutra affecting + 50 customers occasionally	No impact on adore	Elementa delectable other source effecting + 50 collisioners occasionally	(3mmain detactable infor nounce affecting = 50 nucleomers other	Elevan swojeg oder souts affecting 420 stationers sociationally	Eliminate servoying oder source effecting +25 customers often or +25 customers occasional	e Eliminate arrusping otto empre effecting -22 y coatemers often		
Dissolved Oxygen Impacts	Reduction of an area in DO by angle 4 during afficial flow parties	Continuous reduction of in- sansian DC-oC2 (ng/) =	Continuous reduction of in- sistems DC of B - 2 mg/, presenting reduction of in- sistems DC 2 - 4 mg/s fairing to facul constitute.	bitemitiant induction of in streem DO2 right investiga- during ten-critical conditions, relaction of DO 0 - 2 mg/l durin critical conditions.	triamatient reduction of an stream DO 0 - 2 mg/ possible gliveing transcritical conditions	No DO equada	Intermittent improvement of in-szeem DO 5 - 2 mg/l	toleroither's ingruinement or measure DO 2 mg/s - measurables of clicked condition ingrowmants D - 2 mg/s	Continuous improvement of in atheir DO P-2 rings, interesting official continuo improvements 3-4 rings	Otrahusus angulawanend of all obvious DO 2 mg8 =	Gardenman Ingrovement of orficel condition in stream DO 2 mgf +		
Downstream Impacts	25% increme in service 800 or outlier trads	50 - 75°s ingresse in smorel 800 or nutrationals	25 - 50% increase to arrest BCC or restant leads	10 - 25% increase in annual 800 or number leads (CSO + surefy	Principal D- 12 % explaine in strough sowings 800 or nutries leads (CSO + sunoff)	has impact on BCD or reafter leads (CBC + name?)	C - 10% reduction in annual 8000 or nutrient leads (CBC + stands)	10 - 20% reduction in arrea 600 or relinent leads (CSC + riesaft)	25 - 50% reduction in annual SOD or nutrient trade (CSO + number)	SC - 75% reduction in arroad BCD or nutrient tools (CSC - tunol)	70% reduction in armust 800 or nutrient leads (CSO = runst)		
Stream Flow Impacts (Peak flows)	25% - Annesse in peak flows	10% - 25% normens in peak from	Cip to 10% increases to peak from:	Prequest retreate is fine duri critical conditions	Promitive increase at energy Now, at more increase in high New years.	his report on poss hows	Minor reduction in times - in significant peak reduction	Morpe reduction in peak. None under some condition	Lip to 10% reduction in peak Since	10% - 25% reduction is peek firms	20% reduction in past flows		
Streem Flow Impacts (DWF only)	25he decrease in few during critical conditions.	10% - 25% dacressa in line during critical conditions	0-10% permaneni decresse in fine during critical conditions	Frequent decrease in flow during critical conditions	Passible decrease in swerage flow	No krypect on everage or taken at each flow	interniberd increase to gream lips - not threat to critical conditions	triammillant trus ages to stream flow - offers improve or their conditions	0 - 10% parmaneni increase in atreen fine storing critical conditions.	10 - 25 % permanent increase in obsess flow during critical conditions	25% personed no were in stream five sharing critical conditions		
Instructions: (1.) So total score for this r	ors each alternative for elternative in this value.	each of the seven espe (3.) Shaded area repres	ets of the value. Score	s can be positive or neg natives that score in this	ative, depending on the area should not be pro-	s impact of the sitem sposed.	ative on the value. (2.)	Total the acores for a	sch aspect to get the		Total F	law Score Calculated	4
Aspect	Rationale						Measurement N	Anthod				corrected Score	
Aquatic and Terestrial Habitat Protection	shape and characteristic	sets. Predictive mudels	used to evaluate wat we	h changes in hose films, p atther control measures h arts future positive and ne	eve a limited shifty to pre	ee cover, chanyel dict biological diversity	and configuration, tree	cover etc. Predictive	anges in channel shape models will editions DO s will predict base flow nges in erosion and water	Note: The total score of calculated.	alculated may be more t	over, 25. In the Instances where this might occur, a defe	uff maximum score of 25 will be
Asstruction - Solids and Floatables	advanced treatment optic	ns. Storm water retentle	in, constructed wetlands.	venents in capture rates and other control system , penalty points will be as	s may provide solids and	floatables removal as	all sites with control to will be estimated for a edvenced treatment to	chnology, Improvement I elternatives that add a schoologies. Where the				Legal E	
Assthetics - Odor and Air Emissions	Odors and air emissions by both the intensity and from sewage handling fac	the quality of the odor. D		ons, force mains, and lon are two common descripte			d intensity, quality, and placed of evaluation is no rare circumstances. The estimated based on ty	vewage handling facilities geographic spread. For of common, and will not be potential for odor ar- pical applications and not events, average flow	planning purposes this the done except in very id air emissions will be radel predictions for				
Dissolved Oxygen Impacts	Dissolved asygen in stree	ema is dependent on a ve	every of factors including	BOD load, nutrierd load, r	tream flow velocity, wate	or temperature, etc.	of various loading con	fitions, flows, temperat rojects will be estimater	to estimate the impacts ures, etc. Probable 6 based on comperisons				-
Downstruem Impacts	Downstream impects refe been identified as the sou to get to the Gulf, but can	rce of 30 - 45% of the to	tal nutrient loads reachin	County, Nutrient loadings g the Gulf of Mexico, BOI	in the Ohio (not just Jeffe) is not likely to persist in	mon County) have the river long enough		be estimated based or he downstream impacts	reductions in annual are primarily long-term				
Stream Flow Impacts (Peak flows)	Extremently high peak for make water based recrea	es as ere often caused to tion unsafe or impractica	by urbanization of a water	rshed can erode the stree	mbed, damage aquatic a	nd terrestrial habitat,		estimate flow peaking! or Quality Tool has a hy during various storm e	drawlic component to				
Stream Flow Impects (DWF only)	measures such as ground	om a stream due to abar leater pumping can incre	adonment of a treatment	plant etc. can reduce bas eficial results.	e Rows in a stream. Alter	matively, other control		a hydraulic componer	lividual sources, and the	4			
Acronyms 8GC - Beargrass Cre 8CO - Biological oxyg CSO - Combined see	ek en derrend er overflow		DO - Dissolved oxygen DWF - Dry weather flow mgt - Milligram per liter		S&F - Solids and floatet	des	-						



