CITY OF PIKEVILLE
118 College Street
Pikeville, Kentucky 41501
(606) 437-5100
Fax Number (606) 437-5106

Frank Justice, II
Mayor

Donovan Blackburn
City Manager

June 20, 2012

Anshu Singh
Facilities Construction Branch
Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601

Re: **City of Pikeville Facilities Plan** ***12-410***
Pikeville, Pike County, Kentucky

Dear Mrs. Singh,

This correspondence is in regards to the Division of Water / Pikeville coordination meeting held on 1/25/12 at Pikeville City Hall. As per DOW request, the City has prepared a draft wastewater facilities plan. The plan is written to update and clarify planning area boundaries, eliminate conflicting elements from prior documents and outline the City's wastewater growth plans for the 0-20 year planning period. This letter constitutes the City's acceptance of the facility plan as prepared by Summit Engineering, dated June 2012.

It is noted that the required public meeting has not yet been completed as the City recently decided on a treatment alternative for the proposed wastewater treatment plant expansion. A public meeting is planned in the coming months to present the plan and obtain public comment. Public meeting documentation will be transmitted to DOW at that time.

We are pleased to submit the following for the Division of Water's review and approval:

1. Two (2) Copies of the Draft Pikeville Facilities Plan in 3 ring binder
2. One (1) Copy of PDF version of the plan on CD

Please direct questions or comments regarding this submittal to Brett Fisher of Summit Engineering at 859-264-9860 ext 312.

Sincerely,

Frank Justice, II
Mayor – City of Pikeville

Greg May
Chief Operating Officer (UMG)
(Concurrence)

cc: Greg May (UMG)
Brett Fisher (Summit Engineering)
File

CITY OF PIKEVILLE

WASTEWATER

FACILITIES PLAN

PIKEVILLE, KENTUCKY

12-410 6754.206

Prepared for:
City of Pikeville, Kentucky
243 Main St.
Pikeville, KY 41501

June 2012 (original submittal)

Revised May 24, 2013 for D.O.W.

Prepared by:
Summit Engineering Inc.
131 Summit Drive
Pikeville, KY 41501

Contact:
Brett Fisher, P.E.
859-264-9860

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SECTION 1
REGIONAL FACILITIES PLAN SUMMARY

1.01 GENERAL

1.01.1 INTRODUCTION AND BACKGROUND

The original City of Pikeville's wastewater facilities plan was prepared in 1978 and updated in 1989. No formal plan update has been completed since the 1989 update. However, in August 2006 a letter style agreement was executed between Prestonsburg Utilities, Southern Water and Sewer District, Mountain Water District (MWD), and the City of Pikeville. Each entity took over a portion of the old Sandy Valley Water District after its dissolution. The letter style agreement was adopted by each entity to formalize the locations of their wastewater planning boundaries. The agreement was then approved by the DOW.

On January 25, 2012 a pre planning conference was held at Pikeville City Hall to discuss the need of a new wastewater facility plan for the City of Pikeville. Anshu Singh of the Kentucky Division of Water (DOW), City Officials, UMG Personnel, and Summit Engineering personnel were in attendance. In response to the meeting, the City of Pikeville has prepared a draft wastewater facilities plan.

This plan is intended to replace the existing 1978 facility plan, as well as the 1989 plan, update in their entirety and outline the City's wastewater collection, conveyance and treatment needs within the Planning Area for the next 20 years.

1.01.2 PURPOSE OF REPORT

The purpose of this facilities planning report is to determine the most economical, effective, environmentally sound, and implementable wastewater collection and treatment system for the Planning Area.

This Facilities Plan is prepared to:

a. Provide a facilities plan for the currently unplanned areas of the Pikeville Facilities Planning Area.

b. Incorporate the City's long range planning concepts for the Marion Branch Development and other small proposed developments within the Planning Area.

c. Provide a complete, new, Facilities Plan for the City of Pikeville.

1.02 RECOMMENDED 0-2 YEAR PLAN

1.02.1 0-2 YEAR PROJECTS

a. Construct pressure sewer line extension projects to serve the previously unsewered areas of Foxcroft, Yorktown, Buckley's Creek, and Whayne Supply Hollow.

b. Expand and convert the existing 2.0 MGD Pikeville extended aeration WWTP into a 4.0 MGD membrane bioreactor system WWTP.

c. Construct a hybrid (gravity and pressure combination) sewer system to service the Phase 1 Marion Branch Development.

d. Complete various wastewater lift station improvements/rehabilitations for aging lift stations throughout the system.

1.02.2 FINANCIAL REQUIREMENTS FOR 0-2 YEAR PROJECTS

Project Cost:

0-2 Year Collection System:	$8,225,761
0-2 Year Treatment:	$24,182,610
0-2 Total Project	**$32,408,371**

Funding Plan:

Potential Sources of Funding for Phase 1 Sewer

AGENCY	GRANT / LOAN	AMOUNT
EPA (Special Project Assistance)	GRANT	$ 5,000,000.00
EDA	GRANT	$ 1,000,000.00
KIA-SRF	LOAN	$ 1,000,000.00
ARC	GRANT	$ 500,000.00
RD	GRANT	$ 5,822,511.31
RD	LOAN	$ 13,585,859.72
CDBG	GRANT	$ 2,000,000.00
COAL SEVERANCE	GRANT	$ 3,500,000.00
GRAND TOTAL		**$32,408,371.03**

Proposed Sewer Rates:

In City Customers: Flat rate of $7.96 per 1,000 gallons
Out of City Customers: Flat rate of $15.92 per 1,000 gallons

The sewer rates assume the following initial equivalent populations:

Existing Equivalent Population of Pikeville:	18,349 persons
New Equivalent Population Added by Projects:	1,626 persons
Total Equivalent Population:	**19,975 persons**

The rate for first 2,000 gallons (minimum bill) will be established during 0-2 year project design and implementation period.

Average Monthly Bills (based on "flat rate"):

In City	**Out of City**
2,000 Gallons = $15.92	2,000 Gallons = $31.83
4,000 Gallons = $31.83	4,000 Gallons = $63.66
6,000 Gallons = $47.75	6,000 Gallons = $95.49

1.03 PLANNING AGENCY COMMITMENTS

1.03.1 LEAD AGENCY

The City of Pikeville is the lead agency for this Facilities Plan. The following information has been provided to document the legal standing to implement this project:

1. Appendix F.
    a. A signed resolution from the City accepting/adopting the facilities plan.

1.04 SCHEDULE OF IMPLEMENTATION

1.04.1 0-20 YEAR PLANNING PERIOD

See Table 1-1 summarizing the anticipated implementation schedule for the facilities plan projects over the next 20 years.

