APPENDIX K:

Present Worth Analysis

oital Cost Estimate Summary - Alternative No. 1 (Including	Land)					
1 Sewage Collection and Conveyance System		1			\$	10,405,519.2
2 State Route 115 Corridor Sewage Collection System	·		-		: \$	1,066,111.2
3 Sewage Conveyance System		<u> </u>			\$	988,416.0
4 Equalization Tank/Pump Station			1		\$	838,800.0
5 Connection Fee to Plains					\$	210,000.0
			Total		\$	13,508,846.4
eration and Maintenance Costs						
1 Total O&M Cost for Sewage Collection/Conveyance Sy					\$	77,050.0
2 Annual Treatment Fee to WVSA (\$160/EDU)	(480 EI	· · · · · · · · · · · · · · · · · · ·	<u> </u>		: \$	76,800.0
3 Annual Conveyance Fee to Plains Twp. (\$89/EDU)	(480 E	DUS)	<u> </u>		\$	42,720.0
	- 		<u> </u>		\$	196,570.0
	i	-		 	<u> </u>	
esent Worth Analysis			- 		4	
ren:	:					
en. nning period for PW calculations	-	20 Years				
count rate	A ?	375% as per		and PANED		
nd Escalation Factor per annum		.00%	YU LEA			
iu Escalation Pactor per annum		.00 /@				
ial Capital Cost	-	-				
· · · · · · · · · · · · · · · · · · ·	c	13,493,846				
Non-land	\$	15,493,640				
Land	\$ \$	15,00	J 			
Less sunk cost Total	Ф	13,508,84				
Total	Ψ	13,500,04	J			
eration and Maintenance Cost Summary Alternative 1		:				
Item 1	\$	196,57	n :			
Item 2		190,57	:			
Total	\$\$	196,57	<u> </u>			
I Otal	Ф	190,57				
alvaia:						
alysis: 1 Compute Present worth factor for planning period and	discount r	210				
Single payment present worth factor	discount re	atc.		0.424688	2	
Annual payment present worth factor				13.149983		
Annual payment present worth factor				13.14330	<u>.</u>	
2 Salvage Value						
Z Salvage value						· - · · · · · · · · · · · · · · · · · ·
A. Sewage Collection System (Study Areas 1 and 2)	,,					,
71. Condge Consolion Cystem (Citady 74 cdc 1 dnd 2)			Ca	pital Cost		
Cost for Collection/Conveyance System Piping with 50	Ovr life		\$	9,544,33	7	
Cost for equipment with 20 yr. life and therefore no sa			\$	853,68		
(see breakdown for 20 and 50 yr. items following this:		<u>-</u>	.* .	000,00		
(see breakdown for 20 and 50 yr. items following tries	section)					
		0 - 4 4 0 0	: -			
Initial Value (non-land)	. >	9,544,33		-		
Annual Straight line Depreciation based on			50 years			
		190,88				
			20 years			
Cumulative Depreciation over planning period of			55			
	\$	3,817,73				
Assume salvage value = net depreciated value = Initia		ccumulated	Deprecial	ion		
Assume salvage value = net depreciated value = Initia	\$	ccumulated 9,544,33	Deprecial	tion		
Assume salvage value = net depreciated value = Initia Initial Value Accumulated Depreciation	\$ \$	Accumulated 9,544,33 (3,817,73	Deprecial 37 35)			
Assume salvage value = net depreciated value = Initia	\$	ccumulated 9,544,33	Deprecial 37 35)		ar 20	
Assume salvage value = net depreciated value = Initia Initial Value Accumulated Depreciation Salvage Value	\$ \$ \$	9,544,33 (3,817,73 5,726,60	Deprecial 37 35) 02	at ye		
Assume salvage value = net depreciated value = Initia Initial Value Accumulated Depreciation Salvage Value Salvage Value	\$ \$ \$ alue \$	9,544,33 (3,817,73 5,726,60	Deprecial 37 35) 02	at ye	ar 20 ar 20	
Assume salvage value = net depreciated value = Initia Initial Value Accumulated Depreciation Salvage Value	\$ \$ \$ alue \$	9,544,33 (3,817,73 5,726,60	Deprecial 37 35) 02	at ye		