Value:				J	errerson	town Rie	naing E	liminatio	n Evaluat	tion - Alte	ernative	2	
10100.	Eco-Friendl	y Solutions											
Aspect	-5	-4	-3	-2	-1	0	S	coring					
Non-Renewable Energy Consumption	Primary energy consumption is greate than secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treatment	Primary energy consumption equal to 15 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary treetment	No energy consumption except for cleaning and maintenance	Cleaning and maintenance not needed, no primary consumption	NA .	MA	NA .	NA S	Assumptions Emergy consumption needed for storage and pump station at the plant. 55% of flow pumped, secondary treatment still required end of pipe.	Score Per Aspe
Use of Natural Systems	Constructed facilities permanently displace 5+ acres wellands or 50% locally available green space	Constructed facilities permanently displace 3 - 5 acres wetlands or 25 - 50% locally available green space	Constructed facilities permanently displace 1 - 3 acres wetlands or 10 - 151 locally evallable green space		Constructed facilities temporarily disrupt wetlands or green space	Alternative does not use or affect natural systems, wetlands, or green space	Alternative doesn not use natural systems, but enhances green space or wetland	Natural systems play a mino role in elternative function, up to 1 ecre wellend or 10% additional green space created	Natural systems are significant part of alternative function, 1 - 3 ecres of wetland created or 10 - 25% additional green space	Alternative fully uses natural systems, 3 - 5 ecres of welland created or 25-50% editional green space	Alternative results in multi- use natural system stavelopment, 5+ acres of wetland or 50% additional green space		1
Multiple-Use Facilties	Constructed lacities permanently eliminate recreational opportunity	Constructed facilities significantly impare recreational opportunity	Constructed facilities rectanish impare recreational opportunity	Constructed facilities have minor impacts on recreational opportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Atternative improves access to existing recreational areas	Alternative has limbed positive impact on recreation	Alternative significantly enhances recreational opportunities	Attantative increases recreational opportunities in area	Alternative results in multi- use facility	No change in recreational uses since plant remains in service	o
Source Control of subwatershed collutant loads	Pollutant loadings are increased by 50%	Polluters loadings are increased by 30 - 50%	Poliotant kiedings are increased by 10 - 30%	End of pipe pollutant loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely higher	End of pipe pollutant loading are unchanged	Oversion transfers more at their 25% of pollutant loadings to less sensitive receiving water	Olversion transfers more than 50% of pollutant loadings to less sensitive receiving water	Olversion transfers more than 75% of pollutant libedings to less sensitive receiving water	Oversion transfers more than 90% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 100% of polutant loadings to less sensitive receiving water	56% of pollutant loads transferred to Ohio River, a less sensitive watershed.	2
Non-Obtrusive Construction Fechniques	Permanent loss of green space or sensitive area disruption	Main thoroughfare closures, sensitive area temporary disruptions	Widespread dust and noise, blasting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, traffic lane closures	No construction impacts	NA	NA	NA	NA	NA	Construction would cause localized dust and noise with street closures	-2
Consistent Land Use	Intrusive or huisence facilities inconsistent with neighborhood or lend use.	Facilities reconstitient with neighborhood or land use.	Facility characteristics mitigated to reduce impact on neighborhood	Facilies have significant impact on development density or land use	Facility has minor impact on development density or land use	No impact on lend use or no above ground facilities	Attenuative mitigates existing compatibility problem	Alternative removes facility inconsistent with neighborhood	Alternative ramoves nuisance facility from neighborhood	Alternative enhances property values in neighborhood	Alternative provides enhancements that significantly improve neighborhood	Facilities on plant site will be upgraded, partially mitigating incompetable use of a treatment facility.	1
mpermeable Surfaces	S acres + of impermeable surfaces are added	3 - 5 acres of impermeable surfaces are added	1 - 3 acres of impermeable surfaces are added	up to 1 ecre of impermeable surfaces are added	Minor increase in impermeable surfaces artifed	No change in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 scre of impermeable surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces removed	More than 5 acres of impermeable surfaces removed	No change in impermeable surface in all options	O
EEDS Performance	NA.	NA	NA.	NA	NA	LEEDS not applicable or LEEDS score <10	LEEDS Score 10 - 25	LEEDS Certified	LEEDS Silver	LEEDS Gold	LEEDS Platinum	LEEDS not applicable or LEEDS score < 10	0
nstructions: (1.) o get the total sc	Score each alternat ore for this alternat	ive for each of the eightive in this value. (3.) S	ht aspects of the value thaded area represent	. Scores can be post fatal flaw. Alterna	tive or negative, depend tives that score in this	ding on the impact of th area should not be prop	e alternative on the va	ilue. (2.) Total the score	s for each aspect		Total Raw Score	Calculated	0
											AND THE COLUMN		
Aspect	Rationale						Measurement M	Method			Total Score (E	Default)	0
Aspect Non-Renewable Energy Consumption	Eco-friendly solutions w	rould be expected to be low of for high energy consuming a	consumers of non-renewable	r energy, Benchmarking ene	orgy consumption against com	ventional secondary treatment		gy consumed per MG of flow to	nated, compared to the	Note: The total score maximum score of 25	calculated may be m	Default) ore than 25. In the instances where th	
Non-Renewable Energy	Eco-friendly solutions w provides penalty points Natural systems replac	for high energy consuming a	effernatives.	e lagoons, constructed biosy	ergy consumption against com-		Evaluation of primary energy consumed at the W	gy consumed per MG of flow to	or eliminated. Also includes		calculated may be m		
Non-Renewable Energy Consumption	Eco-friendly solutions is provided penalty points. Natural systems replacivarious kinds. Options. Eco-friendly solutions of	for high energy crinsuming a e concrete and steel constru that reduce wellands and gre	en space get penalty points es for both water-based and	e lagoons, constructed bioxy	wales, rain gardens etc. that in	ncrease green space of	Evaluation of primary energy energy consumed at the W Acres of wetlands and othe subjective evaluation of the Subjective evaluation of ch	py consumed per MG of flow to CWTP per MG treated. In types of green space created "basis" of the alternative - "gre anges predicted in the expedic , increased base flow or decre	or viliminated. Also includes sen" or "gray".		calculated may be m		
Ion-Renewable Inergy Ionsumption Use of Natural Systems Autitiple-Use	Eco-friendly solutions w provides penalty points Natural systems replac- various kinds. Options Eco-friendly solutions co- de direct water-based in	for high energy consuming a e concrete and steel operation that reduce wellands and gir restle recreational opportunities restle recreation, (first watching, his ds at the source through behavior	alternatives. Introduced west bottom storage seen space get penalty points are storage and seen space and seen space and seen seen seen seen seen seen seen se	r lagoons, constructed bioso- riparien recreation. Busting etc. would be considered	wales, rain gardens etc. that in	ncrease given spece of would would switching, swittening etc. would	Evaluation of primary energy energy consumed at the W Acres of wortlands and other subjective evaluation of the Subjective evaluation of chrasuit of belief water quality tree cover or vegitated rips. Modeleri land-side poliutars	py consumed per MG of flow to CWTP per MG treated. In types of green space created "basis" of the alternative - "gre anges predicted in the expedic , increased base flow or decre	or eliminated. Also includes ent "or "grey". or riparian environment as a seased flow pushs, increased feel by the BGC Water Clustin.		calculated may be m		
ion-Renewable inergy consumption Use of Natural systems Autitiple-Use actities	Eco-friendly solutions up provides penalty points Netural systems replac various kinds. Options Eco-friendly solutions on direct water-based in Controlling pollutant los avoiding and of pipe tre	for high energy consuming a e concrete and steel constitute that reduce wetlends and gir reate recreational opportunities correction. Bird watching, his did at the source through beh- atment requirements.	alternatives. chion with well beltiom storage sen space get penelty points as for both water-based and days, biking, picnicing; campi savier modification, product n	r legoons, constructed bioscopic formation recreation. Busting and considered grant would be considered applicaments or alignmenter or alignmenter.	wales, rain perdens etc. thet is transing, keyaking, fishing, related riparian recreation.	ncrease green space of	Evaluation of primary energy energy consumed at the W Acres of worlands and othe subjective evaluation of the Subjective evaluation of chromatic distribution of chromatic dis	yy consumed per MG of flow to CWTP per MG treated. If hypox of green square created Thesis" of the attemative - "gir anges predicted in the equatic interaction of the consumer into a consumer interaction as calcular treatment of the consumer I loading reductions as calcular treatment of the consumer beable construction impacts be beable construction impacts be	t or eliminated. Also includes ten? or "grey". or riparian environment as a seed flow peaks, increased seed flow peaks, increased tend by the BGC Water Clusting reseasurements.		calculated may be m		
ton-Renewable nergy consumption of the consumption	Eco-friendly solutions up revisites penalty points Netural systems replace various kinds. Options Eco-friendly solutions c be direct water-based in avoiding end of pipe te- Probable construction in revisiting end of pipe te- instance confidence. Alternative configuration uply. The same pump up	for high energy consuming a e concrete and sheel constitute that reduce wetlends and girl reade recreational apportunition correction. Bird wetching, his did at the source through behativent requirements uppects on traffic, noise and did can either enhance or delive.	alternatives. Intion with well bottom storage sen space get pensity points as for both weller-based and sing, biking, picnicing, campions are modification, product not are all measures of the function of the form the automatical program a residence that fits right in	riparian recreation. Busting etc., would be considered placements or stormwater riendiness of an alternative erty. For example, at extremely, For example, at extremely.	wakes, rain gerdens etc. that is canning, keyaking, fishing, related riparian recreation. Transgement BMPs that capit, construction impacts get per capital pump station or interpretability pump station in larger parcel of find is evaluated.	eading, swimming sits, would use poliutants thereby smally points for creating	Evaluation of primary energy energy consumed at the W Acres of worlands and othe subjective evaluation of the Subjective evaluation of the subjective evaluation of the subjective evaluation of the subjective evaluation of primary of the subjective evaluation of properties and the properties of the Subjective evaluation of processivution envisioned for At the plenning level, projective evaluation graphs of the properties. De	yy consumed per MG of flow to CWTP per MG treated. If hypox of green square created Thesis" of the attemative - "gir anges predicted in the equatic interaction of the consumer into a consumer interaction as calcular treatment of the consumer I loading reductions as calcular treatment of the consumer beable construction impacts be beable construction impacts be	or eliminated. Also includes or specific or "grey" as asset flow peaks, increased as a sased flow peaks, increased led by the BGC Water Quality measurements.		calculated may be m		
ion-Renewable menusuri procession of Natural procession of Natural posterior of Natura	Eco-friendly solutions up revides penally points Netural systems replace various kinds. Options Eco-friendly solutions code direct water-based in a celebrate solutions code direct water-based in a celebrate solution and direct water-based in a celebrate solution. Probable construction in rules are gump in hadden to my view by land. Adding impermeable sur	for high energy consuming a e concrete and sheel constitute that reduce wetlends and girl meate recreational apportunities eccreation. Bird watching, his dis at the source through beh strend requirements reports on traffic, noise and di can either enhance or detre tation can be "disgusted" as can either enhance or detre tation can be "disgusted" as can either enhance or detre tation can be disgusted as conjugate and a consensity of consensity of conse	elformetives. ction with well bottom storage een space get pennelly points een space get pennelly points een for both weter-based and ang. bilking, picmicing, campions of the savier modification, product in the savier modification, product in the savier modification, product or a residence that fits right in panden or other green space volume, peak runoff forwester.	riparian recreation. Busting etc., would be considered placements or atorrowater ripidicarrents of an alternative of the respictory. For example, an extre with the neighborhood. If a added to enhance the neigh	wakes, rain gerdena etc. thet is canoning, keyaking, fishing, related riparian recreation. Transgement BMPs that capts construction impacts get pe related purple station impacts get pe related purple station impacts get pe related purple station in the second in	wading, swimming sit: would wading, swimming sit: would ure pollutants thereby maky points for creating can be noisy, arreby, and six, a pump station can be	Evaluation of primary energy energy consumed at the W Acres of worlands and othe subjective evaluation of the subjective evaluation of the result of better water quality tree cover or vegitated rips. Modeled land-side pollutar Tool or by compensation to 8 Subjective evaluation of precinstruction envisioned for At the plenning level, projective. Department of processity. The approach is the approach of the proposition of processitic The approach of the plenning level, projective. Department of the proposition of processitic The approach of the processity of the approach of the approac	ye consumed per MG of flow to COVITP per MG treated. If hypers of green square orealed "basis" of the atternetive - "girl anges predicted in the aquistic interest of the atternetive - "girl anges predicted in the aquistic to adding reductions as calcular to a second to avoid neg per adding on the availability of la emeges project definition and but meges project definition and but proper project definition and proper project definition and project project	or eliminated. Also includes or specific or "grey" as asset flow peaks, increased as a sased flow peaks, increased led by the BGC Water Quality measurements.		calculated may be m		