TABLE 1-1
PIKEVILLE WASTEWATER FACILITIES PLAN
0-20 YEAR PLANNING PERIOD PROJECTS
PRELIMINARY PROJECTS IMPLEMENTATION SCHEDULE

			PLANNING PERIOD														
			Planning	0-2 Year		3-10 Year					11-20 Year						
Area #	Proposed Service Area	Planning Period	2013 - 2015	2016	2017	2018 - 2019	2020	2021	2022	2023	2024 - 2026	2027	2028	2029	2030	2031	2032
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	0-2 Year															
2	Expand Existing Pikeville WWTP	0-2 Year															
3	Marion Branch Development - Phase 1	0-2 Year															
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0-2 Year															
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	3-10 Year															
6	Marion Branch Development - Phase 2	3-10 Year															
7	Broad Bottom	3-10 Year															
8	Right Fork of Island Creek / Coon Branch / Kati Street	3-10 Year															
9	Deskins and Potter Development Sites / Coal Run Hill	3-10 Year															
10	Marion Branch Development - Phase 3	3-10 Year															
11	Left Fork of Island Creek / Road Fork	11-20 Year															
12	Boldman Bottom	11-20 Year															
13	Ratliff Creek	11-20 Year															
14	Stonecoal Road	11-20 Year															
15	Miscellaneous Sewer System Upgrades	11-20 Year															
16	Hurricane Creek - Phase I - Lower	11-20 Year															
17	Hurricane Creek - Phase 2 - Upper	11-20 Year															

Notes:

1. Each implementation bar includes all funding acquisition, design, permitting, bidding, and construction work items.

SECTION 2
STATEMENT OF PURPOSE AND NEED

2.01 STATEMENT OF PURPOSE AND NEED

2.01.1 NEED FOR THE PROJECT

The basis of need for this Facilities Plan is as follows:

A. To provide the residents and businesses of the Planning Area access to municipal wastewater collection and treatment through the construction of wastewater collection and treatment facility expansions.

B. To foster the economic growth of the community by eliminating the impediment to new construction posed by the lack of a public wastewater collection and treatment system in portions of the Planning Area.

C. To eliminate the existing package plants, septic tanks and straight pipe discharges that remain within the Planning Area.

D. To improve capacity at the existing Pikeville WWTP through the conversion of the existing extended aeration plant into a membrane bioreactor plant.

E. To improve the water quality of the Levisa Fork of the Big Sandy River and its tributaries by eliminating straight pipe discharges of raw sewage.

F. To accommodate the anticipated economic growth to be brought to the Planning Area by the proposed Marion Branch development as well as multiple smaller development sites throughout the Planning Area.

SECTION 3
PHYSICAL CHARACTERISTICS OF THE PLANNING AREA

3.01 PLANNING AREA

3.01.1 GENERAL

The Pikeville facilities Planning Area covers 61 square miles and is located in the western Pike County, Kentucky. **Exhibit 3-1** depicts the general location of the Planning Area in relation to metro areas within a 200 mile radius. The Planning Area includes the Levisa Fork Watershed and its tributaries from the Levisa Fork confluence with the Russell Fork at the southern end of the Planning Area to the Levisa Fork confluence with Hurricane Creek at the northen end of the Planning Area as depicted in **Exhibit 3-2**.

The Planning Area was sub-divided into sewer service areas based principally on watershed boundaries. The sub-divided project areas will be referred to as "contracts" or "service areas." The proposed sewer service areas and the anticipated planning period for their connection to the proposed public sewer system are presented in Table 3-1. The areas to be served are divided into three (3) distinct periods for connection to the treatment facility with planning period 1 occurring between 0-2 years from the approval of this plan, planning period 2 occurring between 3-10 years, and planning period 3 occurring between 11 and 20 years. An exhibit depicting the extents of the proposed service areas (contracts) by planning period is provided as **Exhibit 3-2A**.

Table 3-1
Planning Areas and Planning Periods Summary

Area #	Proposed Service Area	Planning Period
	Existing City of Pikeville Sewer Population	Existing
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	0-2 Year
2	Expand Existing Pikeville WWTP	0-2 Year
3	Marion Branch Development - Phase 1	0-2 Year
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0-2 Year
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	3-10 Year
6	Marion Branch Development - Phase 2	3-10 Year
7	Broad Bottom	3-10 Year
8	Right Fork of Island Creek / Coon Branch / Kati Street	3-10 Year
9	Deskins and Potter Development Sites / Coal Run Hill	3-10 Year
10	Marion Branch Development - Phase 3	3-10 Year
11	Left Fork of Island Creek / Road Fork	11-20 year
12	Boldman Bottom	11-20 year
13	Ratliff Creek	11-20 year
14	Stonecoal Road	11-20 year
15	Miscellaneous Sewer System Upgrades	11-20 year
16	Hurricane Creek - Phase I - Lower	11-20 Year
17	Hurricane Creek - Phase 2 - Upper	11-20 Year

3.02 LANDUSE AND WETLANDS

3.02.1 Land Use & Development - The local Planning and Zoning authority is the Pikeville/Pike County joint planning and zoning commission.

A 1" = 2 miles scale land use map is presented as **Exhibit 3-3**. Most of the area is best described as unmanaged hardwood forest. The relatively narrow valley floors are urbanized and should be described as rural residential. With the exception of small residential garden plots, there is essentially no agriculture in Pike County.

3.02.2 Wetlands - A wetlands map of the Planning Area is provided as **Exhibit 3-4**. The collector sewers and treatment system presented herein will be planned to avoid wetland areas. Any sewer system must cross streams. The appropriate stream crossing permits will be obtained when the collector sewers are designed. The construction plans will incorporate sediment control measures to protect aquatic resources.

3.02.3 Floodplains – **Exhibit 3-5** depicts a large scale overview of the 100 year floodplain extents.

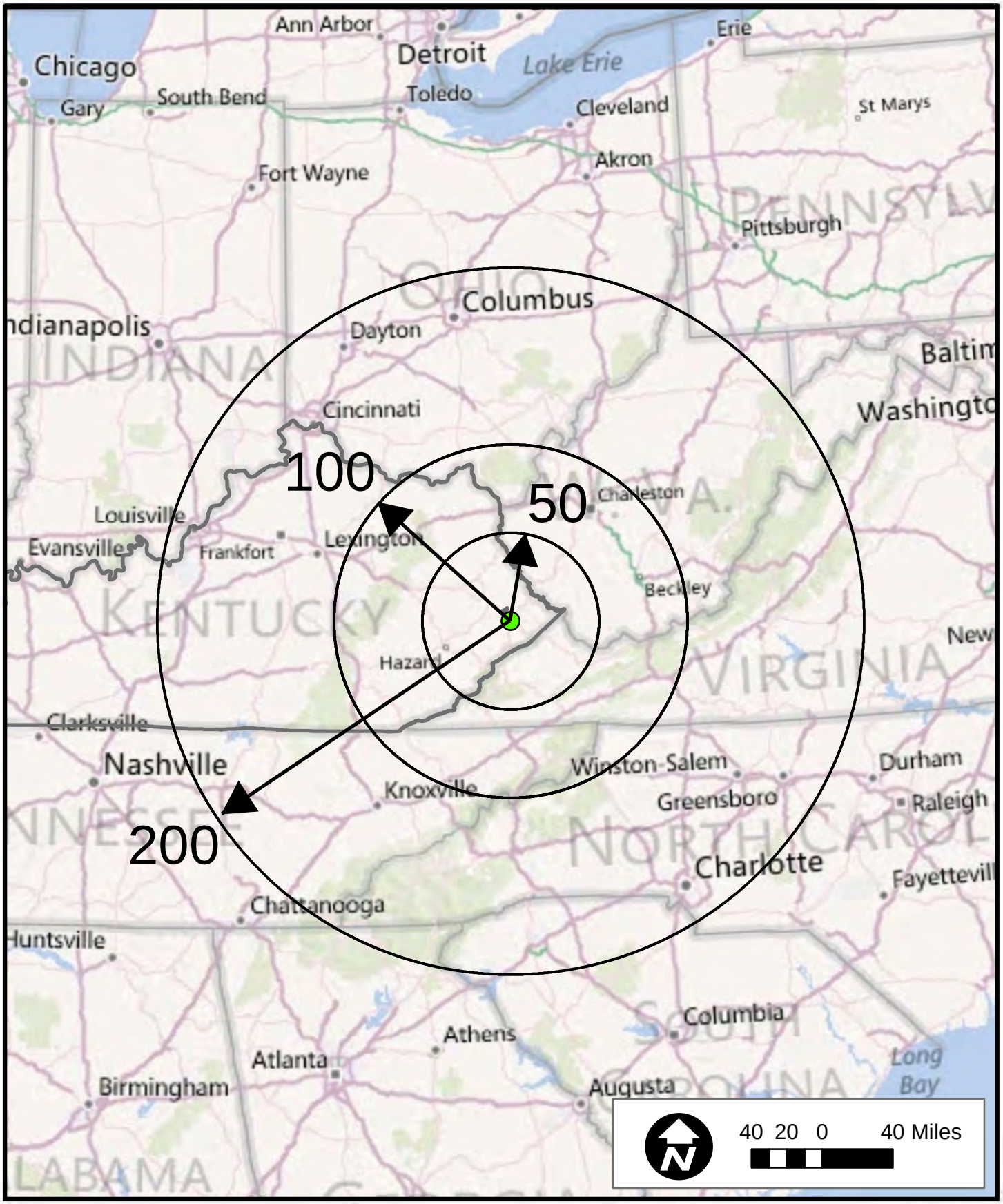
The proposed wastewater treatment plant expansion will not encroach on the regulatory floodway. All controls for pump stations will be located above the 100-year flood elevation.