Ť	State Route 115 Corridor Sewage Collection System			Capital Cos	st		
+	Cost for Collection/Conveyance System Piping with 50 yr.	lifo	- 	\$ 1,028			
	Cost for equipment with 20 yr. life and therefore no salvag		· :		,224		
	(see breakdown for 20 and 50 yr. items following this secti			Ψ 01	,224	,	
	(see breakdown for 20 and 50 yr. Rems following this secti	uii)					
	leikal Malua (nan land)	•	4 000 007		:		
	Initial Value (non-land)	\$	1,028,887				
- 1	Annual Straight line Depreciation based on			years			
		\$	20,578				
	Cumulative Depreciation over planning period of			years	:		
		\$	411,555				
	Assume salvage value = net depreciated value = Initial Va	ilue - Acc		preciation			
	Initial Value	\$	1,028,887				
	Accumulated Depreciation	\$	(411,555)				•
	Salvage Value	\$	617,332	a	t year	20	
					_		
	Salvage Value	\$	617,332	a	t year	20	
	Single payment discount factor	•	0.4246882		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	Present Worth of Salvage Value		262,174				
	Tresent World of Salvage Value		202,174				
	·						
' ·	Sewage Conveyance System to Plains						
		111	,	Capital Co			
	Cost for Collection/Conveyance System Piping with 50 yr.				,040		
	Cost for equipment with 20 yr. life and therefore no salvage			\$ 29	376		
	(see breakdown for 20 and 50 yr. items following this sect	ion)					
	Initial Value (non-land)	\$	959,040				
	Annual Straight line Depreciation based on		50	years		:	
	•	\$	19,181			i	
	Cumulative Depreciation over planning period of			vears		 	
	Controlation Depresentation of the planning period of	\$	383,616	70010			
	Assume salvage value = net depreciated value = Initial Va			preciation		<u> </u>	
	Initial Value	\$	959,040	spicolation		:	
-	Accumulated Depreciation	\$	(383,616)				
	Salvage Value	\$	575,424	**************************************	t year	20	
	Oalvage value	.Ψ	313,424		it year	.20	
	Column Value	·	E7E 404			20	
	Salvage Value		575,424	**************	it year	20	
	Single payment discount factor		0.4246882				
	Present Worth of Salvage Value		244,376				
Э.	Equalization Tank/Pump Station Construction Cost Estim	ate					
				Capital Co	st		
	Cost for Tanks, System Piping etc. with 40 yr. life			\$ 68	0,166		
	Cost for equipment with 20 yr. life and therefore no salvage	ge value			1,134		• •
	(see breakdown for 20 and 40 yr. items following this sec			,			
	N						
	Initial Value (non-land)	\$	680,166				
	miliar value (non-laria)			years			
				years			
	Annual Straight line Depreciation based on	æ					
	Annual Straight line Depreciation based on	\$	17,004				
		\$	20	years			
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of	\$	20 340,083			<u>-</u>	
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V	\$	20 340,083 ccumulated D			<u>.</u>	
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of	\$	20 340,083			· · · · · · · · · · · · · · · · · · ·	
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V	\$	20 340,083 ccumulated D	epreciation		· · · · · · · · · · · · · · · · · · ·	
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value	\$ 'alue - Ac \$	20 340,083 ccumulated D 680,166	epreciation	at year	r 20	
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation	\$	20 340,083 ccumulated D 680,166 (340,083)	epreciation	at yea	r 20	
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation Salvage Value	\$ /alue - Ac \$ \$	20 340,083 ccumulated D 680,166 (340,083) 340,083	epreciation			<u></u> .
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation Salvage Value Salvage Value	\$ /alue - Ad \$ \$ \$ \$	20 340,083 ccumulated D 680,166 (340,083) 340,083	epreciation	at yea		
	Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation Salvage Value	\$ 'alue - Ac \$ \$ \$	20 340,083 ccumulated D 680,166 (340,083) 340,083	epreciation			

E. Connection to Plains					
*This item is a one-time fee to Plains Twp and the Salvage	e Va	alue is \$ 0			
F. Land	\$	45.000			· · · · · · · · · · · · · · · · · · ·
. Lanu	P	15,000			
Cumulative Escalation factor over planning period of			20	years	
		1.8	306111	•	
Future Value of Land at end of the planning period of			20	years	
	\$		27,092		
Salvage Value = Future Value					
Salvage Value	\$	27,092	20	vears	
Single payment discount factor			246882		
Present Worth of Salvage Value of Land			11,506		
				:	
		1			
3 Present Worth of Operations and Maintenance Costs					
Annual O&M Costs	\$	1	96,570		
Annual payment present worth factor		13.1	149983		
Present Worth of O&M Costs	\$	2,5	84,892		
4 Total Present Worth				· · · · · · · · · · · · · · · · · · ·	
Present Worth of Initial Capital Cost	\$	13.5	08,846		
Present Worth of O&M Costs	\$	· · · · · · · · · · · · · · · · · · ·	84,892		
Subtotal	\$		93,739	1	
Less Present Worth of Salvage Value		····	94,505)		
TOTAL PRESENT WORTH	\$		99,234		·

Capital Cost Estimate Summary - Alternative No. 2					
1 Sewage Collection and Conveyance System		:		\$	10,405,519.2
2 State Route 115 Corridor Sewage Collection System			,	\$	1,066,111.2
3 Wastewater Treatment Plant (0.15 MGD SBR)				\$	4,073,760.0
		İ	Total	\$	15,545,390.4
Operation and Maintenance Cost Summary Alternative 2					
1 Total O&M Cost				! \$	244,030.0
Present Worth Analysis				:	
Diven:					
Planning period for PW calculations	1	20 Years			
Discount rate		4.375% as per L	IS EPA	and PADEP	
and Escalation Factor per annum		3.00%	, ,	(ana / ADEI	
and Essaidastri dotor per dimain		0.0070			
nitial Capital Cost					
Non-land	\$	15,492,890			
Land	\$	52,500			
Less sunk cost	\$	-			
Total	\$	15,545,390			
Annual O&M costs					
Item 1	\$	244,030			
Item 2	\$	244,030			
	\$ \$	244.020			
Total	<u>.</u>	244,030		<u> </u>	
Analysis:					
1 Compute Present worth factor for planning period and di	scount rate	e.			
Single payment present worth factor				0.4246882	
Annual payment present worth factor				13.149983	
		,			
2 Salvage Value					· · · · · · · · · · · · · · · · · · ·
A. Sewage Collection System (Study Areas 1 and 2)					
			Car	oital Cost	
Cost for Collection/Conveyance System Piping with 50 y	r. life	•	\$	9,544,337	
Cost for equipment with 20 yr. life and therefore no salve		•	\$	853,682	
(see breakdown for 20 and 50 yr. items following this se					
		•			
Initial Value (non-land)	\$	9,544,337		-	
Annual Straight line Depreciation based on	. 1		years		
	\$	190,887	7.5		
Cumulative Depreciation over planning period of	. *) years	•	
	\$	3,817,735	.,		
Assume salvage value = net depreciated value = Initial	Value - Ac		eciation	 1	
Initial Value	\$	9,544,337		-	
Accumulated Depreciation	\$	(3,817,735)	١		
Salvage Value	\$	5,726,602		at year 20)
		# #			
Salvage Valu		5,726,602		at year 20)
Single payment discount factor Present Worth of Salvage Valu		0.4246882 2,432,021	<u>-</u>		