							S_J1_J	T_NB01	4_03_C				
Value:	Eco-Friendly	y Solutions											
Aspect	-5	4	1 3	-2	1 -1	1 0	Sc	coring 2			5	Assumptions	Score Per Aspe
Non-Renewable Energy Consumption	Primary energy consumption is greater then secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treatment.	Primary energy consumption equal to 15 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary treatment	No energy consumption except for cleaning and maintenance	Cleaning and maintenance not needed, no primary consumption	NA	NA	NA.	NA NA	Energy consumption due to increase in pumping	-1
Use of Natural Systems	Constructed facilities permanently displace 5+ acres welfands or 50% locally evaluable green space	Constructed facilities permanently displace 3 - 5 acres wellands or 25 - 509 locally evallable green space	Constructed facilities permanently displace 1 - 3 lacres vertiseds or 10 - 151 locally available green space	Constructed facilities permanently displace 0 - acre wettends or up to 10% locally available green space	Constructed facilities temporarily disrupt wetlands or green spece	Atternative does not use or affect natural systems, weflends, or green space	Alternative doesn not use natural systems, but enhances given space or welland	Nutural systems play a mino role in attendance function, up to 1 acre wetland or 10% additional green space created	significant part of alternative	Alternative fully uses natural systems, 3 - 5 acres of wotland created or 25-50% additional green space	Atternative results in multi- use natural system development, 5+ acres of wetland or 50% additional green space	Force Main construction temporarily disrupts green space	4
Multiple-Use Facilties	Constructed facilities permanently eliminate recreational opportunity	Constructed facilities significantly impare recreational opportunity	Constructed facilities moderately impairs recreational opportunity	Constructed facilities hav minor impacts on recreational opportunity	e Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Alternative improves eccess to existing recreational areas	Alternative has limited positive impact on recreation	Alternative significantly enhances recreational opportunities	Alternative increases recreational opportunities in erea	Alternative results in multi- use facility	No impact	0
Source Control , of subwatershed pollutant loads	Poliutant loadings are increased by 50%	Pollutant loadings are increased by 30 - 50%	Polistant loadings are increased by 10 - 30%	End of pipe pollutant loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely higher	End of pipe pollutant loading are unchanged	Pollutant loadings impacts are inconsistent, but likely lower	Source control reduces pollutant loadings by 0 - 10%	Source control reduces pollutant loadings by 10 - 30%	Source control reduces pollutant loadings by 30 - 50%	Source control reduces pollutant loadings by more than 50%	End of pipe pollutant loadings impacts are inconsistent, but likely higher in all options	-1
Non-Obtrusive Construction Fechniques	Permanent loss of green space or sensitive area disruption	Main thoroughfare closures, sensitive area temporery disruptions	Widespread dust and noise, blasting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, traffic lane closures	No construction impacts	NA	NA	NA	NA	NA	Force main construction would result in minor dust and lane closures	-1
Consistent Land Use	Intrusive or nuisance facilities inconsistent with neighborhood or lend use.	Facilities inconsistent with neighborhood or land use.	Facility characteristics miligated to reduce impact on neighborhood	Factiles have significent impact on development density or land use	Facility has minor impact or development density or lend use	No impact on land use or no above ground facilities	Alternative mitigates existing competibility problem	Alternative removes facility inconsistent with neighborhood	Alternative removes nuisance facility from neighborhood	Allemetive enhances property values in neighborhood	Atternative provides enhancements that significantly improve neighborhood	No impact on land use or above ground facilities in all options	0
mpermeable Surfaces	5 scres+ of impermeable surfaces are added	3 - 5 scres of impermeable surfaces are added	1 - 3 acres of impermeable surfaces are added	up to 1 acre of impermeable surfaces an added	Minor increase in impermeable surfaces added	No change in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 acre of impermeable surfaces removed	1 - 3 scres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces removed	More than 5 acres of impermeable surfaces removed	No change in impermeable surface in all options	0
LEEDS	NA	NA	NA	NA	NA .	LEEDS not applicable or LEEDS score <10	LEEDS Score 10 - 25	LEEDS Centified	LEEDS Silver	LEEDS Gold	LEEDS Pletinum	LEEDS not applicable or LEEDS score < 10 in all options	0
							-		-				
						ding on the impact of th area should not be prop		due. (2.) Total the score	s for each aspect		Total Raw Score		4
Aspect									s for each aspect		Total Raw Score Corrected S		4
oget the total sc	Rationale	tive in this value. (3.) S	Shaded area represent	s "fatal flaw". Alterna		araa should not be pro	Measurement M	Method gy consumed per MG of flow b		Note: The total score maximum score of 25	Corrected S		4
Aspect Non-Renewable	Rationale Eco-triendly solutions w provides penalty points Natural systems replace	would be especial to be low for high energy consuming a	Shaded area represent	s "fatal flaw". Alterna e energy, Benchmarking an e legoons, constructed birs	atives that score in this	area should not be proj	Measurement N Evaluation of privacy energy energy consumed at the W Acres of wetlands and other	Method gy consumed per MG of flow b	realed, compared to the	Note: The total score maximum score of 25	Corrected S	Score	4
ASPECT Non-Renewable consumption	Rationale Eco-triendly solutions wormides penalty points Natural systems replace vertices kinds. Options Eco-triendly solutions to	eould be expected to be low for high energy consuming; at concrete and steel constru- tion reduce wellands and gri	Shaded area represents consumers of non-renewable atternatives.	s "fatal flaw". Alternation and analysis analysis analysis analysis and a second analysis and a second analysis and a second analysis anal	atives that score in this very consumption against converse, rain gardens etc. that is u. canoing, keyaking, fishing,	area should not be prop rentional secondary treatment recrease grean space of	Measurement N Evaluation of primary energy energy consumed at the W Acres of wellands and othe subjective evaluation of the Subjective evaluation of ch	Method gy consumed per MG of flow by COVTP per MG treated. "hasis" of the attendine - 'gin "basis" of the attendine - 'gin "basis of the attendine - 'gin "the same of the attendine of the atten	realed, compared to the direction of or eliminated. Also includes each or "grey". or ripacion exceloroment as a	Note: The total score maximum score of 25	Corrected S	Score	4
Aspect Non-Renewable Energy Consumption Use of Natural Systems	Rationale Eco-ineredly solutions aperation per control of the con	would be expected to be low for high energy consuming: a concrete and steel constru- tively reduce wellands and gr vends (exceedional opportunity exceedions). Bird watching, hill what is the source through below	Shaded area represents consumers of non-renewable attenuatives. section with wet bottom storage seen space get penalty points seen space get penalty points seen for both witter-based and sing, billing, picnicing, cample	"fatal flew". Alterni e energy, Benchmarking en e legionis, constructed bies (ripalien recreation, Boelinian) (ripalien recreation, Boelinian)	atives that score in this very consumption against converse, rain gardens etc. that is u. canoing, keyaking, fishing,	area should not be proposed to the proposed secondary treatment of the proposed secondary treatment of wading, swittening etc. would	Measurement It Evaluation of primary energy energy consumed at the W Acres of wettands and othe subjective evaluation of the Subjective evaluation of the result of better water quality tree cover or vegitated ripe Modeled land-side poblitiers	Method gy consumed per MG of flow by COVTP per MG treated. "hasis" of the attendine - 'gin "basis" of the attendine - 'gin "basis of the attendine - 'gin "the same of the attendine of the atten	or eliminated. Also includes cen' or 'grey'. or riparies excitoment as a search flow peaks, increased suited by the BGC Water Quality	Note: The total score maximum score of 25	Corrected S	Score	4
Aspect Aspect Non-Renewable Energy Consumption Jise of Natural Systems Autiliple-Use acities dource Control of Source Control of	Rationale Eco-triently solutions a previous break youthous break youthous break youthous break of the controlling political break of the controlling political break youthous break or controlling political be avoiding and of pipe be	rould be expected to be low for high energy consuming; at concrete and steel constru- tively reduce wellends and gr vends (eccreational opportunity acreation. Bird watching, hill did at the source through bel- atment requirements	Shaded area represents consumers of non-renewable attenuables. colon with wet bottom storage area space get penalty points less for both water-based and sing, biking, panning, campa havior modification, product of	s "fatal flew". Alterna e energy, Benchmarking an e legoons, constructed been injuries recreation. Booling og etc. would be considered episcements or stormwater	atives that score in this dergy consumption against con- twistes, rain gardens etc. that is g. canoing, keyaking, fishing, g. canoing, keyaking, fishing, d. related riparien recreation.	area should not be properly beathers are great space of weding, swittening etc. would have published thereby	Measurement N Evaluation of primary energy energy consumed at the W Acres of verifiants and othe subjective evaluation of the Subjective evaluation of the react of better water quality tree cover or vegitated ripe Modeled land-side politiker Tool or by compension to it	Method by consumed per MG of flow by COWTP per MG treated. r typins of given rapido streated. "basis" of the atternative - "gri anges predicted in the aquatic rich areas etc. It loading reductions as calculat teresture valves or pilot program obtable construction impacts be	or riparient successed from the second successed from peaks, increased from peaks, increased successed from peaks, increased s	Note: The total score maximum score of 25	Corrected S	Score	4
ASPECT ASPECT ASPECT ASPECT ASSESSESSESSESSESSESSESSESSESSESSESSESSE	Rationale Eco-triently solutions armoides persetty solutions armoides persetty points Metural systems replace various brids. Options Eco-triently solutions of the desired solutions are solutions and of page techniques are solutions. Probable constitution and of page techniques are solutions are solutions and of page techniques are solutions.	would be expected to be low for high energy consuming : at concrete and steel constru- their reduce wellends and gr veste recreational opportunit accreation. Bird watching, his consistent of the source through be- side at the source through be- sides on traffic, noise and in consistent on traffic and traffic and traffic and the inconsistent on traffic and traffic	Shaded area represents consumers of non-renewable effernetives. colon with wet brottom elsirep een space get penelly points ies for both water-bread and king, biking, picnicing, cample dust are all measures of the sect from the surrounding pro-	s "fatal flew". Alterni e energy, Benchmarking an e energy, Benchmarking an e legoons, constructed bins riparian recreation. Boalin riparian recreation or stormwater epiacements or stormwater binedifiness of an alternation binedifiness of an alternation with the neighborhood. If	atives that score in this series consumption against convains, rain gardens etc. that is go cancing, keysking, fishing, related riparien recreation. I management BMPs that capt a construction impacts get perfectly printed by pump stations is larger secred in and is available.	area a should not be proposed to the proposed	Measurement N Evaluation of primary energy energy consumed at the W Acres of wetlands and other subjective evaluation of ch result of before value quality tree cover or vegitated rips Modeled land-side poliulair Tool or by comparison to it Subjective evaluation of ch created of before Tool or by comparison to it Added the poliulair Tool or by comparison to it At the planning level, price autronounting properties. De	Method by consumed per MG of flow by COWTP per MG treated. r typins of given rapido streated. "basis" of the atternative - "gri anges predicted in the aquatic rich areas etc. It loading reductions as calculat teresture valves or pilot program obtable construction impacts be	rested, compared to the of or eliminated. Also includes een or "grey". or riporities environment as a exect flow peaks, increased sted by the BGC Water Qualit in measurements. on measurements.	Note: The total score maximum score of 25	Corrected S	Score	4
Aspect As	Rationale Eco-ineedly solutions and an according process and according process and according process and according process and according political to according political to according political to according political to according and of pips to a process and according and of pips to according a pipe to according a pipe. Alternative conditions.	would be expected to be low- for high energy consuming. I concrete and steel constru- their reduce wellends and gr vanta recreational opportunits recreation. Bird watching, his variety and the source through be- letment requirements. In can either enhance or detar- tistation can be "disguised" as adsaughe, and a community	Shaded area represents consumers of non-renewable sternatives. colon with wet bottom storage een space get penetly points ies for both water-bread and king, biking, picnicing, cample havior modification, product of dust are all measures of the scot from the surrounding prop a residence that fits right in garden or other green space	s "fetal flew". Alterns s energy, Benchmarking an s energy, Benchmarking an s legicions, constructed bins ripiation recreation. Busine pg etc. would be considered seplecements or storrewate friendliness of an alternative party. For example, an extra with the resimplement. If the resimplement of the stiffed to enhance the regi- stiffed to enhance the regi- st, and the total transport of the se, and the total transport of	atives that score in this sergy consumption against convices, rain gardens etc. that is governed, keysking, fishing, t related riperian recreation. If management BMPs that capt are construction impacts get permitted by the property surfaced of land is available proposed.	area should not be proposed to the proposed to	Measurement N Evaluation of primary energy energy consumed at the W Acres of wetlants and othe subjective evaluation of the subjective evaluation of pro- construction envisioned for At the planning level, projec- surrounding properties. De- surrounding properties.	Method by consumed per MG of flow by COVITP per MG treated. or typins of green space created. This is "of the atternative." yn anges predicted in the aquelic typins are seed to the consumer of decre rien areas etc. I loading reductions as calcula tereture values or plat program the atternative. List can be defined to evoid nea pending on the averalishibly of la utages project definition and but sees project definition and but sees project definition and but sees project definition and but sees.	rested, compared to the of or eliminated. Also includes een or "grey". or riporities environment as a exect flow peaks, increased sted by the BGC Water Qualit in measurements. on measurements.	Note: The total score maximum score of 25	Corrected S	Score	4

Cluster Comparison

Project #1: S_JT_JT_NB01_01_C_A (Alternative 3)

Raw Benefit Score²

CSO/SSO ID		Regulatory Performance	Public Health	Asset Protection	Environmental Enhance	Eco-Friendly Solutions
ISO28		21	22	10	10	3
28390		5	7	10	10	3
31733		21	20	10	10	3
28395A		5	3	10	10	3
64505		5	3	10	10	3
MSD0255		0	0	10	10	3
28392		0	0	10	10	3
28391		0	0	10	10	3
28173		0	0	10	10	3
64096		21	8	5	4	-4
86052		21	22	5	4	-4
92061		0	0	5	4	-4
MSD0263		21	18	5	4	-4
Weighting Factor Weighted Benefit Score		8 960	10 1030	6 660	8 848	6 66
Total Benefit Score	3564					
Total Capital Cost ³	20209000					
Total Present Worth Costs ³						
Weighted Benefit/Cost Ratio (Capital Costs) Weighted Benefit/Cost Ratio (Total Present Worth Costs)	17.635707 #DIV/0!					