3.03 NATURAL OR MAN MADE FEATURES

3.03.1 Pikeville (US23) Cut-Through Project - The Pikeville Flood Control Project was conceived, and lobbied for tirelessly, by Pikeville Mayor W. C. Hambley beginning in 1963. In 1970 the Appalachian Regional Commission (ARC) authorized, and funded, the Pikeville Open Cut Project. This project was designed to protect the City from the Standard Project Flood (SPF) and create land for development of the community. Although simple in concept, the 'Open Cut' project represents one of the greatest earthmoving projects in the Eastern United States. The Levisa Fork was routed around the City by 'open cutting' through a mountain. The US23 roadway and the existing railroad were then relocated to the 'open cut.' The north and south embankments of US23 on either side of the 'open cut' were designed such that they formed a levee to protect the City.

3.03.2 Principal Water Withdrawals and Discharges - The City of Pikeville operates a 6.0 MGD water treatment plant at the confluence of the Levisa Fork with Island Creek. This plant has a raw water intake on the Levisa Fork approximately 13.5 miles downstream from the Douglas WWTP discharge location. The plant and intake location is noted on **Exhibit 3-2**. Kentucky Division of Water regulations prohibit wastewater treatment plant discharges within 5 miles of a water intake location. Any proposed treatment works will be sited in compliance with the 5 mile policy.

A list of the locations of all existing regional and package treatment plants located within the Planning Area was obtained from the Environmental Protection Agency's online database for NPDES discharge permits. A map showing the approximate location of the package treatment plants was created from the information obtained. This map is presented as **Exhibit 6-1** in Section 6. See Section 6 for more information regarding the existing wastewater collection and treatment systems in the Planning Area.



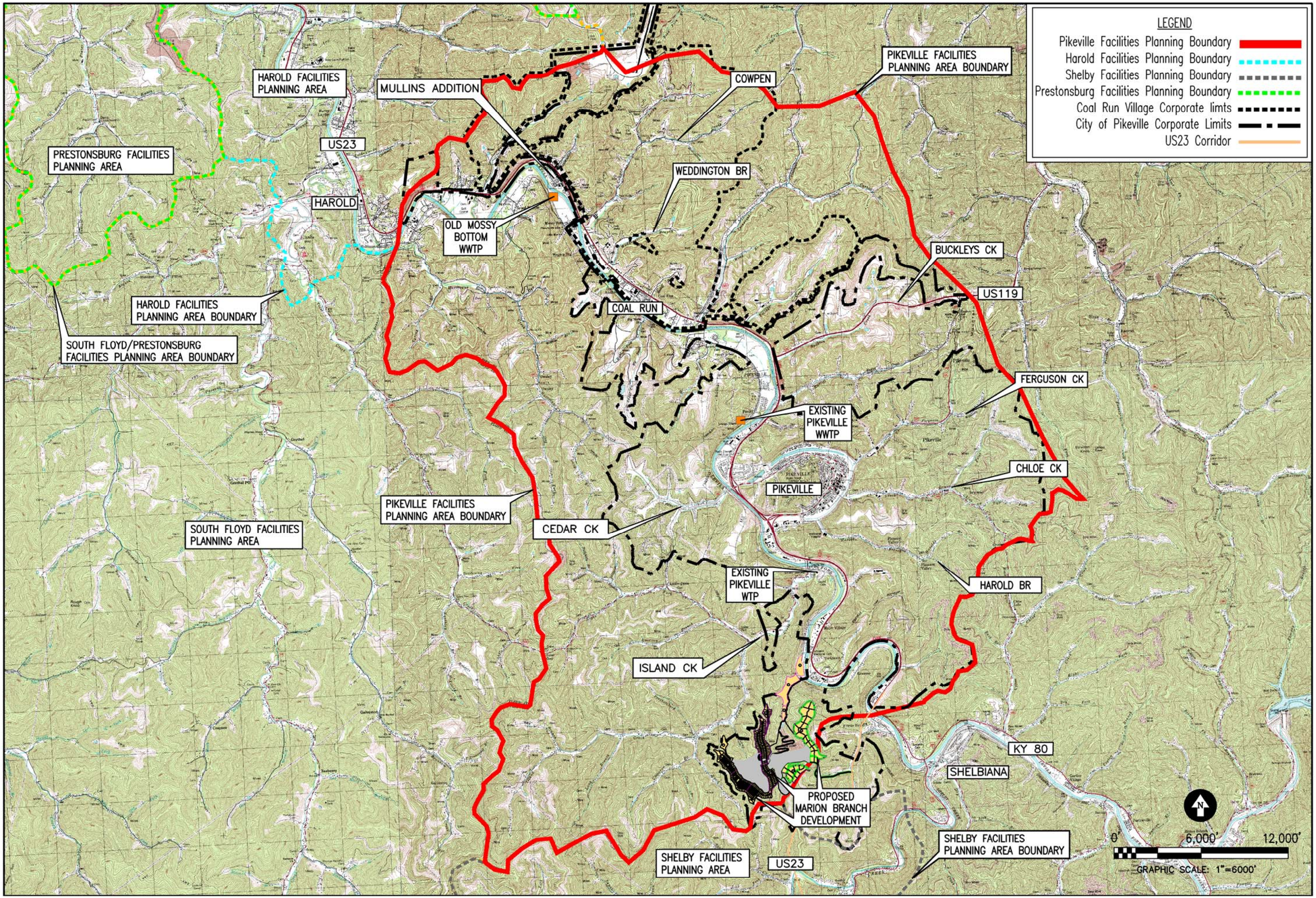
SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

City of Pikeville
118 College Street
Pikeville, Kentucky 41501

Pikeville Wastewater Facilities Map
General Location Map

DATE:	6/28/12
SCALE:	
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	3-1
OF:	



DATE	DESCRIPTION OF REVISION

SUMMIT ENGINEERING, INC.