B. State Route 115 Corridor Sewage	Collection System		į į		
	Concount Cyclem		· · · · · · · · · · · · · · · · · · ·	Cap	ital Cost
Cost for Collection/Conveyance Sy	vstem Piping with 50 vr.	life			1,028,887
Cost for equipment with 20 yr. life	and therefore no salvag	ie valu	e	\$	37,224
(see breakdown for 20 and 50 yr. i	tems following this secti	ion)	· ;	Ψ	31,224
(coo broakdown for 20 and co jr. i	terns following this seed	1011)	1		
Initial Value (non land)		Φ.	4 000 007		
Initial Value (non-land)		\$	1,028,887		
Annual Straight line Depreciation b	pased on			years	
		\$	20,578		
Cumulative Depreciation over plan	nning period of		20	years	
		\$	411,555	<u>-</u>	
Assume salvage value = net depre	ciated value = Initial Va	alue - A		ciation	
Initial Value		\$	1,028,887	51000011	
Accumulated Depreciation		\$	<u>-</u> <u>-</u>		
			(411,555)		
Salvage Value		\$	617,332		at year 20
re-market when the control of the co				,	
	Salvage Value	\$	617,332		at year 20
Single p	ayment discount factor		0.4246882	"	
	Vorth of Salvage Value		262,174		
	Torus of Garrage Parage		202,114	-	
C. Wastowater Treatment Plant (0.45	MCD CDD				
C. Wastewater Treatment Plant (0.15	MGD SBR)				
					ital Cost
Cost for Conc. Tanks, Site Piping				\$ 2	2,131,722
Cost for equipment with 20 yr. life	and therefore no salvag	je valu	е	\$	1,897,037
(see breakdown for 20 and 40 yr. i	items following this sect	ion)	:		
		/			<u> </u>
Initial Value (non-land)		\$	2,131,722		
	L 1	Ψ			
Annual Straight line Depreciation I	pased on			years	:
		\$	53,293		
Cumulative Depreciation over plar	nning period of		20	years	
		\$	1,065,861		
Assume salvage value = net depre	eciated value = Initial Va	alue - /	Accumulated Depre	ciation	
Initial Value		\$	2,131,722		
Accumulated Depreciation		\$	(1,065,861)		······································
Salvage Value		\$			ot year 20
Calvage value		Ψ	1,065,861		at year 20
Control of the Contro	And the second				
	Salvage Value	\$	1,065,861		at year 20
and the second of the second o	ayment discount factor		0.4246882		
Present V	Vorth of Salvage Value		452,659		
			· · · · · · · · · · · · · · · · · · ·		
D. Land		\$	52,500		
		Ψ	32,300		
Cumulative Escalation factor over	r s rema				
COURTAIN AND TAINED A SVIICE IN TAINED TO A SVIICE OVER				years	
Carriadative Ecodilation ractor Over	planning period of			years	The second of th
			1.806111	years	
Future Value of Land at end of the			1.806111	years	
		\$	1.806111 20		
Future Value of Land at end of the		\$	1.806111		
		\$	1.806111 20		
Future Value of Land at end of the	e planning period of	\$	1.806111 20 94,821	years	
Future Value of Land at end of the Salvage Value = Future Value	e planning period of Salvage Value		1.806111 20 94,821 94,821 20		
Future Value of Land at end of the Salvage Value = Future Value Single p	e planning period of Salvage Value payment discount factor		1.806111 20 94,821 94,821 20 0.4246882	years	
Future Value of Land at end of the Salvage Value = Future Value	e planning period of Salvage Value payment discount factor		1.806111 20 94,821 94,821 20	years	
Future Value of Land at end of the Salvage Value = Future Value Single p	e planning period of Salvage Value payment discount factor		1.806111 20 94,821 94,821 20 0.4246882	years	
Future Value of Land at end of the Salvage Value = Future Value Single p	e planning period of Salvage Value payment discount factor		1.806111 20 94,821 94,821 20 0.4246882	years	
Future Value of Land at end of the Salvage Value = Future Value Single p Present Worth of Salvage Value o	e planning period of Salvage Value payment discount factor of Land		1.806111 20 94,821 94,821 20 0.4246882	years	
Future Value of Land at end of the Salvage Value = Future Value Single p	Salvage Value bayment discount factor of Land	\$	1.806111 20 94,821 94,821 <u>20</u> 0.4246882 40,269	years	
Future Value of Land at end of the Salvage Value = Future Value Single p Present Worth of Salvage Value of	Salvage Value sayment discount factor of Land Maintenance Costs Annual O&M Costs	\$	1.806111 20 94,821 94,821 20 0.4246882 40,269	years	
Future Value of Land at end of the Salvage Value = Future Value Single p Present Worth of Salvage Value of	Salvage Value sayment discount factor of Land Maintenance Costs Annual O&M Costs	\$	1.806111 20 94,821 94,821 <u>20</u> 0.4246882 40,269	years	

4 Total Present Worth	į.		
	•		
Present Worth of Initial Capital Cost	\$	15,545,390	
Present Worth of O&M Costs	\$	3,208,990	
Subtotal	\$	18,754,381	
Less Present Worth of Salvage Value		(3,187,122)	
TOTAL PRESENT WORTH	- \$	15,567,259	
		· · · · · · · · · · · · · · · · · · ·	