Notes:

- 1. Data Input Cells are highlighted in yellow
- 2. Raw Benefit Scores for Regulatory Performance and Public Health values are from the CSO or SSO Level of Control Benefit Sheets
- 3. Capital and Total Present Worth Costs from the "Proj Summary" Page of the Cost Model for the clustered alternative

(Reference fu

JT_NB01_BCA_Q_Q_xls

2-Year

Jeffersontown Blending Elimination Plan - Original IOAP, Alternatives 1, 2, 3 (all the same)

	Measure		In	npact	/ Freq	uency		Rationale	Meas	urement Met	hod
Performanc e Measure	SSOs	6 month	1 Year	2 Year	5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO discl		c models to
	Value	25	12	0	4	1	0				
	ISO28	BL			PR	1686			25	4	21
Frequency	28390			BL	PR				9	4	5
	31733	BL			PR				25	4	21
	28395A			BL	PR				9	4	5
nbe	64505			BL	PR				9	4	5
F	MSD0255						BL		0	0	0
	28392						BL		0	0	
J	28391						BL		0	0	
	28173					UFU	BL		0	0	
ote - This v	alue sheet calcula	ates the total	I benefit.								

	Measure		In	npact	/ Freq	uency		Rationale	Meas	urement Met	hod
Performanc e Measure	SSOs	6 month	2121	2 Year	5 Year	10 Year	Modeled Overflow Point or No discharge	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Performance value Modeled Overflow Points are not considered until verified.	Measurement method quantify the SSO disc	ls will be via hydrauli	
	Value	25	16	9	4	1	0				
quency	64096	BL			PR				25	4	21
	86052	BL			PR				25	4	21
5	92061						BL		0	0	0
ш	MSD0263	BL			PR				25	4	21
te - This v	alue sheet calcula	ites the tota	I benefit.	14 . 4							
	verage annual overl					lity standards			Sub	total	63

/alue:	Public Hea	alth Enhai	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	Measurement in to quantify the S establish relative locations or obje	SO discharge a e distance from	ia hydraulic mode nd the GIS to designated
2	6 Month	25	20	15	10	5	0	Releases 900,000 gallons	25	0	25
Frequency	1 Year	20	16	12	8	4	0	Releases 2,000,000 gallons	20	0	20
nb	2 Year	15	12	9	6	3	0	Releases 3,080,000 gallons	15	0	15
ě	5 Year	10	8	6	4	2	0	Releases 4,600,000 gallons	10	6	4
ш	10 Year	5	4	3	2	1	0	Releases 5,720,000 gallons	5	4	1
ximum score of	sheet calculates the ave f 25.	rage benefit over t	he recurrence inte	rvals. A correcti	ion calculation is i	to obtain a	. The same of the			13	
FC - Fecal colife	ed sewer overflow orm nic information system						Corrected Score			22	

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge a re distance from	ia hydraulic model nd the GIS to designated
75	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
nk	2 Year	15	12	9	6	3	0	Releases 63,000 gallons	12	0	12
ē	5 Year	10	8	6	4	2	0	Releases 167,000 gallons	8	2	6
щ	10 Year	5	4	3	2	1	0	Releases 248,000 gallons	5	2	3
e - This value s	heat calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	on calculation is i	ncluded in order	to obtain a	Average Total So	core		4
Acronyms CSO - Combine FC - Fecal colifo	d sewer overflow						The state of the s	Corrected Sco	re		7

Value:	Public Hea	alth Enhai	ncement -	SSOs				AP, Alternatives 1, 2, 3 (all	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	Measure			Releas	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge a e distance from (
>	6 Month	25	20	15	10	5	0	Releases 80,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 172,000 gallons	16	0	16
ä	2 Year	15	12	9	6	3	0	Releases 269,000 gallons	15	0	15
ē	5 Year	10	8	6	4	2	0	Releases 393,000 gallons	10	2	8
ш	10 Year	5	4	3	2	1	0	Releases 495,000 gallons	5	2	3
ote - This value s aximum score of Acronyms	heet calculates the aver 25.	rage benefit over t	he recurrence inte	rvals. A correct	ion calculation is i	to obtain a					
CSO - Combine FC - Fecal colifo	d sewer overflow orm ic information system							Corrected Sco	re		20

/alue:	Public Hea	alth Enhai	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the	SSO discharge a re distance from	
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
ž	2 Year	15	12	9	6	3	0	Releases 2,000 gallons	3	0	3
ē	5 Year	10	8	6	4	2	0	Releases 31,000 gallons	4	0	4
ш	10 Year	5	4	3	2	1	0	Releases 46,000 gallons	2	1	1
ximum score of	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	ion calculation is i	to obtain a				2	
FC - Fecal colifo	d sewer overflow						Corrected Score			3	

Value:	Public Hea	alth Enhar	cement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge are distance from (
>	6 Month	25	20	15	10	5	0	No Discharge	0	0	0
Frequency	1 Year	20	16	12	8	4	0	No Discharge	0	0	0
ne	2 Year	15	12	9	6	3	0	Releases 13,600 gallons	3	0	3
ē	5 Year	10	8	- 6	4	2	0	Releases 170,000 gallons	8	2	6
ш	10 Year	5	4	3	2	1	0	Releases 282,000 gallons	5	2	3
ote - This value :	sheet calculates the ave	rage benefit over t	he recurrence inte	ervals. A correct	ion calculation is i	ncluded in order	to obtain a	Average Total So	core		2
Acronyms	ed sewer overflow						Corrected Score			3	

Value:	Public Hea	alth Enhar	ncement -	SSOs			Ta				
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge as distance from (ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 600 gallons	5	0	5
Frequency	1 Year	20	16	12	8	4	0	Releases 16,000 gallons	4	0	4
ž	2 Year	15	12	9	6	3	0	Releases 55,000 gallons	12	0	12
ē	5 Year	10	8	6	4	2	0	Releases 123,000 gallons	8	4	4
u_	10 Year	5	4	3	2	1	0	Releases 160,000 gallons	4	3	1
aximum score of	theet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correct	on calculation is i	ncluded in order	to obtain a	Average Total So	core		5
FC - Fecal colife	od sewer overflow orrn oic information system							Corrected Sco	re		8

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Mea	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge a e distance from	
>	6 Month	25	20	15	10	5	0	Releases 155,000 gallons	20	0	20
Frequency	1 Year	20	16	12	8	4	0	Releases 223,000 gallons	20	0	20
ă.	2 Year	15	12	9	6	3	0	Releases 292,000 gallons	15	0	15
ē	5 Year	10	8	6	4	2	0	Releases 360,000 gallons	10	2	8
u.	10 Year	5	4	3	2	1	0	Releases 405,000 gallons	5	2	3
te - This value st	heet calculates the ave	rage benefit over t	he recurrence inte	rvals. A correcti	on calculation is i	to obtain a	Average Total Cours				
Acronyms CSO - Combined FC - Fecal colifo	i sewer overflow						Corrected Score				

/alue:	Public Hea	alth Enhar	ncement -	SSOs							
	Measure			Release	e Impact			Rationale	Meas	surement	Method
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce		SO discharge are distance from o	ia hydraulic model nd the GIS to designated
>	6 Month	25	20	15	10	5	0	Releases 36,000 gallons	20	0	20
requency	1 Year	20	16	12	8	4	0	Releases 71,000 gallons	16	0	16
ne	2 Year	15	12	9	6	3	0	Releases 123,000 gallons	12	0	12
9	5 Year	10	8	6	4	2	0	Releases 204,000 gallons	10	4	6
II.	10 Year	5	4	3	2	1	0	Releases 274,000 gallons	5	2	3
ote - This value s	sheet calculates the ave	rage benefit over t	he recurrence inte	orvals. A correct	ion calculation is i	included in order	to obtain a	Average Total S	core		11
Acronyms CSO - Combine FC - Fecal colife	ed sewer overflow							Corrected Sco	re		18

Value:	Public Hea	Ith Enhar	comont	9906							
value:		illi Elliai	icement -		lana a a t			D-tit-	Man	aamant	Mathad
	Measure			Release	Impact			Rationale	Mea	surement	wietnoa
Performance Measures	SSOs	Basement Flooding or Park or Blue- Line Stream > 50,000 Gals or >200,000 Gals	Residential Area > 50,000 Gals or Park or Blue Line <50,000 Gals or > 100,000 Gals	Release 50,000 - 99,999 Gals	Release 20,000-49,999 Gals	Release 10,000 - 19,999 Gals	* No discharge	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforce	to quantify the S	SSO discharge ar re distance from o	ia hydraulic mode nd the GIS to designated
>	6 Month	25	20	15	10	5	0	No Release	0	0	0
2	1 Year	20	16	12	8	4	0	No Release	0	0	0
Ine	2 Year	15	12	9	6	3	0	No Release	0	0	0
Frequency	5 Year	10	8	6	4	2	0	No Release	0	0	0
Œ	10 Year	5	4	3	2	1	0	No Release	0	0	0
	sheet calculates the ave	rage benefit over t	he recurrence inte	ervals. A correcti	on calculation is i	included in order	to obtain a	Average Total Se	core		0
Acronyms CSO - Combine FC - Fecal colife GIS - Geograph	ed sewer overflow						Corrected Score			0	



lue:	Asset Pro	otection											
		Measure			,	In	pact			Rationale	Mea	surement Metho	d
		Flood	Darnage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stormwater BMPs can reduce stormwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Customer Information Sys	vvailable, historic customer c stem, or historic observatio expected relative impacts o ater flows.	ns of flood-prone
Performance Measures		Basemen	it Back-ups	Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface	First floor levels are typically 1 - 2 feet above ground surface, and basement floors are typically 8 - 10 feet below the first floor. A sewer surcharge of 6 feet below ground surface is highly likely to cause back-ups in homes with basement service.	Measurement methods w hydraulic grade lines comp		
forman	Storm Events	1	-	Most Severe Impact				Least Impact	No Impact				
Per		•		5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Score
	6 Month	Most Likely	5	25	20	15	10	5	0		10	0	10
	1 Year		4	20	16	12	8	4	0		12	4	8
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	0		8	4	4
	10 Year	Least	1	5	4	3	2	1	0		5	3	2
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Average	Total Score		6