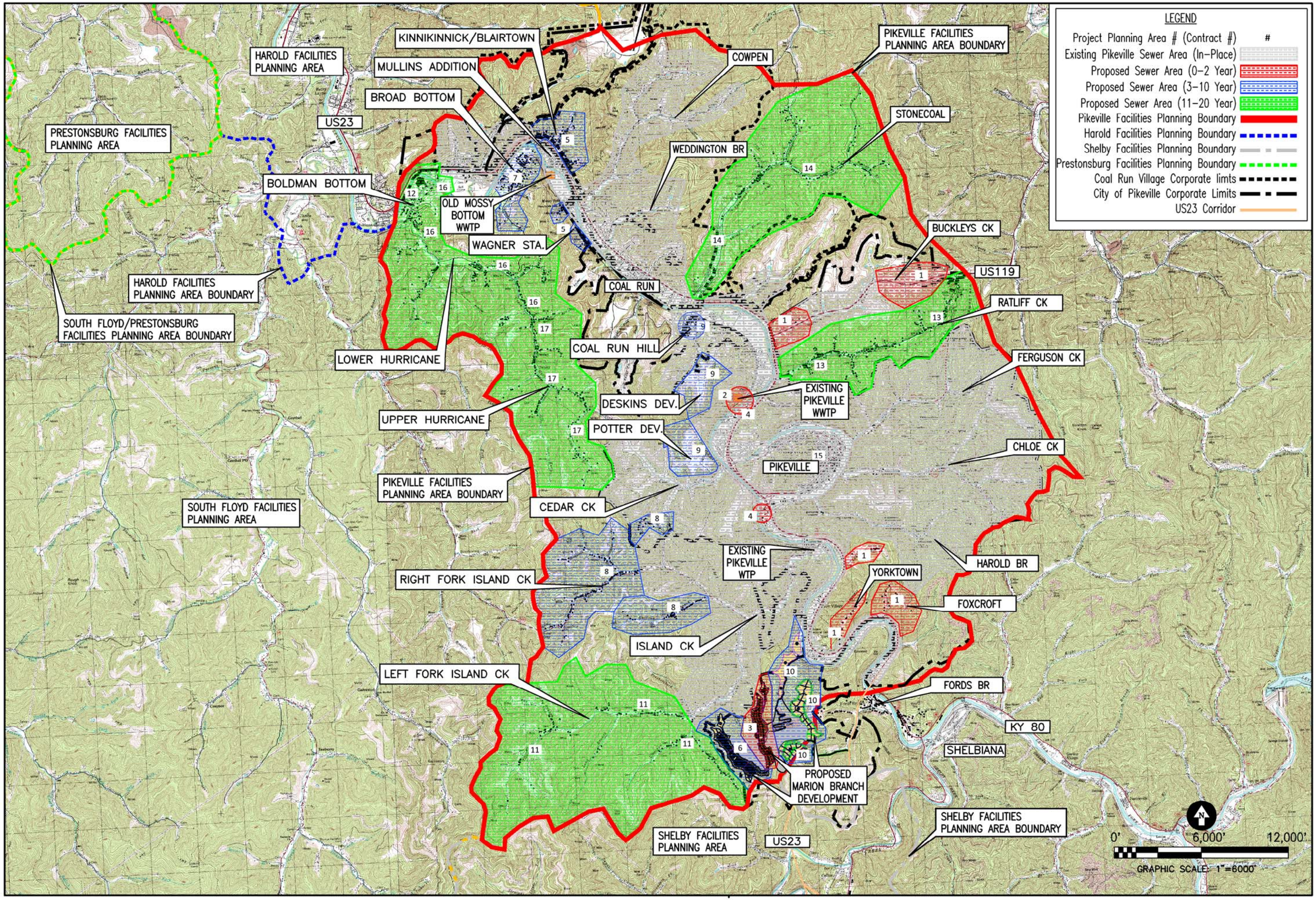
LEXINGTON, KY
LOUISVILLE, KY
HAZARD, KY
CHARLESTON, WV
HARLESTON, WV
GRUNDY, VA

City of Pikeville
118 College Street
Pikeville, KY 41501

Pikeville Wastewater Facilities Plan
Planning Area Map

DATE:	6/19/12
SCALE:	As Noted
DRAWN BY:	BF
CHECKED:	KH
PROJECT NO:	12-410

SHEET:
EX 3-2
OF:



DESCRIPTION OF REVISION

DATE

SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
LONDON, KY
CHARLESTON, WV
LOGAN, WV
ERWIN, VA

City of Pikeville
118 College Street
Pikeville, KY 41501

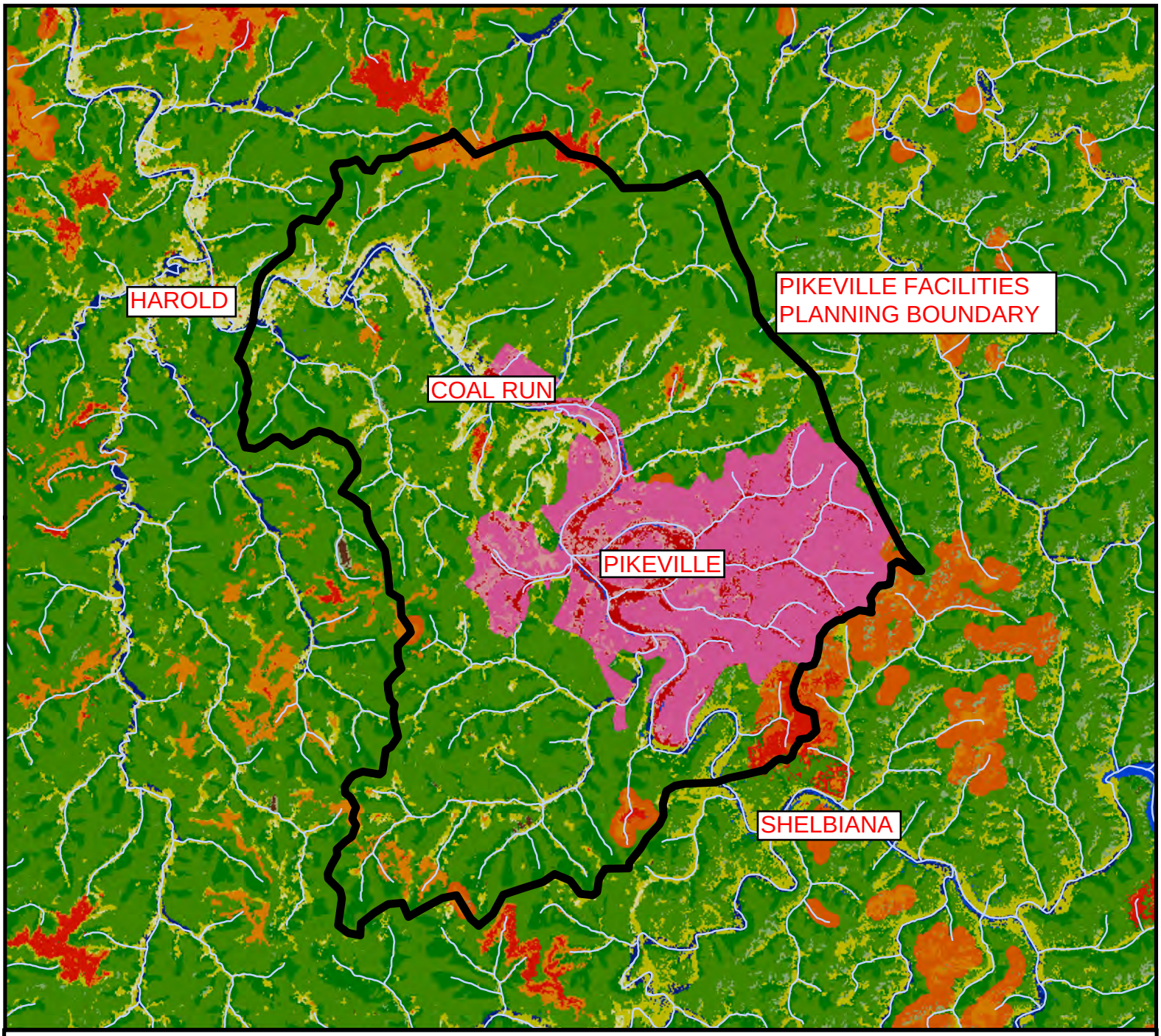
Pikeville Wastewater Facilities Plan
Planning Periods Designation Map