1 Sewage Collection and Conveyance System			\$ 10,939,816.8
2 Wastewater Treatment Plant (0.15 MGD SBR)			\$ 4,610,880.0
3 Spray Irrigation System			\$ 3,241,713.6
o opray migation byotom			Total \$ 18,792,410.4
peration and Maintenance Cost Summary Alternative 3	:	·	. σται Ψ 10,102,710.:
1 Total O&M Cost			\$ 279,450.0
·		:	270,100.0
resent Worth Analysis	-		
iven:	:	:	
lanning period for PW calculations		20 Years	
iscount rate			S EPA and PADEP
and Escalation Factor per annum		3.00%	DELY AND LADE
and Escalation Factor per annum		3.00 /0	
nitial Capital Cost			· · · · · · · · · · · · · · · · · · ·
Non-land	\$	17,944,910	·
Land	\$	847,500	
Less sunk cost	\$ \$	-	
Total	Ψ	18.792.410	
rota	Ψ	10,732,710	
nnual O&M costs	·		
Item 1	\$	279,450	
Item 2	\$	270,700	
Total	\$	279,450	
1 Compute Present worth factor for planning period and	discount ra	ate.	
Single payment present worth factor	discount ra	ate.	0.4246882
1 Compute Present worth factor for planning period and	discount ra	ate.	0.4246882 13.149983
Compute Present worth factor for planning period and Single payment present worth factor	discount ra	ate.	
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value	discount ra	ate.	
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor	discount ra	ate.	13.149983
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2)		ate.	13.149983 Capital Cost
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50) yr. life		13.149983 Capital Cost \$ 10,028,074
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal) yr. life Ivage value		13.149983 Capital Cost
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50) yr. life Ivage value		13.149983 Capital Cost \$ 10,028,074
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this seep contents.)	O yr. life Ivage value section)	-	13.149983 Capital Cost \$ 10,028,074
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solution in the second s) yr. life Ivage value	= 10,028,074	13.149983 Capital Cost \$ 10,028,074 \$ 904,243
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this salvage)	0 yr. life Ivage value section)	10,028,074 50	13.149983 Capital Cost \$ 10,028,074
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this salvalue (non-land) Annual Straight line Depreciation based on	O yr. life Ivage value section)	10,028,074 50 200,561	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solution in the second s	0 yr. life Ivage value section)	10,028,074 50 200,561 20	13.149983 Capital Cost \$ 10,028,074 \$ 904,243
Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor Salvage Value Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this salvature (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of	O yr. life Ivage value section) \$ \$	10,028,074 50 200,561 20 4,011,230	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solution in the present of the computation of the c	O yr. life Ivage value section) \$ \$ al Value - A	10,028,074 50 200,561 20 4,011,230 Accumulated Depr	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solution in the present of the computation of the c	O yr. life Ivage value section) \$ \$ al Value - A	10,028,074 50 200,561 20 4,011,230 Accumulated Depr 10,028,074	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solinitial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial Initial Value Accumulated Depreciation	O yr. life Ivage value section) \$ \$ al Value - A \$	10,028,074 50 200,561 20 4,011,230 Accumulated Depr 10,028,074 (4,011,230)	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years eciation
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solution in the present of the computation of the c	O yr. life Ivage value section) \$ \$ al Value - A	10,028,074 50 200,561 20 4,011,230 Accumulated Depr 10,028,074	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solinitial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial Initial Value Accumulated Depreciation Salvage Value	J yr. life Ivage value section) \$ \$ al Value - A \$ \$	10,028,074 50 200,561 20 4,011,230 Accumulated Depr 10,028,074 (4,011,230) 6,016,844	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years eciation at year 20
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solinitial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial Initial Value Accumulated Depreciation Salvage Value	J yr. life Ivage value section) \$ \$ al Value - A \$ \$	10,028,074 50 200,561 20 4,011,230 Accumulated Depr 10,028,074 (4,011,230) 6,016,844 6,016,844	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years eciation
1 Compute Present worth factor for planning period and Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 Cost for equipment with 20 yr. life and therefore no sal (see breakdown for 20 and 50 yr. items following this solinitial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial Initial Value Accumulated Depreciation Salvage Value	J yr. life Ivage value section) \$ \$ al Value - A \$ \$ \$	10,028,074 50 200,561 20 4,011,230 Accumulated Depr 10,028,074 (4,011,230) 6,016,844	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years eciation at year 20