Pro	ect #1							S_JT_	JT_NB01A_0	3_C			
alue:	Asset Pro	tection											
		Measure				Im	pact	T'	Rationale	Measurement Method			
		Flood	Damage	Homes or businesses are subject to severe structural damage	Homes or businesses are subject to minor to moderate structural damage	Flooding limits access to homes or businesses	Flooding limits access to recreational areas	Standing water on property, but access not affected and no damage expected	No standing water	Stormwater BMPs can reduce stormwater peaks and reduce extent of flooded areas, while sewer separation may increase localized stormwater peak flows and increase the flooding impacts of storms. Alternatively, purchase of highly impacted properties may be a cheaper way to reduce flood damage and create green space and buffer zones.	Customer Information Sys	vailable, historic customer o tem, or historic observatio expected relative impacts o ter flows.	ns of flood-prone
Performance Measures		Basement Back-ups within 6 fe ground su for more t		Sewer surcharging within 6 feet of ground surface for more than 20% of manholes	Sewer surcharging within 6 feet of ground surface for 10 - 20% of manholes	Sewer surcharging within 6 feet of ground surface for 5 - 10% of manholes	Sewer surcharging within 6 feet of ground surface for 1 - 5% of manholes	Sewer surcharging within 6 feet of ground surface for 0 - 1% of manholes	No surcharging within 6 feet of ground surface		Measurement methods will be via hydraulic models to quantif- hydraulic grade lines compared to ground surface elevations a		
forman	Storm Events		•	Most Severe Impact				Least Impact	No Impact				
Per		1	1	5	4	3	2	1	0	Assumptions	Base Case Score	Alternative Score	Total Scor
	6 Month	Most	5	25	20	15	10	5	0		5	0	5
-	1 Year		4	20	16	12	8	4	0		4	4	o
Frequency	2 Year		3	15	12	9	6	3	0		9	3	6
Freq	5 Year		2	10	8	6	4	2	o	1000年	8	6	2
	10 Year	Least	1	5	4	3	2	1	0		4	3	1
	Not Possible	Not Poss ible	0	0	0	0	0	0	0	Aver	age Score		3
- This value :	sheet calculates the a	verage benefit o	over the recurre	ence intervals. A corre	ction calculation is in	cluded in order to	obtain a maximum sc	ore of 25.		Corre	cted Score		5



	I.e.	The second second						lending		THE STATE OF			
Value:	Environmental E	nhancement					Sm	oring					
Aspect	-5	4	3	-2	-1	0	1	2	2	4	5	Assumptions	Score Per Aspe
Aquatic and Terestrial Habitet Protection	Elementary of highlight for race of and angus ed apacies	Etrimation of significant amount of common habital	Elimination of review encours of common flability.	Significant habitat imporament	Minute programment to exacting	No impact on habitet	Moor enhancement of existing habitat	Significant enhancement of eniging nations	Creation of minor amount of common habital	Creation of significant amount of common habitat	Creebon of critical habital for rare or endangered species	Plant elimination restinat Chemiseath Plant is intermitant at earn habitel. Its naturalists that has been modified by contracous plant discharges.	3
testhetics - Solids and Floatables	75%- reduction in votation of Sole with no E&F capture	50 - 75% of fine with no SSF removal	25 - 50% of Sow with no Sali (singuist)	10 - 25% of flow with no BSF (Withorst)	Reduces efficiency of existin SAF control device, 0 - 10% of fine with no SAF removal	No change in S&F removal	0 - 10% of decharged flow hosted with positive SAF removal (screens)	10 - 25 % of discharged flo beated with positive SAF returned (screens)	25 - 50% of discharged flow Essaled with process 55F (winned (sureers)	50 - 75% of decharged New Tracked with positive SAF removal screens	75% - of discharged flow treated with positive (LSF removal (screens)	Filt options will provide changes in SSF Riveteral	0
estherics - Odor and Air Emissions	Create encoying odor source affecting > 20 customers often	Create entroying odor ansura affecting *20 customers ofter or *30 customers occasionell	Creste servicing palar source affacang 120 customers occasionally	Create detectable oder source affecting + SC customers oben	Ornale detectable none source adecting + 50 customers occasionally	No impact on oders	Eliminate delectable odor assurce effecting < 50 customers occasionally	Eliminate detectable oder adurce effecting > 50 customers uffect	Environ arresting oder source effecting +26 austiniers accessmally	e Eliminate annoying oder source affecting <25 customers often or >25 customers occasionally	Eliminate serviying ador source sfecting +20 customers often	Odor will be allowable from all meditions along John Interceptor being allowables. Treathern Plant adols which allow John Interceptor being allowable. Potential for minor storage and jump staton infores at new pine.	2
lissolved Oxygen npects	Stellarius of in-strates DO by 3 regil + theiring critical flow parint	Continuous reduction of in- surem DO of Zings! #	Continuous reduction of in- calcium, DC of G - 2 regit promities reduction of in- stream IPO 2 - 4 regit during critical countries	Intermittent reduction of in all seen DO 2 mg8 + possible during non-critical conditions. reduction of DO 3 - 2 mg8 states critical conditions.	Intermittent reduction of in stream DO 0 - 2 mg/l pussible g during non-critical contitions	Nis DO anglacts	intermillant improvement of in-stream OC G - 2 mg/l	intermitent ingrovement is in extreme DO 2 mg/s - intermittent critical condition in processing to the condition of the condi	Continuous improvement of a all som DO 9 - 2 mg1 elemitlant critical condition and treamain. 2-4 mg1	Confinuous improvement of in- streen (IO 2 ingl(+	Continuous improvement of ortical condition in atream DO 2 mg/l =	Plant efficient basis derivation will provide improvement of an attento DO 0 - 2 mg/L but stream may day up to summer.	a.
lownstream npects	75%+ increase in arrical SOC at overent hade	50 - 75°s increase in armsel BDIS or nutrees hinds	25 - 50% increase in annual BOD or nutrient histor.	10 - 25% increase in annual BOD or nustant luads (CBO + runoff)	Potential 0 - 10 % increase in amount everage BIOD or nutrent leads (CSO + runoff)	No impact on BDD or number leads (CSD = runnif)	0 - 10% reduction in annual SOD or nutrient losits (CSI + runoff)	1 10 - 2514 reduction in annual BIOO or nutries loads (CSO + nunal)	25 - 50% reduction in annual BOD or nutrient loads (CBO + runoff)	50 - 75% reduction to atmost 800 or nutrient losess (CSO - nunoff)	75%- reduction in arrival BOD or nutrient loads (CBO - runoff)	Improved capture and treatment of SSCs will provide 6 - 10 fa reduction in annual SCCs or nutrient leads (SSC + nutriel) absence sent of Jefferson County	1
tream Flow npacts (Peak lows)	25% + increase to posit firms	10% - 25% s'acreann às pesti. Nome	Up to 10% excreme to punk forms	Frequent increase in New during ortical conditions	Possible increase in everyge flow, or minor increase in high flow prests	No impact on pask flows.	Minor reduction in flows - n algrificant peek reduction	o Minor reduction in peak flows under some condition	Up to 10% reduction in journ	10% - 25% reduction in peak flows	75%- reduction in peak flows	Flow peaks to be reduced due to diversion of plant efficient.	3
treem Flow npacts (DWF only)	25% oscrans in few during critical conditions.	10% - 25% decrease in few during critical conditions	0-10% permanent over same in flow during cirtical consistence	Frequent decrease in flow during critical conditions.	C Prossible decrease in sverage Now	No impact on average or base observibles	infermitiant increases in arream flow - not timed to critical conditions	Intermittent increase in stream flow - often improved ordinal conditions	0 - 10% permanent increase in stream flow during citical zond/bons	n 15 - 25 % permanent increase in atteam flow sharing critical conditions	25% permanent increase in stream fine during critical conditions.	Base for substantially reduced, but this restricts stream to its natural condition passible and negative repends believe such	0
estructions: (1.) Scr otal score for this a	ore each alternative for elternative in this value.	each of the seven espo (3.) Sheded eres repres	cts of the value. Score ents "fatal flaw", Alten	es can be positive or neg natives that score in this	stive, depending on the area should not be pro-	e impact of the alterna oposed.	tive on the value, (2.)	Total the scores for e	ich aspect to get the		ta		
Aspect	Rationale	7.77	-				Measurement I	Anthod		1	Te	otal Score (Default)	10
quatic and erestrial Habitet rotection	shape and characteristics	etc. Predictive models	uned to evaluate wat we	h changes in base flow, presther control measures to nate future positive and ne	ove a limited ability to pre	ee cover, channel edict biological diversity	and other water quality	v impacts. Flow models	nodels will address DO will predict base flow nges in erosion and wate	Note: The total score of calculated.	alculated may be more	than 25. In the instances where this might occur, a default ma	ximum score of 25 w
esthetics - Solids nd Floetables	advanced treatment optic	ns. Storm water retention	n, constructed wetlands	overnents in capture rates and other control system y, penalty points will be as	s may provide solids and	floatables removal as	Curreit solids and floatables removal efficiency has been estimated to all sites with control schoology. Improvements in removal efficiencies will be estimated for all asternatives that and sisterning or other elvipscool treatment technologies. Where treatment is proposed for storm water discharges removals will be estimated based on publisher removal data.						
esthetics - Odor nd Air Emissions	Odors and air emissions by both the intensity and from sewage handling fac	he quality of the odor. D	age systems, pump stati electable and annoying	ions, force mains, and lon are two common descripts	g flat sewers. Odors are ons of different intensities	generally characterized and qualities of odors	Odor emissions from sewage handling facilities can be modeled for witerable, qualify, and geographic spread. For planning purposes this world or alwalands in and common, and will not be other sacepit in very trace circumstances. The potential for odor and air emissions will be actimated based on typical applications and model predictions for storage time, number of events, average flow velocities etc.						
Issolved Oxygen	Dissolved oxygen in stree	ma is dependent on a va	riety of factors including	BOD load, nutrient load, s	stream flow velocity, wate	er temperature, etc.	For BIGC the Water Quality Tool will be used to estimate the impacts of various bading conditions, flows, temperatures, etc. Probable impacts of individual projects will be estimated based on competitions to the various stream condition scenarios.						
ownstream spects	Downstream impacts refe been identified as the sou to get to the Gulf, but can	rce of 30 - 45% of the tot	al nutrient loads reachin	County, Nutrient loadings g the Gulf of Mexico, BOD	in the Ohio (not just Jeffe) is not likely to persist in	erson County) have the river long enough	Pollutant removals wif average loads, since t and cumulative.	be estimated based on he downstream impacts	reductions in annual are primarily long-term				
tream Flow spects (Peak ows)		es as are often caused b		rahed can erode the strea	mbed, damage aquatic a	nd terrestrial habitat,	sources, and the Wate	estimete flow peaking to c Quality Tool has a hy- during various storm ex	fraulic component to				
tream Flow	Diversion of flows away fr measures such as ground	om a stream due to aber water pumping can incre	donment of a treatment	plant etc. can reduce base oficial results.	e flows in a stream. Alter	matively, other control	Predictive models can Water Quality Tool har flows during various d	s a hydraulic componen	vidual sources, and the				