DATE:	6/19/12
SCALE:	As Noted
DRAWN BY:	BF
CHECKED:	KH
PROJECT NO:	12-410

SHEET:

EX 3-2A

OF:



Land Use/Land Cover

kygapveg

Name

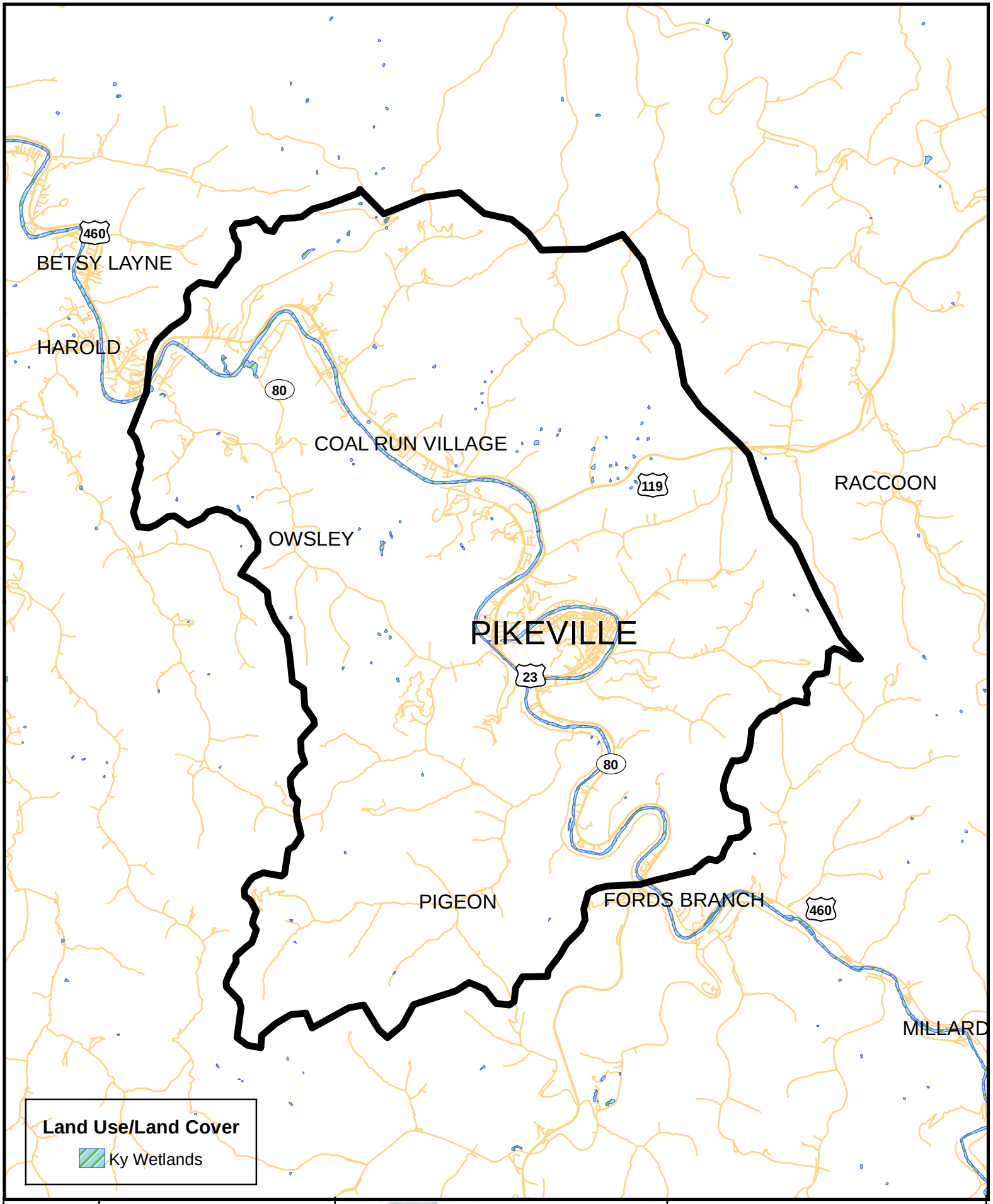
- agriculture/other
- bald cypress wetland
- black willow shrub wetland
- coniferous forest
- Cumberland highlands forest
- dry oak forest
- dry oak forest/woodland
- dry-mesic oak forest
- early successional deciduous forest
- emergent wetland
- floodplain forest
- hemlock(white pine)/deciduous forest
- maple/chinquapin oak forest
- mesic deciduous forest
- mesophytic deciduous forest
- mined bare ground
- mined coniferous
- mined deciduous
- mined herbaceous
- oak-pine forest
- oak/coniferous forest
- oak/deciduous bottomland
- oak/deciduous bottomland forest
- pasture/grassland
- pine forest
- planted deciduous forest
- planted deciduous forest
- planted pine forest
- red cedar forest
- red cedar/oak forest
- riparian forest
- shrub wetland
- urban forested
- urban high density
- urban other
- urban treed
- Virginia pine forest
- water

0 0.5 1 2 Miles

Approximate Scale in Miles

SUMMIT ENGINEERING INC.

EXHIBIT 3-3
Land Use in the Planning Area
Pikeville 201 Facilities Area



0 0.5 1 2 Miles

Approximate Scale in Miles

SUMMIT ENGINEERING INC.

EXHIBIT 3-4
Wetlands in the Planning Area
Pikeville 201 Facilities Area

Legend

S_BFE

Floodway

Special Flood Hazard Areas

FLOOD ZONE

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1 PCT ANNUAL CHANCE FLOOD HAZARD (NO BASE FLOOD ELEVATION DETERMINED)

1 PCT ANNUAL CHANCE FLOOD HAZARD (BASE FLOOD ELEVATION DETERMINED)

US 119
RATLIFF CREEK
TOWN BRANCH
PIKEVILLE
LEVISA FORK
FORDS BRANCH
US 460
RUSSELL FORK
US 23
STONECOAL
COWPEN
COAL RUN
LEVISA FORK
AIRPORT
MOSSY BOTTOM
HURRICANE CREEK
BOLDMAN
US 23

1,300 0 1,300 Feet

DESCRIPTION OF REVISION | DATE

SUMMIT ENGINEERING, INC.