B. Wastewater Treatment Plant (0.15 MGD SBR)				Ca	apital Co	st		
Cost for Conc. Tanks, Site Piping etc. with 40 yr. life					2,593,97			
Cost for equipment with 20 yr. life and therefore no salvage	ie val	ue			2,016,90			
(see breakdown for 20 and 40 yr. items following this sect		100	<u>:</u>	Ψ	2,010,0	<i>-</i> ,		
(See breakdown for 20 and 40 yr, items following this seek	aon		-					
Initial Value (non-iand)	\$	2 F	93,972			*		
Annual Straight line Depreciation based on	Ψ	ر,2						
Annual Straight line Depreciation based on	•		40	yea	18		<u></u>	
, , , , , , , , , , , , , , , , , , , ,	\$	-	64,849					
Cumulative Depreciation over planning period of	•		20	yea	ITS			
	\$		96,986					
Assume salvage value = net depreciated value = Initial Va				ecia	ition	<u> </u>		
Initial Value	\$		93,972					
Accumulated Depreciation	\$		96,986)					
Salvage Value	\$	1,2	96,986		at y	ear 20		
Salvage Value	\$	1,2	96,986		at y	ear 20		
Single payment discount factor		0.4	246882					•
Present Worth of Salvage Value		5	50,815					
	<u> </u>							
C. Spray Irrigation System								
C. Opray imgation dystem				_	apital Co	et		
Cost for Storage Pond, Spray Irr. Piping etc. with 40 yr. life				\$	1,782,4			
		luo	:	\$				
Cost for equipment with 20 yr. life and therefore no salva		liue		Ф	619,2	.00		
(see breakdown for 20 and 40 yr. items following this sec	non)							
			700 100					
Initial Value (non-land)	\$	1,4	782,426					
Annual Straight line Depreciation based on				yea	ars			
	\$		44,561					
Cumulative Depreciation over planning period of		- Andrews		yea	ars			
	œ		204 242					
	φ		391,213					
Assume salvage value = net depreciated value = Initial V	φ /alue	- Accumula	ited Depi	ecia	ation			
Initial Value	\$	- Accumula 1,	ited Depi 782,426		ation		. ,,	
Initial Value Accumulated Depreciation	\$ \$	- Accumula 1,1 (i	ited Depi 782,426 391,213)					
Initial Value	\$	- Accumula 1,1 (i	ited Depi 782,426			ear 20		
Initial Value Accumulated Depreciation	\$ \$	- Accumula 1,1 (i	ited Depi 782,426 391,213)			ear 20		
Initial Value Accumulated Depreciation Salvage Value Salvage Value	\$ \$ \$	- Accumula 1, ()	ited Depr 782,426 391,213) 391,213	•	at y	/ear 20 /ear 20		
Initial Value Accumulated Depreciation Salvage Value	\$ \$ \$	- Accumula 1, ()	ited Depi 782,426 391,213) 891,213	•	at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Salvage Value	\$ \$ \$	- Accumula 1, ((nted Depri 782,426 891,213) 891,213 891,213 4246882	•	at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value	\$ \$ \$	- Accumula 1, ((ited Depr 782,426 391,213) 391,213	•	at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value	\$ \$	- Accumula 1, (f	nted Depri 782,426 891,213) 891,213 891,213 4246882	•	at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Salvage Value Single payment discount factor	\$ \$ \$	- Accumula 1, ((nted Depri 782,426 891,213) 891,213 891,213 4246882	•	at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land	\$ \$	- Accumula 1, (f	sted Deprivated Deprivated Deprivated Deprivate 391,213) 391,213 891,213 4246882 378,488]	at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value	\$ \$	- Accumula 1, (1) (1) 0.	nted Deprivated Deprivated Deprivated Deprivate No. 1,213, 13, 142,46882, 142]	at y			
Initial Value Accumulated Depreciation Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of	\$ \$	- Accumula 1, (1) (1) 0.	nted Deprivated Depriv]	at y at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land	\$ \$	- Accumula 1, (1 0. 847,500	20 806111 202 de]	at y at y			
Initial Value Accumulated Depreciation Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of	\$ \$	- Accumula 1, (1 0. 847,500	nted Deprivated Depriv]	at y at y			
Initial Value Accumulated Depreciation Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of	\$ \$	- Accumula 1, (1 0. 847,500	20 806111 202 de]	at y at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value	\$ \$ \$	- Accumula 1, (1) 0. 847,500	20 .806111 .782,426 .891,213 .891,213 .891,213 .891,213 .246882 .378,488] ye	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value Salvage Value	\$ \$ \$	- Accumula 1, (1 0. 847,500	20 .806111 .20 .80679	ye. ye.	at y at y			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value Salvage Value Salvage Value Single payment discount factor	\$ \$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679 0.	20 .806111 .20 .82,426 .891,213 .891,213 .891,213 .8246882 .20 .806111 .20 .530,679	ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value Salvage Value	\$ \$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679 0.	20 .806111 .20 .80679	ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value Salvage Value Single payment discount factor	\$ \$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679 0.	20 .806111 .20 .82,426 .891,213 .891,213 .891,213 .8246882 .20 .806111 .20 .530,679	ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value Salvage Value Single payment discount factor	\$ \$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679 0.	20 .806111 .20 .82,426 .891,213 .891,213 .891,213 .8246882 .20 .806111 .20 .530,679	ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor Present Worth of Salvage Value of Land	\$ \$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679 0.	20 .806111 .20 .82,426 .891,213 .891,213 .891,213 .8246882 .20 .806111 .20 .530,679	ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor Present Worth of Salvage Value of Land	\$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679 0.	20 891,213 891,213 891,213 891,213 891,213 4246882 378,488 20 .806111 20 530,679 4246882 650,061	ye. ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor Present Worth of Salvage Value of Land 3 Present Worth of Operations and Maintenance Costs Annual O&M Costs	\$ \$ \$	- Accumula 1, (1 0. 847,500 1 1,530,679	20,806111 20,4246882 379,450	ye.	at y at y ars			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor Present Worth of Salvage Value of Land	\$ \$ \$	- Accumula 1, (1 0. 847,500 1,530,679 0.	20 891,213 891,213 891,213 891,213 891,213 4246882 378,488 20 .806111 20 530,679 4246882 650,061	ye.	at y at y ars			

4 Total Present Worth			
	:	:	
Present Worth of Initial Capital Cost	\$	18,792,410	
Present Worth of O&M Costs	\$	3,674,763	
Subtotal	\$	22,467,173	
Less Present Worth of Salvage Value	:	(4,134,647)	:
TOTAL PRESENT WORTH	\$	18,332,526	:
:	:		:

Capital Cost Estimate Summary - Alternative No. 4						
1 Sewage Collection and Conveyance System				\$		9,816.80
2 Wastewater Treatment Plant (0.15 MGD Extended Aeration	1)			\$	·····	3,640.00
3 Spray Irrigation System				\$		2,588.00
Operation and Maintenance Cost Summary Alternative 4		<u> </u>	Total	\$	19,36	1,044.8
1 Total O&M Cost		1				
1 Total Odivi Cost				\$	28	8,650.00
Present Worth Analysis						
N						
Siven:						
Planning period for PW calculations Discount rate		20 Years				
and Escalation Factor per annum		375%∶as per U	S EPA ar	nd PADE	Р	
and Escalation Factor per annum		3.00%				
nitial Capital Cost						
		10 122 E4E				· · · · · · ·
	\$ \$	18,133,545 1,227,500				
and the control of th	ρ 3	1,227,500				
	B	19,361,045				
	Ψ	19,501,040				
Annual O&M costs						
Item 1	\$	288,650				
Item 2	\$	-				
Total	\$	288,650				
Analysis:						
1 Compute Present worth factor for planning period and disco	ount rate	€.				
Single payment present worth factor				46882		
Annual payment present worth factor			13.14	9983		
2 Salvage Value						
Z dalvage value						
A. Sewage Collection System (Study Areas 1 and 2)						
		-	Capital	Cost		
Cost for Collection/Conveyance System Piping with 50 yr. I	ife	•	\$ 10,166			
Cost for equipment with 20 yr. life and therefore no salvage	value			6,143		
(see breakdown for 20 and 50 yr. items following this section	חכ)					
		•				
Initial Value (non-land)	\$	10,166,174				
Annual Straight line Depreciation based on		50	years			**
•	\$	203,323				
		20	years			
Cumulative Depreciation over planning period of					• • • • •	
	\$	4,066,470				
Assume salvage value = net depreciated value = Initial Val	\$ lue - Acc	umulated Depr	eciation			
Assume salvage value = net depreciated value = Initial Val Initial Value	\$	cumulated Depr 10,166,174				
Assume salvage value = net depreciated value = Initial Val Initial Value Accumulated Depreciation	\$ \$	umulated Depr 10,166,174 (4,066,470)				
Assume salvage value = net depreciated value = Initial Val Initial Value Accumulated Depreciation	\$	cumulated Depr 10,166,174		at year 2	0	
Assume salvage value = net depreciated value = Initial Val Initial Value Accumulated Depreciation Salvage Value	\$ \$	cumulated Depr 10,166,174 (4,066,470) 6,099,704		at year 2	0	
Assume salvage value = net depreciated value = Initial Val Initial Value Accumulated Depreciation Salvage Value	\$ \$	umulated Depr 10,166,174 (4,066,470) 6,099,704 6,099,704		at year 2 at year 2		
Assume salvage value = net depreciated value = Initial Val Initial Value Accumulated Depreciation Salvage Value	\$ \$	cumulated Depr 10,166,174 (4,066,470) 6,099,704				