	oject #1						5	JI JI N	IB01A 03				
Value:	Environmental E	nhancement		7						-			
Aspect	-5	4	-				Sc	oring					
Aquatic and	Simprodon of robits for own or	-4 Dimension of appropriate	Shrengon of moor amount	-2	-1	0	1	2	3	4	5	Assumptions	Score Per Aspec
erestrial Habitat Protection	endangered species	smoont of common habitat	of common tratitat	Significant habital imparament.	Minor imparement to existing hebital	No impact on habital	Minor enhancement of scieting habitat	Significant enhancement of exterior nutrition	Greation of mmor amount of community habited	Creator of aignificent emount of common habitat	Creation of critical habitet for rare or endangered species.		
Aasthetics - Solids	79% reduction in votation of	50 - 75% of the with no SAF	25 - 50% of Sour with no Sail	F 10 - 25% of time with no SAF	Reduces efficiency of weathy	9	0 - 10% of decharged flow	10 - 25 % of doctarged for	25 - 50% of discharged flow	50 - 75% of desthersed free	79% • of discharged fine		
end Floatables	Now with no SSF papture	(mone)	CMETOWORK	removal	Reduces efficiency of weather SSF control device, 0 - 10% of flow with no SSF removal	No change in SAF removal	realed with positive S&F	rected with positive SAF removal (sureers)	treated with positive SSF (emoved (screens)	treated with positive SAF removal acreens	recised with positive SAF removal (Acresia)		
						- N			DECKE STORY		(Second Second S		
Austhetics - Odor		Create enmount aday equips	Create auriores play source		Contra description in the		Elemente delectable ador	Eliminate delectable odor	Eliminate envoying odor amen		Elimenate arrigaving oder		
and Air Emissions	Create enloying other source effecting > 20 customers often	Craeta annoying odor equica effecting <20 customers other or > 20 customers occasional	affecting ×20 continues upperformativ	Create detectable ador source effecting > 50 customers after	Create detectable ador source effecting < 50	file implaction odors	source affecting < 50	surviva affecting > 50	effecting <20 customers	 Eliminate arranging odor source affecting <20 customers often or >20 customers occasionali; 	Source affecting >20		
										S - 20 COMMING OCCUPANT	Comment of the		
					the state of the			-					
			Continuous reduction of in-	Intermittent reduction of in									
Dissolved Oxygen	Reduction of in chance IDO by 2	Continuous reduction of in-	about Dilota - Impt	stream DO 2 mgl + possible	intermittent reduction of in	No DO impacts	Intermittent improvement of	intermittent improvement of in-stream DO 2 mol *	Continuous improvement of a attenue DO 0 - 2 mg/l	Contract more amount of m	Continuous improvement of		
Impacts	cogs + ourseg colocal flow period	+ North Sto Old street Kal	protetie reduction of in- street DC 2 - 4 mg/ ourns	during non-critical canditions ing reduction of DG 0 - 2 mg4 dur	stream DIO 0 - 2 mg/l possitive during som-critical crinditions	Ne DO impacts	h-steam DO 6 - 2 mgt	in-street DO 2 mg/ +, interrettant critical condition improvements 0 - 2 mg/	intermittant critical condition improvements 2-4 mg/l	streets DG 2 mg/l +	official condition in stream DO 2 right +		
			STIESE STATEMENTS		THE RESERVE					The same of			
ATTACAMENT OF THE PARTY OF THE					and the state of t				Committee Commit				
Downstream Impects	79%+ increase in simulat BOD at outliers loate	50 - 75% increese in annual. BOO or nutrient loads	25 - 50% increase in enrust 80D or nutrient toads	10 - 25% increase in avrius 800 or nutrient heets (USO +	Polenški D - 10 % incresos ir annual average 800 or	Les aidans as there is a series	BOD or nutrient linests (CD)	0 800 or ruthern leads (CSC	25 - 50% reduction in ennual 800 or nuclent trade (CSC) •	BOD or nutrient leads (CSO +	75% reduction in annual 800 or nutrient loads (CSO -		
Stream Flow				rund)	nutrient issets (CSO • nunoff)		+ runoff)	• navofi)	runoff)	rurioff)	runoff)		
Impacts (Peak	25% - excresse in past flows	10% - 25% moreau at peak. Nows	Up to 10% increase in past	Frequent increase in fine during critical conditions	Possible increase in everyge flow or minor increase in high	No amport on peak forem	Minor reduction in tipes - n significant past reduction	Minor reduction in peak flows under some condition	Lip to 10% reduction in peak	10% - 25% reduction in past	25% reduction to peak flows.		
flows)	Section Figure College		91000000000000000000000000000000000000		New pastes		-principal reaction	under some condition	-				
			0.10% narranged decrease										
Stream Flow Impacts (DWF only)	25% decrease in few during critical conditions.	10% - 25% decrease in flow during critical conditions	in few during critical conditions	Frequent decrease in flow during striked conditions	Possible decrease in average form	No impact on average or trate observings	Intermittent increase in atreum flow - not timed to critical conditions.	intermittent increese in streets flow - often improves critical conditions	5 - 10% permanent incresso i atream flow during critical	in 57 earn fire during critical	25%- partialised necessa in streets few during critical		
			and a second				Disca Cordios	CHES CINCIONS	Conditions	conditions	conditions		
		0.24	2 152 3 22		7.1								T
otal score for this al	ore each alternative for e alternative in this value. (3.) Shaded area repres	cts of the value, Score onts "fatal flaw", Alten	es can be positive or neg- natives that score in this	tive, depending on the area should not be pro	e impact of the alterni oposed.	stive on the value. (2.)	Total the scores for e	sch aspect to get the	7.1	Total F	law Score Calculated	4
		S. C. IMARIAGO, CHIP CO MOST	SAMESCON CONTRACTOR	Scotle-Schliebone Historic	THE PERSON OF THE POST	No.							
Aspect	Rationale						Measurement I	Method			C	corrected Score	4
Aquetic and	Wet weather projects may	affect both equatic and	terrestrial habital throug	th changes in base flow, pe	ak flow, water quality, tr	ee cover channel	and configuration, tre-	specifically address chi cover etc. Predictive	models will address DO	La contract			
Protection	shape and characteristics changes, erosion impacts	etc. Predictive models	used to evaluate wet we as must be used to estin	on changes in base now, pe eather control measures he nate future positive and neg	ve a limited ability to pre- selve impacts.	dict biological diversity	and other water qualit and peak flow rates to	y impacts. Flow models allow estimates of cha	will predict base flow	Note: The total score of defoulated.	alculated may be more th	nan 25. In the instances where this might occur, a default m	aximum score of 25 will t
Totalcalon							surface area.	and the same of the	ingrae in Gregoria and Hario	9			
							Comment wollde and So		cy has been estimated to				
Austhetics - Solids	Most CSOs have some for	rm of solids and floatable	es control baffles. Impre	overnents in capture rates of	on be expected with scr	eening or other	all sites with control to	schoology, Improvemen	ts in removal efficiencies				
and Floatables	advenced treatment option	ns. Storm water retention	n, constructed wetlands	, and other control systems y, penalty points will be ass	may provide solids and	finatables removal as	edvanced treatment to	alternatives that add s schnologies. Where tre	stment is proposed for	THE PERSON NAMED IN			
	NASS STATE OF THE PARTY OF THE			representation of the second	and a man parame	manany assessment.	storm water discharge removal data.	es removals will be esti-	nated based on published				
							Odor emissions from	sewage handling facilitie	s can be modeled for				
	Odors and air emissions	can be generated in store	age systems, pump stati	ions, force mains, and long	flat sowers. Odors are	generally characterized	intensity, quality, and level of evaluation is n	geographic spread. For at common, and will not	plenning purposes this				
nd Air Emissions	from sewage handling fac	ities.	etectable and annoying	are two common descripto	s of different intensities	and qualities of odors	rare circumstances.	The potential for odor an pical applications and n	d air emissions will be	DOM:			
							storage time, number	pical applications and re of events, average flow	velocities etc.				
2.725.000							For BGC the Water Q	unity Tool will be used t	o estimate the impacts				
npacts	Dissalved oxygen in strea	ms is dependent on a va	riety of factors including	BOD load, nutrient load, st	ream flow velocity, water	r temperature, etc.	of various loading con impacts of individual p	ditions, flows, temperati rojects will be estimated	res, etc. Probable based on comparisons				
							to the various stream			V-915-00			
										1000			
lownstream	Downstream impacts refer	to conditions in the Ohio	River below Jefferson	County: Nutrient loadings is	the Ohia (not just Jeffe	rson County) have		be estimated based on					
b.	been identified as the sour to get to the Gulf, but can	ce of 30 - 45% of the total	al nutrient loads reaching	g the Gulf of Mexico. BOD	is not likely to pensist in	the river long enough	average loads, since to and cumulative.	he downstream impacts	are primarily long-term				
							- Cumulative			4.4			
100				1			202 00 -						
	Extremently high peak flow make water based recreat	es as are often caused b	y urbanization of a water	rshed can erode the stream	ibed, damage aquetic a	nd terrestrial habitet,	Predictive models can sources, and the Water	estimate flow peaking for Quality Tool has a hyd	actors from individual fraulic component to				
ows)	make water based recreat	on unsare or impractical					estimate stream flows	during various storm ev	ents.				
tream Flow D	Diversion of flows every for	om a stream due to at a	donument of a treatment	plant etc. can reduce base	Sans beautiers of	and and	Predictive models can	estimate flows from ind	vidual sources, and the				
npacts (DWF only)	measures such as ground	water pumping can incre	ase base flows with ben	eficial results.	n a stream. Aller	marrery, other control	Water Quality Tool has flows during various di	a hydraulic componen	to estimate stream				
								, weather events.					
cronyms GC - Beargrass Creek			DO - Dissolved oxygen		S&F - Solids and floatab	100 m							