EXINGTON, KY
ASHLAND, KY
HAZARD, KY
CHARLESTON, WV
LEBANON, VA
GRUNDY, VA

City of Pikeville
118 College Street
Pikeville, Kentucky 41501

Pikeville Wastewater Facilities Plan
100 Year Floodplain Overview Map

DATE: 6/28/12
SCALE:
DRAWN BY: BCK
CHECKED: BF
PROJECT NO: 12-410

SHEET: 3-5
OF:

SECTION 4
SOCIOECONOMIC CHARACTERISTICS OF THE PLANNING AREA

4.01 HISTORICAL, CURRENT AND PROJECTED POPULATIONS

4.01.1 HISTORICAL POPULATION

According to the Louisville Data Center, population studies show negative growth over the past 10 years. The total population of Pike County, Kentucky in the year 2000 was 68,736 persons and for the year 2010 the population was 65,024. The City of Pikeville was determined to have a population of 6,903 by the 2010 census and the City of Coal Run had a population of 577 by the 2000 census. However, due to reoccurring booms in the natural resource industry this facilities plan will assume no change in population over the next 20 years with the exception of the proposed Marion Branch development and other proposed developments in the Planning Area

4.01.2 CURRENT POPULATION

Year 0

According to 2010 census data for Pike County the current population per household is 2.4. Based on current flow average daily flow rates measured at the Pikeville WWTP, compared to the number of exiting City of Pikeville sewer customers, it was calculated that the effective equivalent population per household/business is 5.44. The large difference between the 2.4 factor and 5.44 factor can be attributed to flows contributed by large commercial/public entities as well as I&I infiltration into the sewer system. For the purposes of this report, 5.44 will be used to determine equivalent populations of the Planning Area. Table 4-1 below shows the equivalent population of each service area within the Planning Area for the design year 0. **Exhibit 4-1** depicts the location of the proposed service areas.

Table 4-1
Current Population (Year 0)

Area #	Proposed Service Area	Population Equivalent
	Existing City of Pikeville Sewer Population	18,349
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212
2	Expand Existing Pikeville WWTP	0
3	Marion Branch Development - Phase 1	0
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593
6	Marion Branch Development - Phase 2	0
7	Broad Bottom	653
8	Right Fork of Island Creek / Coon Branch / Kati Street	1,023
9	Deskins and Potter Development Sites / Coal Run Hill	631
10	Marion Branch Development - Phase 3	0
11	Left Fork of Island Creek / Road Fork	816
12	Boldman Bottom	413
13	Ratliff Creek	1,229
14	Stonecoal Road	1,034
15	Miscellaneous Sewer System Upgrades	0
16	Hurricane Creek - Phase I - Lower	1,311
17	Hurricane Creek - Phase 2 - Upper	1,012
	EXISTING EQUIVALENT POPULATION (2012) =	**27,276**

4.01.3 PROJECTED POPULATION

Year 20

Table 4-2 below shows the equivalent population of each service area within the Planning Area for the design year 20. Table 4-2 accounts for projected growth associated with the anticipated Marion Branch development and other proposed small developments within the planning area. See Table 4-3 for the anticipated equivalent population of each proposed development. **Exhibit 4-1** depicts the location of the proposed service areas.

Table 4-2
Projected Population (Year 20)

Area #	Proposed Service Area	Population Equivalent
	Existing City of Pikeville Sewer Population	18,349
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212
2	Expand Existing Pikeville WWTP	0
3	Marion Branch Development - Phase 1	1,414
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593
6	Marion Branch Development - Phase 2	1,197
7	Broad Bottom	653
8	Right Fork of Island Creek / Coon Branch / Kati Street	1,023
9	Deskins and Potter Development Sites / Coal Run Hill	631
10	Marion Branch Development - Phase 3	370
11	Left Fork of Island Creek / Road Fork	816
12	Boldman Bottom	413
13	Ratliff Creek	1,229
14	Stonecoal Road	1,034
15	Miscellaneous Sewer System Upgrades	0
16	Hurricane Creek - Phase I - Lower	1,311
17	Hurricane Creek - Phase 2 - Upper	1,012
	PROJECTED EQUIVALENT POPULATION (2032) =	**30,257**

4.02 CURRENT AND PROJECTED COMMERCIAL AND NONRESIDENTIAL USERS OF THE SYSTEM

A search of KPDES (NPDES) files for the Levisa Fork and its tributaries revealed that the Pikeville Planning Area currently has no significant existing industrial wastewater customers. Pikeville's large customers consist primarily of commercial shopping, restaurant, and office complexes and schools. It is anticipated that industrial and/or mixed use developments will be located at Marion Branch and residential developments will be located at the Potter and Deskins development sites.

The following Table 4-3 represents the anticipated flows created by the proposed and existing commercial/large water users as well as proposed new developments within the Planning Area.

Table 4-3
Current and Proposed Large Flow Contributors (0-20 Year Period)

Corresponding Planning Area # (Project Phase #)	Proposed Service Area	Population Equivalent
Existing System	Pikeville Medical Hospital	824
Existing System	Pike County Jail	369
Existing System	Landmark Inn	111
Existing System	East Kentucky Exposition Center	102
Existing System	Super 8 Lodging	73
Existing System	Applebees	73
Existing System	Walmart	57
Existing System	Hampton Inn	49
Existing System	Pikeville High School	31
Existing System	Holiday Inn Express	27
3	Marion Branch Development - Phase 1	1414
6	Marion Branch Development - Phase 2	1,197
9	Potter and Deskins Developments	326
10	Marion Branch Development - Phase 3	370
	TOTAL =	**5,025**

1. Proposed New Development to Occur During 0-20 Year Planning Period

The remaining non-residential customers in the Planning Area will be considered as residential in this study as the flow from these generators is relatively small.

4.03 ECONOMIC OR SOCIAL IMPACT

Currently no public wastewater collection or treatment systems are in place for approximately one third of the Planning Area. Many of the residents of inside the City limits of Pikeville have public sewer service, but the more rural areas of the Planning Area outside the City limits do not. It is anticipated that with the availability of public sewers in the rural area, will come more development including additional homes, as well as creation of some jobs.

Currently there is a lack of flat usable land area for development in Pike County. It is anticipated that the most significant impacts will be realized with the development of the Marion Branch Development Site, located at the southeastern end of the Planning Area. The proposed development consists of a total +/-300 developable acres to be used for residential, industrial, and commercial purposes. These developments will likely increase the tax base, create jobs, create new businesses for use by the residents, create recreational opportunities, create additional housing, etc. with an overall improvement of the quality of life in the Planning Area.

SECTION 5
EXISTING ENVIRONMENT IN THE PLANNING AREA

5.01 GENERAL

The assessment of environmental characteristics of the Planning Area is a critical part of a Facilities Plan. Understanding physical and operational constraints created by physical topography, geology, soils, surface water sources and quality, groundwater quality, plant and animal communities, and cultural and historical concerns is important when preparing a facilities plan as well as when designing sanitary sewer collection and treatment systems.

5.02 PHYSICAL ENVIRONMENT

5.02.1 Topography – The topography of the Planning Area is consistent with the eastern coalfields and typical of the Kanawha Section of the Appalachian Plateau physiographic region. Steep rugged, irregular mountains with narrow; winding valleys characterize the Planning Area. Some of the major streams are entrenched in floodplains of moderate width, but most of the smaller creeks have no valley floors.