P. Mostawater Treatment Plant (0.45 MOD F. L. J. J. A. J.			
B. Wastewater Treatment Plant (0.15 MGD Extended Aeration	n)		011-10
Control Collection (Communication Control Division (Control Division Control Division Contr		<u> </u>	Capital Cost
Cost for Collection/Conveyance System Piping with 40 yr.			\$ 2,505,892
Cost for equipment with 20 yr. life and therefore no salvag		e :	\$ 1,192,747
(see breakdown for 20 and 40 yr. items following this secti	оп)		
Initial Value (non-land)	\$	2 505 902	
Annual Straight line Depreciation based on	Ψ	2,505,892	
7 timaat Ottalgrit line Depreciation based on	\$		years
Cumulative Depreciation over planning period of	Ψ	62,647	
Outsidiative Depreciation over planning period of	\$	1,252,946	years
Assume salvage value = net depreciated value = Initial Va		1,252,940	
Initial Value			eciation
Accumulated Depreciation	\$	2,505,892	
Salvage Value	\$ \$	(1,252,946)	·
Salvage value	Ф	1,252,946	at year 20
Salvage Value	Φ.	1,252,946	at year 20
Single payment discount factor	Ψ	0.4246882	at year 20
Present Worth of Salvage Value		532,111	p = 1
Tresent World of Salvage Value		332,111	
C. Spray Irrigation System	٠		
O. Opray inigation system			Carital Carl
Cost for Collection/Conveyance System Piping with 40 yr.	lifo		Capital Cost
Cost for equipment with 20 yr. life and therefore no salvag	nie o volue		\$ 2,471,550
(see breakdown for 20 and 40 yr. items following this secti		E :	\$ 851,037
(See breakdown for 20 and 40 yr. items following this secti	ion)		
Initial Value (non-land)	\$	2,471,550	
Annual Straight line Depreciation based on	Ψ		vears
The state of the s	\$	61,789	years
Cumulative Depreciation over planning period of			years
panou or	\$	1,235,775	years
Assume salvage value = net depreciated value = Initial Va	T		eciation
Initial Value	\$	2,471,550	CCIACION
Accumulated Depreciation	\$	(1,235,775)	
Salvage Value	\$	1,235,775	at year 20
	. <u>*</u>	1,200,110	at year 20
Salvage Value	\$	1,235,775	at year 20
Single payment discount factor		0.4246882	
Present Worth of Salvage Value		524,819	<u></u>
	***	021,010	
D. Land	\$ 1.	227,500	
	1.22		
Cumulative Escalation factor over planning period of		20	years
The state of the s		1.806111	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Future Value of Land at end of the planning period of			years
	\$	2,217,002	<u> </u>
Salvage Value = Future Value	₹		
	\$ 2	217,002 20	vears
Salvane Value		Z-11,00Z ZU	years
Salvage Value	T -	ብ ለኃላይያውን	
Single payment discount factor		0.4246882	
		0.4246882 941,534	

Annual O&M	Costs \$	288,650	
Annual payment present worth factor		13.149983	
Present Worth of O&M Costs	\$	3,795,743	
4 Total Present Worth	:		
Present Worth of Initial Capital Cost	\$	19,361,045	
Present Worth of O&M Costs	\$	3,795,743	
Subtotal	\$	23,156,787	
Less Present Worth of Salvage Value	:	(4,588,938)	
TOTAL PRESENT WORTH	\$	18,567,850	