Malura	,				errerson	town Ble	naing El	ilminatio	n Evaluat	ion - Alte	ernative	3	
Value:	Eco-Friendl	y Solutions											
Aspect	-5	4	-3	-2	1 4	1 0	I 1	coring	1 3	4			
Non-Renewable Energy Consumption	Primary energy consumption is greate than secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primary energy consumption equal to 30 - 75% of secondary treatment	Primary energy consumption equal to 15 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary treatment	tio energy consumption except for cleaning and maintenance	Cleaning and maintenance not needed, no primary consumption	NA .	NA .	NA .	NA S	Assumptions Energy consumption needed for storage and pump station at the plant. 50% of flow pumped, secondary treatment still required and of pipe.	Score Per Aspect
Use of Natural Systems	Constructed tacilities pertnerently displace 5+ acres wetlends or 50% locally available green space	Constructed facilities permanently displace 3 - 5 acres wetlands or 25 - 50% locally sveilable green space	Constructed facilities permanently displace 1 - 3 acres wetlands or 10 - 15* locally available green space	Constructed facilities permanently displace 0 - N acre welfands or up to 10% locally available green space	Constructed facilities lemporarily disrupt welfands or green space	Alternative does not use or affect natural systems, wellands, or green space	Alternative doesn not use natural systems, but enhances green space or walland	Natural systems play a mine role in alternative function, up to 1 acre wetland or 10% additional green space created	Natural systems are significant part of alternative function, 1 - 3 acres of welfund created or 10 - 25% additional green space	Alternative fully uses natural systems, 3 - 5 ecres of wetland created or 25-50% additional green space.	Alternative results in multi- use natural system development, 5+ acres of wetland or 50% additional green space	Construction would temporarily disrupt green space, but potentially allow new green space	3
Multiple-Use Facillies	Constructed facilities permanently eliminate recreational apportunity	Constructed facilities significantly impare recreational opportunity	Constructed facilities nuclerately impare recreational opportunity	Constructed facilities have minor impacts on recreational opportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Alternative improves access to existing recreational areas	Alternative has limited positive impact on recreation	Alternative significantly enhances recreational opportunities	Alternative increases recreational opportunities in area	Alternative results in multi- use facility	Portion of plant site could be converted to multi- use recreation when treatment process is decommissioned.	2
Source Control of subwatershed pollutant loads	increased by 50%	Poliutant loadings are increased by 30 - 50%	Polistant leadings are increased by 10 - 30%	End of pipe pollutant loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely highe	End of pipe pollutant loading are unchanged	Diversion transfers more than 25% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 50% of pollutant loadings to less sensitive receiving water	Oliversion transfers more than 75% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 90% of pollutant loadings to less sensitive receiving water	Diversion transfers more than 100% of pollutant loadings to less sensitive receiving water	59% of pollutant loads transferred to Ohio River, a less sensilve watershed.	2
Non-Obtrusive Construction Techniques	Permanent kas of green space or secutive area disruption	Mein thoroughfare closures, sensitive area temporary disruptions	Widespread dust and noise, biasting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, traffic lane clasures	No construction impacts	NA	NA	NA	NA	NA	Construction would cause localized dust and noise with street clasures	-2
Consistent Land Use	Introdive or nuisance facilities inconsistent with neighborhood or lend use.	Facilities inconsistent with neighborhood or land use.	Pacility characteristics mitigated to reduce impact on neighborhood	Facilies have significant impact on development density or land use	Facility has minor impact on development density or land use	No impact on lend use or no above ground facilities	Alternative mitigates existing competibility problem	Alternative removes facility inconsistent with neighborhood	Alternative removes nuisance facility from neighborhood	Alternative enhances property values in neighborhood	Alternative provides enhancements that significantly improve neighborhood	Fectibles on plant site will be reduced to a pump station and storage facility, oliminating the existing incompetable use of a treatment facility.	2
Impermeable Surfaces	S acres + of impermeable surfaces are added	3 - 5 acres of impermeable surfaces are added	1 - 3 acres of impermeable surfaces are added	up to 1 acre of impermeable surfaces are added	Minor increase in impermeable surfaces added	No change in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 acre of impermeable surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces removed	More than 5 acres of impermeable surfaces removed	No charge in impermeable surface in all options	0
LEEDS Performance	NA	NA	NA	NA	NA.	LEEDS not applicable or LEEDS acore <10	LEEDS Score 10 - 25	LEEDS Centred	LEEDS Silver	LEEDS GOM	LEEDS Platinum	LEEDS not applicable or LEEDS score < 10	0
nstructions: (1.) to get the total sc	Score each alternat ore for this alternat	ive for each of the eightive in this value. (3.) S	nt aspects of the value haded area represent	s. Scores can be posi s "fatal flaw". Alterna	tive or negative, depend tives that score in this	ding on the impact of th area should not be prop	e alternative on the va	due. (2.) Total the score	s for each aspect		Total Raw Score	Calculated	3
Aspect	Score each alternat ore for this alternat Rationale	ive for each of the eight lve in this value. (3.) S	nt aspects of the value haded area represent	s. Scores can be posi s "fatal flaw". Alterna	tive or negative, depend tives that score in this	ding on the impact of th area should not be prop	e alternative on the va		s for each aspect		Total Raw Score (3
o get the total sc	Rationale	ive in this value. (3.) S	haded area represent	s "fatal flaw". Alterna	tives that score in this	area should not be prop	Measurement N	Method gy consumed per MG of flow to		Note: The total score maximum score of 25 v	Total Score (E		
Aspect Von-Renewable	Rationale Eco-friendly adultions w provides penalty points Natural systems respiece	ive in this value. (3.) S rould be espected to be low of for high energy consuming a	haded area represent onsumers of non-renewable Bernatives.	s "fatal flaw". Alterna e energy Benchmarking ene e layours, constructed biose	tives that score in this	area should not be prop	Measurement N Evaluation of primary energy energy consumed at the W Acres of wellands and other	Method gy consumed per MG of flow to	nated, compared to the	Note: The total score of 25 v	Total Score (E	Defaultj	
Aspect Aspect Von-Renewable Energy Consumption Use of Natural	Rationale Eco-friendly adultions a provides penalty points Natural systems replact various kinds. Options Eco-friendly adultions of	Ive in this value, (3.) S could be aspected to be low or for high energy consuming a concrete and steel construct that reduce wetlands and gre	onsurvers of non-renewable learnetives. Tion with wet bottom storage en space get penalty points es har both water-based and	s "fatal flaw". Alterna e energy, Benchmerking ene e lagoons, constructed bioer.	tives that score in this repy consumption against con- reses, rain gardens etc. that is cancing, keyeking, fishing,	area should not be prop	Measurement N Evaluation of primary energy energy consumed at the W Acres of wellands and othe subjective evaluation of the Subjective evaluation of ch	Method gy consumed per MG of flow to CWTP per MG treated. rr types of green space created "basis" of the alternative - "green ange prediction in the quality is, increased bean flow or decre	rested, compared to the or eliminated. Also includes ent or fact or fa	Note: The total score maximum score of 25 to	Total Score (E	Defaultj	
Aspect Aspect Von-Renewable Energy Consumption Jise of Natural Systems Auttiple-Use	Rationale Eco-tendly authliene approvides penetly periodic penetly pene	Ive in this value, (3.) S ovid he aspected to be low or for high energy consuming a a concrete and steel construct that reduce wetlands and gre reste recreational opportunite reste recreation. Bird watching, hill ds at the source through beh ds at the source through beh	phaded area represent onsureers of non-renewable Renedives. Ston with wet bottom storage een spince get penalty points is for both water-based and ng, biking, picnicing, campin	s "fatal flaw". Alterna s energy. Benchmarking ene is lagoons, constructed bios- riparien recreation. Bostling ing sto, would be considered	tives that score in this repy consumption against con- reses, rain gardens etc. that is cancing, keyeking, fishing,	area should not be prop ventional secondary treatment norsess green space of wedge, swimming etc. would	Measurement N Evaluation of primary energy energy consumed at the W Acres of wellands and othe subjective evaluation of the Subjective evaluation of cha- result of batter water qualify time cover or vegitated rises Modeled land-side politificat	Method gy consumed per MG of flow to CWTP per MG treated. rr types of green space created "basis" of the alternative - "green ange prediction in the quality is, increased bean flow or decre	rested, compared to the or eliminated. Also includes sen' or "grey". The or rigation environment as a send flow peaks, increased left by the SGC Water Qualif.	Note: The total score of 25 of maximum score of 25 of	Total Score (E	Defaultj	
Aspect Aspect	Rationale Eco-triently solutions aprovides penalty points Natural systems replace various kinds. Options Eco-triently solutions or bar direct wastern kinds. Options Controlling pollution to avoiding and of pipe ten	Ive in this value, (3.) S rould be especied to be love for high energy consuming a coincrete and steel construct that reduce wetlands and gire reste recreational opportunities rester recreation. Bird watching, fall dis at the source through beh- streent requirements	consumers of non-renewable beneditives. It is not storage of penalty points as her toolt water-based and rig, tiking, picnicing, campil evior modification, product a evior modification, product a	s "fatal flaw". Alterna e energy. Benchmarking en e lagoons, constructed biose. riparien recreation. Bosting getc. would be considered epiacements or stormwater.	tives that score in this regy consumption against com vestes, rain gardens etc. that in cancing, keyeking, fishing, related riperian recreation.	area should not be prop ventional secondary treatment ventional se	Measurement N Evaluation of primary energy energy consumed at the W Acres of wellands and othe subjective evaluation of the Subjective evaluation of the result of batter water qualify free cover or vegitated rises Modeled land-side politificat Tool or by comparision to the	Method by consumed per MG of flow by COWTP per MG treated. Trypes of green apace created by the stemative - Tyre anges predicted in the aquelic, it is considered to the stemative - Tyre anges predicted in the aquelic for an areas etc. Soding reductions as calculated to the stematic values or plot program behalve construction impacts his	rested, compared to the or eliminated. Also includes sen' or "geey". The or right of the send flow peaks, increased send flow peaks, increased send flow peaks, increased send flow peaks, increased send flow the SGC Water Quality measurements.	Note: The total score maximum score of 25 to	Total Score (E	Defaultj	
Aspect Aspect	Rationale Econtendly solutions aprovides penalty points Natural systems replact various knots. Options Eco-triently solutions of the discussion of the di	ive in this value, (3.) S rould be espected to be low or for high energy consuming a coincrete and sheet constitute that reduce wetlands and girs reads recreational opportunities resease recreational opportunities resease recreation. Bird watching, hiki- dis at the source through behinder requirements repacts on braffic, noise and it can either enhance or detain	innsumers of non-renewable harmetives. Tion with wet bottom storage an space get penalty point as his both water-based and rig, biking, picnicing, campit evior modification, product is ust are all measures of the to the product of the surrounding prog-	s "fatal flaw". Alterna e energy. Benchmarking on e lagoons, constructed biose. riparien recreation. Boating splic, would be considered aplacements or stormwater triendliness of an alternative.	rityes that score in this rity consumption against con- reside, rain gardens etc. that is canoing, keyeking, fishing, railated reprises recreation. canoing keyeking fishing training the capture of t	area should not be prop ventional secondary treatment crease green space of wedge, swimming etc. would use publicants thereby maky points for creating	Measurement N Evaluation of primary energy energy consumed at the W Acres of welfarchs and other subjective evaluation of the Modeled land-side politization Tool or by comparation to its Subjective evaluation of pro- construction envisioned for construction envisioned for At the planning level, proper	Method by consumed per MG of flow by COWTP per MG treated. Trypes of green apace created by the stemative - Tyre anges predicted in the aquelic, it is considered to the stemative - Tyre anges predicted in the aquelic for an areas etc. Soding reductions as calculated to the stematic values or plot program behalve construction impacts his	insted, compared to the or eliminated. Also includes ent or "gey". or rigarian environment as a seased flow peaks, increased right by the BGC Walser Quality measurements. and on the type of steller impacts on the end, enhancements are	Note: The total score maximum score of 25 v	Total Score (E	Defaultj	
Aspect As	Rationale Eco-triendly solutions up- provides penalty points Natural systems replace various kinds. Options Eco-triendly solutions of the desired water- based in Controlling pollution to a reading and of pipe ten Probable construction is multisines conditions. Alternative configuration uply. The same pump a hadden from view by ten Adding impermeable su Adding impermeable su	Ive in this value, (3.) S rould be expected to be low of for high energy consuming a coincrete and steel constitute that reduce wetlands and gra- reate recreational apportunite resets recreation. Bird watching, hill dis at the source through behintment requirements repects on traffic, noise and all can either enhance or detra- can either enhance or detra-	consumers of non-renewable benedities. The matter of non-renewable benedities of non-renewable benedities, and the storage of penalty points are set took water-based and rig. biking, penalty, compile witer modification, product a vivial measures of the surrounding programmes or other green space areastence that the right in another or other green space	e energy. Benchmarking one energy. Benchmarking one lagoons, constructed biose. riparien recreation. Bosting agric, would be considered applications of an alternative. Triendliness of an alternative with the neighborhood. If a solded to enhance the neigh send the bidel transport of s. and the bidel trans	rives that score in this ripy consumption apainst con- related, rain gardens etc. that is canoing, keyeking, fishing, related ripertan recreation, related ripertan recreation, management BMPs that caph Construction impacts get pe resty unfriendly pump station are larger perceif of land is evaluation- thornood.	area should not be prop ventional secondary treatment noreass green space of wedge, swimming etc. would use postulants thereby smally points for creating can be noisy, smally, and sie, a pump station can be	Measurement N Evaluation of primary energy energy consumed at the W Acres of veitlends and other subjective evaluation of the Subjective evaluation of pro- construction envisioned for At the planning level, proper surrounding properties. The surrounding properties.	Method y consumed per MG of flow to CWTP per MG treated. If types of given space created "basis" of the atternative - "gri singes predicted in the aquatic time along resolutions are calculate to statistic vashess or pilot program bable constitucion impacts ha the atternative. It cash to defend to evoid neg- pending in the cash of the considered to cash to defend to evoid neg- pending in the westelling of a trapes project definition and bursages project definition and bursages	insted, compared to the or eliminated. Also includes ent or "gey". or rigarian environment as a seased flow peaks, increased right by the BGC Walser Quality measurements. and on the type of steller impacts on the end, enhancements are	Note: The total score maximum score of 25 to 10	Total Score (E	Defaultj	