The unsewered customers of the Planning Area have few options for wastewater disposal. Land for construction of residences is limited. Hillside lots are small and steep. "On-site" disposal systems tend to be ineffective. Consequently, most domestic wastewater ends up in the nearest stream or drainage ditch.

5.02.2 Geology – The Planning Area is underlain by the relatively flat lying strata of sandstones, siltstones, shales, and coals of the Breathitt Formation (Pennsylvania Age).

5.02.3 Soils – The soils of the hill slopes are the shallow soils of the Dekalb, Muskingham, Berks Association. The soils of the Allegheny Pope-Jefferson Association are formed on the nearly level terraces of the valley floors. Septic disposal systems tend to be ineffective in the steep, shallow soils of the hillsides and are severely restricted by the limited extent of the alluvial soils in the valleys.

5.03 HYDROLOGIC ENVIRONMENT

Hydrology is the study of the earth's water and atmosphere, including such factors as precipitation, surface and groundwater flow, storage, and evaporation.

5.03.1 Surface Water - The Levisa Fork of the Big Sandy River is the primary watercourse draining the Planning Area. Pikeville is located at the confluence of Island Creek with the Levisa Fork. The flow of the Levisa Fork is controlled in part by Fishtrap Lake located just south of Pikeville on the Levisa Fork, as well as the Flanagan Reservoir near Pound, Virginia. Surface water quality is generally poor to good upstream of Pikeville primarily due to lack of public sewers. Also, all local streams are subject to mining related discharges (sediments, acidic waters, etc.).

5.03.2 Surface Water Quality - All local streams are subject to mining related discharges (sediments, acidic waters, etc.), straight-line sewer pipe discharges from residences, and seepage from failed septic leach fields.

In a study of the Big Sandy River Basin the recommended criteria for fecal coliform is 200 colonies per 100 ml for 2 or more samples over a 30 day period or a single count of 1000 colonies per 100 ml water at any time. Some watersheds of the Big Sandy River Basin were

found to exceed the single count level by two to three times the limit. This high level of fecal coliform contamination in the watershed can partly be attributed to these poorly installed or failed septic and sewer systems and "straight-piping" discharges (BSRB Study).

5.03.3 Groundwater - The major aquifers of the Planning Area are the sedimentary rocks of the Breathitt Formation and the unconsolidated alluvial and colluvial deposits bordering the major stream courses. The type and depth of well, character of aquifer, and topography of the site control well yield. Generally, most drilled wells provide adequate supplies for domestic uses. Groundwater tends to have a high concentration of iron and manganese (especially for wells completed in shale strata), which stains laundry.

5.03.4 Wild and Scenic Rivers - There are no streams designated as wild and scenic rivers within the Planning Area. The only stream listed on the river.gov website for Kentucky is the Red River located in the Daniel Boone National Forest.

5.04 BIOLOGICAL ENVIRONMENT

5.04.1 Plant and Animal Communities- The Planning Area offers a diverse assortment of habitats for plant and wildlife communities ranging from stream borders, pastures and fields of the flood plain and stream corridors, to the steep slopes and narrow ridge tops of the forested hills. No adverse impact to the plant and animal communities would be anticipated due to the implementation of the wastewater collection and treatment systems as the majority of sewer facilities are planned to be constructed on existing state and local rights of ways, or previously disturbed areas.

According to the Kentucky Department of Fish and Wildlife Resources, the following species are present in the area and may require special attention during the design and construction phase of the projects:

1. Gray Bat (Myotis Grisescens)
2. Indiana Bat (Myotis Soldalis)
3. Eastern Small Footed Myotis (Myotis Leibii)

5.05 CULTURAL ENVIRONMENT

5.05.1 Historical/Archeological Sites - The State Historic Preservation Officer will have an opportunity to comment to the clearinghouse. To our knowledge, the proposed project has no detrimental impact on historic properties. Most pipelines are planned to be constructed on previously disturbed lands or public road right of ways.

5.06 OTHER RESOURCE FEATURES

5.06.1 CLIMATE

The Planning Area climate is classified as humid temperate, well suited to agriculture and other human activities. The climatic elements of sunlight, heat, moisture, and wind are all in moderation without prolonged extremes. Rainfall is abundant and fairly regular throughout the year, usually as short showers. Heavy snowfalls are rare. The seasons differ markedly, yet warm to cool weather prevails with extremes of heat and cold occurring only for short duration.

5.06.1.1 Temperature - Based on historical data the average temperature in January is 23.2° F and the average temperature in July is 87.2° F.

5.06.1.2 Precipitation - The average annual rainfall for this area is approximately forty-four (44) inches. The month of July typically has the most precipitation (4.2 inches).

5.06.2 ENERGY PRODUCTION AND CONSUMPTION

The Planning Area is centered in a region of energy production. Coal mining is the key industry of the region and is a significant component of the local economy.

5.06.3 POPULATION AND SOCIOECONOMIC CONDITIONS

(See Section 4 for population data and projected trends)

SECTION 6
EXISTING WASTEWATER SYSTEM

6.01 GENERAL

This section will describe the existing wastewater collection and treatment systems in the Planning Area.

6.02 ON-SITE DISPOSAL

The majority of residents in the Pikeville Planning Area outside of the Pikeville and Coal Run corporate limits rely on septic fields and straight pipes for the disposal of their sanitary wastewaters. **Exhibit 6-1** shows a map of the existing package treatment plants in the Planning Area as made available on the Environmental Protection Agency's online database for existing NPDES (KPDES) discharge permits. A list of existing KPDES discharge permits in the Planning Area is provided as Table 6-2. See also section 8A.03.01 and 8A.03.02 regarding the proposed removal and decommissioning of these package plants as public sewers are made available at their locations.

The remainder of the wastewater generated in the Planning Area is treated in one of the following ways: (1) septic tank and leach field or (2) straight pipe discharge. There is no ready means of assessing the relative number of septic tank and straight pipe discharges in use by the residents of the Planning Area. Historically, straight pipe discharges have been a common occurrence in eastern Kentucky because the rugged topography confines most development to the relatively narrow floodplains immediately adjacent stream courses.

6.03 TREATMENT PLANT(S)

The Pikeville WWTP handles the wastewater flows from the majority of the residences and small businesses within the Elkhorn City limits and has a rated capacity of 2.0 million gallons per day (MGD). According to the Discharge Monitoring Reports (DMR'S) available on the Environmental Protection Agency's online database for existing NPDES (KPDES) discharge permits, the existing Pikeville WWTP is operating at +/-92% of its rated average daily capacity.

In fall 2007 Pikeville was issued a consent judgment (decree) for violations pertaining to the City's wastewater collection and treatment system. The decree was issued by DOW Enforcement for violations pertaining to excessive inflow and infiltration (I&I) related to the presence of combined sanitary/storm water sewer lines within the City's collection system. See Table 6-0 for a summary of I&I removal projects completed by the City since 2008 as per our correspondence with City personnel. The City was also issued one agreed order within the last two years regarding violations of KPDES permit requirements for the Pikeville WWTP. See Section 6.06 for more details regarding compliance history.

Table 6-1 summarizes the DMR's for the existing Pikeville WWTP over the course of the last three (3) calendar years. Table 6-1 shows a growing increase in wastewater flows to the plant and can be attributed to the increase in inflow and infiltration (I&I) into the wastewater collection system as noted in the consent decree.

A map depicting the extents of the existing Pikeville wastewater collection and treatment system as well as existing localized package wastewater treatment plants is provided as **Exhibit 6-1**.