1 Sewage Collection and Conveyance System - Study Area	No. 1 and	12		\$ 10,939,816.
2 Subsurface Wastewater Disposal - Study Area No. 1	INO. I dill	<u> </u>		
3 Subsurface Wastewater Disposal - Study Area No. 2				<u> </u>
5 Subsurface Wastewater Disposal - Study Area No. 2		<u> </u>		\$ 8,197,920.
			Total	\$ 23,122,216.
peration and Maintenance Cost Summary Alternative 5				
1 Total O&M Cost for Study Areas 1 and 2				\$ 265,650.
<u> </u>				
		· ·		
esent Worth Analysis				
		<u> </u>		
ven:			·	
anning period for PW calculations		20 Years		
scount rate		4.375% as per U	S EPA and PAD	EP
nd Escalation Factor per annum		3.00%		
tial Capital Cost	1.	<u> </u>		
Non-land	\$	20,984,717		
Land	\$	2,137,500		
Less sunk cost				
Total	\$	23,122,217		
nnual O&M costs				
Item 1	\$	265,650		
Item 2		•		
Total	\$	265,650		
1 Compute Present worth factor for planning period and dis	count rate	5		
Compute Present worth factor for planning period and dis Single payment present worth factor	count rate	∋	0.4246882	
Compute Present worth factor for planning period and dis Single payment present worth factor Annual payment present worth factor	count rate	9. -	0.4246882 13.149983	
Single payment present worth factor Annual payment present worth factor	count rate	3		
Single payment present worth factor	count rate	3. ·		
Single payment present worth factor Annual payment present worth factor 2 Salvage Value	count rate	3.		
Single payment present worth factor Annual payment present worth factor	count rate	3	13.149983	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2)		3.	13.149983 Capital Cost	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr	. life	3 · · · · · · · · · · · · · · · · · ·	13.149983 Capital Cost \$ 10,028,074	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvage	. life ge value	3 · · · · · · · · · · · · · · · · · ·	13.149983 Capital Cost	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr	. life ge value	3. ·	13.149983 Capital Cost \$ 10,028,074	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec	. life ge value tion)		13.149983 Capital Cost \$ 10,028,074	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this section	. life ge value	10,028,074	13.149983 Capital Cost \$ 10,028,074	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec	. life ge value tion)	10,028,074 50	13.149983 Capital Cost \$ 10,028,074	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec Initial Value (non-land) Annual Straight line Depreciation based on	. life ge value tion)	10,028,074 50 200,561	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this section	. life ge value tion)	10,028,074 50 200,561	13.149983 Capital Cost \$ 10,028,074 \$ 904,243	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of	. life ge value tion) \$	10,028,074 50 200,561 20 4,011,230	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec Initial Value (non-land) Annual Straight line Depreciation based on	. life ge value tion) \$	10,028,074 50 200,561 20 4,011,230	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of	. life ge value tion) \$	10,028,074 50 200,561 20 4,011,230 cumulated Depre	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value	. life ge value tion) \$	10,028,074 50 200,561 20 4,011,230 cumulated Depre 10,028,074	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sect Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation	. life ge value tion) \$	10,028,074 50 200,561 20 4,011,230 cumulated Depre 10,028,074 (4,011,230)	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years ciation	20
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sec Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value	life ge value tion) \$ \$ \$ alue - Acc \$ \$	10,028,074 50 200,561 20 4,011,230 cumulated Depre 10,028,074	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years	20
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sect Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation Salvage Value	life ge value tion) \$ \$ \$ alue - Acc \$ \$	10,028,074 50 200,561 20 4,011,230 cumulated Depre- 10,028,074 (4,011,230) 6,016,844	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years ciation	
Single payment present worth factor Annual payment present worth factor 2 Salvage Value A. Sewage Collection System (Study Areas 1 and 2) Cost for Collection/Conveyance System Piping with 50 yr Cost for equipment with 20 yr. life and therefore no salvag (see breakdown for 20 and 50 yr. items following this sect Initial Value (non-land) Annual Straight line Depreciation based on Cumulative Depreciation over planning period of Assume salvage value = net depreciated value = Initial V Initial Value Accumulated Depreciation	life ge value tion) \$ \$ \$ alue - Acc \$ \$	10,028,074 50 200,561 20 4,011,230 cumulated Depre 10,028,074 (4,011,230)	13.149983 Capital Cost \$ 10,028,074 \$ 904,243 years years ciation	

B. Wastewater Treatment Plant (0.15 MGD SBR)	ļ				
	-		Capital Cost		
Cost for Collection/Conveyance System Piping with 40 yr. life			\$ 2,464,837		
Cost for equipment with 20 yr. life and therefore no salvage value		ie	\$ 1,519,642		
(see breakdown for 20 and 40 yr. items following this se	ction)				
	1			1	
Initial Value (non-land)	\$	2,464,837		;	
Annual Straight line Depreciation based on	· · ·		ears	:	
Transact Cadigite into Depiction Dated on	\$	61,621	Cais	:	
Cumulative Depreciation over planning period of	Ψ				
Odmulative Depreciation over planning period of	: 🚓		ears		
Accompany to the second	\$	1,232,419	i		
Assume salvage value = net depreciated value = Initial			iation		
Initial Value	\$	2,464,837			
Accumulated Depreciation	\$	(1,232,419)		:	
Salvage Value	\$	1,232,419	at year	20	
Salvage Value		1,232,419	at year	20	
Single payment discount facto	r	0.4246882			
Present Worth of Salvage Value	e	523,394			
	. <u>I</u>	,			
C. Subsurface Wastewater Disposal - Study Areas 1 and 2					
O. Cubsurface Wastewater Disposal - Study Areas 1 and 2	·		0-3-1-0-1		
Coot for Control Plda Distribution Division at with 40 and	156		Capital Cost		
Cost for Control Bldg, Distribution Piping etc. with 40 yr.			\$ 4,508,640		
Cost for equipment with 20 yr. life and therefore no salv		ue	\$ 1,559,279		
(see breakdown for 20 and 40 yr. items following this se	ection)			·	
Initial Value (non-land)	\$	4,508,640			
Annual Straight line Depreciation based on		40 y	/ears		
	\$	112,716			
Cumulative Depreciation over planning period of		20 y	/ears		
11/ANIAWA-1	*				
	\$	2,254,320			
Assume salvage value = net depreciated value = Initial	\$ Value -	2,254,320 Accumulated Depred	iation		
Assume salvage value = net depreciated value = Initial Initial Value	≯ Value - \$	Accumulated Deprec	iation		
Initial Value	\$	Accumulated Depred 4,508,640	iation		
Initial Value Accumulated Depreciation	Value - \$ \$	Accumulated Depred 4,508,640 (2,254,320)		20	
Initial Value	\$	Accumulated Depred 4,508,640	iation at year	20	
Initial Value Accumulated Depreciation Salvage Value	\$ \$ \$	Accumulated Deprec 4,508,640 (2,254,320) 2,254,320	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value	\$ \$ \$ e \$	Accumulated Deprec 4,508,640 (2,254,320) 2,254,320 2,254,320			
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor	\$ \$ \$ e \$	Accumulated Depred 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value	\$ \$ \$ e \$	Accumulated Deprec 4,508,640 (2,254,320) 2,254,320 2,254,320	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value	\$ \$ \$ e \$	Accumulated Depred 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor	\$ \$ \$ e \$	Accumulated Depred 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value	\$ \$ \$ e \$	Accumulated Deprec 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land	\$ \$ \$ e \$	Accumulated Depred 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383	at year at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value	\$ \$ \$ e \$	Accumulated Depred 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500	at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of	\$ \$ \$ e \$	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111	at year at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land	\$ \$ \$ e \$	Accumulated Depred 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500	at year at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of	\$ \$ \$ e \$	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111	at year at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of	\$ \$ \$ e \$	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 1	at year at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value	\$ \$ \$ c	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value	\$ \$ \$ or e \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 3,860,563 20	at year at year		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor	\$ \$ \$ or e \$ or	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value	\$ \$ \$ or e \$ or	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 3,860,563 20	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor	\$ \$ \$ or e \$ or	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value of Land	\$ \$ \$ or e \$ or	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Single payment discount factor	\$ \$ \$ or e \$ or	Accumulated Deprece 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Salvage Value Salvage Value Salvage Value Salvage Value Present Worth of Salvage Value of Land Present Worth of Operations and Maintenance Costs	\$ \$ \$ ce \$ cor	Accumulated Deprecedured 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882 1,639,536	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value	\$ \$ \$ ce \$ cor	Accumulated Deprecedures 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882 1,639,536 265,650	at year at year years		
Initial Value Accumulated Depreciation Salvage Value Salvage Value Salvage Value Single payment discount factor Present Worth of Salvage Value D. Land Cumulative Escalation factor over planning period of Future Value of Land at end of the planning period of Salvage Value = Future Value Salvage Value Salvage Value Salvage Value Salvage Value Present Worth of Salvage Value of Land 3 Present Worth of Operations and Maintenance Costs	\$ \$ \$ ce \$ cor	Accumulated Deprecedured 4,508,640 (2,254,320) 2,254,320 2,254,320 0.4246882 957,383 2,137,500 20 1.806111 20 3,860,563 20 0.4246882 1,639,536	at year at year years		