Project #1							2 1 1 1	T_NB01	4_03_C				
Value:	Eco-Friendl	y Solutions											
Aspect	- 5	-4	-3	-2	-1	1 0	So	coring	3	4	5	Assumptions	Score Per Aspec
Non-Renewable Energy Consumption	Primary energy consumption is greate then secondary treatment	Primary energy consumption equal to 75 - 100% of secondary treatment	Primery energy consumption equal to 30 - 75% at secondary treatment	Primary energy concumption equal to 15 30% of secondary treatment	Primary energy consumption equal to 0 - 15% of secondary beatment	No energy consumption except for cleaning and meintenance	Cleaning and maintenance not needed, no primary consumption	NA	NA .	NA	NA.	Energy consumption due to increase in pumping	-1
Use of Natural Systems	Constructed facilities permanently displace 5+ acras wellends or 50% locally available green space		Constructed facilities permanently displace 1 - 3 acres wellands to 10 - 151 locally evallable green space		Constructed facilities temporarily disrupt wetlands or green space	Alternative does not use or affect natural systems, wellends, or green space	Attention doesn not use neturel systems, but enhances green space or wellend	Natural systems play a minorole in attenuative function, up to 1 acre wellend or 10% additional green space created	significant part of alternative	systems, 3 - 5 acres of	Atternative results in multi- use natural system development, 5+ acres of wedland or 50% additional green space	Force Main construction temporarily disrupts green space	-1
Multiple-Use Facilities	Constructed facilities permanently eliminate recreational opportunity	Constructed facilities significantly impare recreational opportunity	Constructed facilities moderately impera recreational opportunity	Constructed facilities have minor impacts on recreational opportunity	Construction temporarily impacts recreational opportunity	No impacts on recreational opportunities	Alternative improves access to existing recreational areas	Alternative has limited positive impact on recreation	Alternative significantly enhances recreational opportunities	Alternative increases recreational opportunities in area	Alternative results in multi- use facility	No impact	0
Source Control of subwatershed pollutant loads	Poliutant loadings are increased by 50%	Poliutent loadings are increased by 30 - 50%	Polistant leadings are increased by 10 - 30%	End of pipe pollutent loadings are increased by 0 - 10%	End of pipe pollutant loadings impacts are inconsistent, but likely highe	End of pipe pollutant loading are unchanged	Pollutent loadings impects are inconsistent, but likely lower	Source control reduces pollutant loadings by 0 - 10%	Source control reduces pollutant loadings by 10 - 30%	Source control reduces poliutant loadings by 30 - 50%	Source control reduces pollutant loadings by more than 50%	End of pipe poliutant loadings impacts are inconsistent, but likely higher in all options	-1
Non-Obtrusive Construction Techniques	Permanent loss of green space or sensitive area disruption	Main thoroughfare closures, sensitive area temporary disruptions	Widespreed dust and noise, blasting, secondary street closures	Localized dust, noise and local street closures	Minor dust and noise, treffic lene closures	No construction impacts	NA	NA	NA	NA	NA .	Force mein construction would result in minor dust and lane closures	-1
Consistent Land Use	Intrusive or missence facilities inconsistent with neighborhood or land use.	Facilities inconsistent with neighborhood or land use.	Facility characteristics mitigated to reduce impact on neighborhood	Facilies have significent impact on development density or land use	Facility has minor impact on development density or land use	No impact on land use or no above ground facilities	Alternative mitigates existing compatibility problem	Alternative removes facility inconsistant with neighborhood	Alternative removes numerice facility from neighborhood	Atternative enhances property values in neighborhood	Alternative provides enhancements that significantly improve neighborhood	No impact on land use or above ground facilities in all options	0
Impermeable Surfaces	5 acres+ of impermeable surfaces are added	3 - 5 acres of impermeeble surfaces are added	1 - 3 acres of impermeable surfaces are added	up to 1 acre of impermeable surfaces an added	Minor increase in Impermeable surfaces added	No change in impermeable surface	Minor reduction in impermeable surfaces	Up to 1 acre of impermeable surfaces removed	1 - 3 acres of impermeable surfaces removed	3 - 5 acres of impermeable surfaces removed	More than 5 acres of impermeable surfaces comoved	No change in impermeable surface in all options	0
LEEDS	NA	NA	NA	NA	NA	LEEDS not applicable or LEEDS score <10	LEEDS Scare 10 - 25	LEEDS Certified	LEEDS Silver	LEEDS GOA	LEEDS Platinum	LEEDS not applicable or LEEDS score < 10 in all options	0
Performance	77.55												
Performance instructions: (1.)					Itive or negative, depend trives that score in this			lue. (2.) Total the score	s for each aspect		Total Raw Score	Calculated	4
Performance instructions: (1.) to get the total so Aspect									s for each aspect		Total Raw Score of		4
Performance instructions: (1.) to get the total so	Rationale	tive in this value. (3.) S	Shaded area represent	s "fatal flaw". Alterna		area should not be prop	Measurement N	Method yy sonsumed per MG of flow In		Note: The total score maximum score of 25	Corrected S		4
Performance instructions: (1.) to get the total sc Aspect Non-Renewable Energy	Rationale Eco-friendly solutions a provides penalty points Natural systems replace	tive in this value, (3.) S vould be expected to be low for high energy consuming of	Shaded area represent consumers of non-renewable alternatives.	s "fatal flaw", Alterna e energy, Benchmerking en e legoons, constructed bios	atives that score in this	area should not be progressional secondary treatment	Measurement N Evaluation of primary energy energy consumed at the W Acres of wetlands and other	Method yy sonsumed per MG of flow In	eated, compared to the		Corrected S	Icore	4
Performance instructions: (1.) to get the total sc Aspect Non-Renewable Energy Consumption	Rationale Eco-friendly solutions a growides penalty points Natural systems replact various kinds. Options Eco-friendly solutions of	ecould be expected to be low to four high energy consuming or concurring or their reduce wednesds and gift reduce wednesds and gift restore recreational opportunity restor recreational opportunity.	Shaded area represent consumers of non-renewable alternatives.	s "fatal flaw". Alterna e energy, Senchmerking en e legoons, constructed hios s.	arry consumption against con- welles, rain gardens etc. thet is	area a hould not be prop verificial secondary treatment increase green space of	Measurement N Evaluation of primary energy energy consumed at the W Acres of wetlands and ofthe subjective evaluation of the Subjective evaluation of chi	Aethod y consumed per MG of flow in CWTP per MG treated. It types of green space creation "basis" of the alternative - 'you mayou predicted in the equation, in creased base flow or decre	ested, compared to the or eliminated. Also includes sent or 'gray'.		Corrected S	Icore	4
Instructions: (1.) to get the total sc Aspect Non-Renewable Energy Consumption Use of Natural Systems Multiple-Use	Rationale Eco-liveridy solutions aprovides penalty politics aprovides penalty politics warrout kinds. Options various kinds. Options Eco-liveridy solutions to be direct water-based r	tive in this value, (3.) S rould be expected to be low for high energy consuming a e concrete and sleet construit that reduce wetlands and gri rester recreational opportunities or experiments of the second opportunities of distributions of	Shaded area represent inconsumers of non-renewable alternatives. Incline with wet bottom along seen space get penalty poets seen space get penalty poets seen for both water-based and long, bilking, picnicing, campa	s "fatal flaw". Alterna e energy, Benchmarking en le lagoons, constructed hios 	arry consumption against con- welles, rain gardens etc. thet is	area a hould not be prop verificial secondary treatment nonease green space of wading, swimming etc. would	Measurement N Evaluation of primary energy energy consumed at the Vi Acres of vertilends and othe subjective evaluation of the Subjective evaluation of the subjective evaluation of the subjective evaluation of the Modeled land-side polifulari	Aethod y consumed per MG of flow in CWTP per MG treated. It types of green space creation "basis" of the alternative - 'you mayou predicted in the equation, in creased base flow or decre	asted, compared to the or eliminated. Also includes ent' or 'gray'. or 'quartan environment as a exact flow peaks, increased		Corrected S	Icore	4
Instructions: (1.) to get the total sc ASPECT ASPECT Non-Renewable Energy Consumption Use of Natural systems Multiple-Use acitiles Source Control of subwalershed	Rationale Eco-friendly solutions provides penalty solutions provides penalty solutions aprovides penalty solutions replace various kinds. Options Eco-friendly solutions of	tive in this value, (3.) S rould be expected to be low for high energy consuming a e concrete and steel construit of the reduce wedlends and gri reside recreational opportunities or a secretary in the reduce wedlends and gri reside recreation. Bird watching, his dis at the source through between the requirements.	Shaded area represent consumers of non-renewable alternatives. cition with well bottom storage een space get penalty point idea for both water-based and idea, bilking, picnicing, campa havior modification, product r	s "fatal flaw". Alterna a energy, Benchmerking en legoons, constructed hios triparian recreation. Boating riparian recreation. Boating and the considered	arryy consumption against con- wales, rain parders etc. thet is wales, rain parders etc. thet is g, canoing, kayeking, fishing, related riperien recreation.	area a hould not be properly treatment of the properly treatment of th	Measurement N Evaluation of primary energy energy consumed at the Vi Acres of vertiands and other subjective evaluation of the Subjective evaluation of the result of better water quality tree cover or vegitated ripsa Modeled land-side politylard Tool or by somparisken to it	Aethod yr consumed per MG of flow in CWITP per MG treated. It pipes of green space creates "basis" of the atternative - 'yn anges predicted in the aquatic in a rese etc. I loading reductions as calculate areature values or pilot program basis construction impacts be	asted, compared to the tor eliminated. Also includes tent" or "grey". or riparities environment as a sased flow peaks, increased the by the BGC Water Quality in measurements.		Corrected S	Icore	4
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