4 Total Present Worth			
Present Worth of Initial Capital Cost	\$	23,122,217	
Present Worth of O&M Costs	\$	3,493,293	
Subtotal	\$	26,615,510	
Less Present Worth of Salvage Value	;	(5,675,595)	
TOTAL PRESENT WORTH	\$	20,939,914	

Salvage Value Summary				
ltem	Item Cost (1)	20 Year Life	40 Year Life	50 Year Life
	item Cost (1)	Costs (2)	Costs (3)	Costs (4)
Alternative 1: Connection to Plains				
1 Sewage Collection System (Study Areas 1 and 2)	\$10,398,019	\$853,682	-	\$9,544,337
2 State Route 115 Corridor Sewage Collection System	\$1,066,111	\$37,224	-	\$1,028,887
3 Sewage Conveyance System to Plains	\$988,416	\$29,376	-	\$959,040
4 Equalization Tank/Pump Station Construction Cost Estimate	\$831,300	\$151,134	\$680,166	-
5 Connection Fee to Plains	\$210,000	-	-	-
Alternative 2: 150,000 GPD SBR WWTP with discharge to				
Susquehanna River				
1 Sewage Collection System (Study Areas 1 and 2)	\$10,398,019	\$853,682	-	\$9,544,337
2 State Route 115 Corridor Sewage Collection System	\$1,066,111	\$37,224	-	\$1,028,887
3 Wastewater Treatment Plant (0.15 MGD SBR)	\$4,028,760	\$1,897,037	\$2,131,723	-
Alternative 3: 150,000 GPD SBR WWTP w/ discharge to Bear				
Creek and Seasonal Spray Irrigation				4.0.000.00.
1 Sewage Collection System (Study Areas 1 and 2)	\$10,932,317	\$904,243	-	\$10,028,074
2 Wastewater Treatment Plant (0.15 MGD SBR)	\$4,610,880	\$2,016,907	\$2,593,973	-
3 Spray Irrigation System	\$2,401,714	\$619,287	\$1,782,427	-
Alternative 4: 150,000 GPD Extended Air WWTP with Spray				
Irrigation and year round storage capacity 1 Sewage Collection System (Study Areas 1 and 2)	\$11,112,317	\$946,143		\$10,166,174
2 Wastewater Treatment Plant (0.15 MGD Extended Aeration)	\$3,698,640	\$1,192,748	\$2,505,892	_
3 Spray Irrigation System	\$3,322,588	\$851,037	\$2,471,551	₩
Alternative 5: Two (2) Community Sand Mounds for each				
Study Area				
1 Sewage Collection and Conveyance System - Study Area No. 1	¢10 032 317	\$904,243	_	\$10,028,074
and 2	\$10,932,317	<u> </u>	-	Ψ10,020,074
2 Wastewater Treatment Plant (0.15 MGD SBR)	\$3,984,480	\$1,519,642	\$2,464,838	-
3 Subsurface Wastewater Disposal - Study Areas 1 and 2	\$6,067,920	\$1,559,279	\$4,508,641	

Notes:

- (1) Item Costs include Construction Costs, Engineering/Administrative Costs and Contingencies, but does does not include Land Costs
- (2) 20 Year life includes equipment, electrical, and mechanical item costs
- (3) 40 Year life includes structures, buildings and site work items
- (4) 50 Year life includes collection/conveyance system piping and bituminous roadway restoration
- (5) Contingency, Non-Construction Costs are split between 20 year, 40 year, and 50 year life costs based on percentage split of Construction Sub-total costs