TABLE 6-0
Summary of I&I Removal Projects Completed

2012		
1	2/1/2012	Began Revierside Drive and Peach Orchard/Julius Avenue Storm Sewer Separation Project
2	10/8/2012	8th street: Removed two storm drains from sanitary sewer and connected to existing storm sewer. Included +/- 125 feet of 8" pipe.
3	9/20/2012	Smith Hill: Removed one storm drain on Smith Hill from sanitary sewer by constructing a 10" HDPE line to connect to existing open flow ditch on Poplar Street
4	2012	Sealed wastewater lift station overflow pipes (C.S.O.) at Poor Farm (32"), Huffman (12"), & Walters (32") lift stations
2011		
1	3/24/2011	Chloe Creek: A broken 6" sanitary sewer lateral was discovered along Chloe Creek Road in the ditch. Broken line was transferring lots of ditch water to sanitary sewer so it was removed and replaced.
2	2011	Aged galvanized manhole replacement by Elazules Mexican Restaurant downtown. Lid was also raised slightly to reduce the amount of surface runoff that could infiltrate the lid.
3	3/23/2011	Video Inspected sanitarys sewer line that parallels Pikeville Pond and all looked good
4	2011	Removed +/-50 roof leaders from Sanitary Sewer and redirected to storm water collection system
5	2011	Videod 10,471 LF of Sanitary Sewers to check condition and fix any I&I problems located
6	Apr-11	Mildred Street: Two surface water inlets removed from sanitary sewer and connected to storm system
2010		
1	2010	Removed +/-60-70 roof leaders from sanitary sewer and redirected to storm water collection system
2	Fall 2010	Upper Bowles Addition: Seven (7) 4" stormwater drains were removed from sanitary sewer and reconnected to existing stormwater system
2009		
1	2009	Six (6) old brick manholes, spray lined with concrete (Locations Below) to reduce I&I
		2- Park street
		2- College Street
		1- 8th street
		1- Other
2	4/18/2009	Central Avenue: Four (4) small stormwater drains were removed from sanitary sewer and reconnected to existing stormwater system with 8" PVC
3	2009	Removed +/-20-30 roof leaders from sanitary sewer and redirected to storm water collection system
4	fall/winter	Smoke tested Peach Orchard Street and found five (5) stormwater inlets connected to sanitary sewer. Little or no gutters connected. City determined that a project to correct the Peach Orchard System must be designed by a professional engineer. (See Year 2012 item).
2008		
1	2008	College Street: Five (5) small stormwater drains were removed from sanitary sewer and reconnected to existing stormwater system with 8" PVC
2	2008	J Street: Four (4) big stormwater drains/drop boxes were found connected to sanitary sewer. City forces converted the existing sanitary sewer line into a dedicated storm line and connected to existing storm sewer. City installed a new pressure sewer line to connect the 2-3 structures to the sanitary sewer system.
3	2008	Removed +/-50 roof leaders from sanitary sewer and redirected to storm water collection system

TABLE 6-1
EXISTING PIKEVILLE WWTP
DMR VALUES FOR LAST 3 CALENDAR YEARS

	PermitID	DATE	AVERAGE	UNITS	PEAK	UNITS
YEAR 2009	KY0025291	20090131	1.682	MGD	3.498	MGD
	KY0025291	20090228	1.165	MGD	1.682	MGD
	KY0025291	20090331	1.601	MGD	3.244	MGD
	KY0025291	20090430	1.626	MGD	2.742	MGD
	KY0025291	20090531	1.287	MGD	2.27	MGD
	KY0025291	20090630	1.171	MGD	2.855	MGD
	KY0025291	20090731	0.508	MGD	0.982	MGD
	KY0025291	20090831	0.579	MGD	1.424	MGD
	KY0025291	20090930	1.107	MGD	4.007	MGD
	KY0025291	20091031	1.859	MGD	2.713	MGD
	KY0025291	20091130	1.512	MGD	2.139	MGD
	KY0025291	20091231	2.456	MGD	4.214	MGD
	AVERAGE 2009 =		**1.379**	**MGD**	**2.648**	**MGD**
	AVERAGE 2009 =		**1,379,417**	**GPD**	**2,647,500**	**GPD**
YEAR 2010	KY0025291	20100131	2.219	MGD	5.102	MGD
	KY0025291	20100228	2.405	MGD	4.531	MGD
	KY0025291	20100331	2.053	MGD	3.078	MGD
	KY0025291	20100430	2.013	MGD	4.412	MGD
	KY0025291	20100531	2.124	MGD	5.492	MGD
	KY0025291	20100630	1.743	MGD	2.606	MGD
	KY0025291	20100731	1.604	MGD	2.666	MGD
	KY0025291	20100831	1.552	MGD	3.14	MGD
	KY0025291	20100930	1.414	MGD	2.083	MGD
	KY0025291	20101031	1.406	MGD	2.08	MGD
	KY0025291	20101130	1.549	MGD	2.803	MGD
	KY0025291	20101231	1.962	MGD	3.789	MGD
	AVERAGE 2010 =		**1.837**	**MGD**	**3.482**	**MGD**
	AVERAGE 2010 =		**1,837,000**	**GPD**	**3,481,833**	**GPD**
YEAR 2011	KY0025291	20110131	1.887	MGD	3.518	MGD
	KY0025291	20110228	1.999	MGD	4.421	MGD
	KY0025291	20110331	2.788	MGD	5.547	MGD
	KY0025291	20110430	2.974	MGD	4.49	MGD
	KY0025291	20110531	2.404	MGD	2.946	MGD
	KY0025291	20110630	1.52	MGD	2.57	MGD
	KY0025291	20110731	1.94	MGD	3.71	MGD
	KY0025291	20110831	1.102	MGD	1.747	MGD
	KY0025291	20110930	1.333	MGD	2.345	MGD
	KY0025291	20111031	1.502	MGD	8.36	MGD
	KY0025291	20111130	1.641	MGD	2.827	MGD
	KY0025291	20111231	1.731	MGD	3.269	MGD
	AVERAGE 2011 =		**1.902**	**MGD**	**3.813**	**MGD**
	AVERAGE 2011 =		**1,901,750**	**GPD**	**3,812,500**	**GPD**

Table 6-2
Existing KPDES Discharge Permits in Planning Area

#	FACILITY NAME	FACILITY ADDRESS	FACILITY CITY	KPDES #
1	PIKEVILLE STP	222 POUND PUPPY DRIVE	PIKEVILLE	KY0025291
2	ADKINS TRAILER PARK	2885 HURRICANE RD	PIKEVILLE	KY0083500
3	COLUMBIA GAS TRANS BOLDMAN	1258 HURRICANE RD	BOLDMAN	KY0095303
4	DALTON & ASSOCIATES LLC	COAL RUN HILL	PIKEVILLE	KY0108499
5	GRACE BAPTIST CHURCH	560 S MAYO TRAIL	PIKEVILLE	KY0093050
6	HALLS MOBILE HOME PARK #3	NOAH LN OFF RATLIFF CREEK RD	PIKEVILLE	KY0103454
7	JOHNSON PARK	1471 W SHELBIANA RD	PIKEVILLE	KY0103179
8	JONES OIL CO INC	67 LONESME CEDAR	PIKEVILLE	KY0105457
9	LATTER DAY SAINTS CHURCH	TOLLAGE CREEK RD	PIKEVILLE	KY0099384
10	MCKEE RENTALS	1572 W SHELBIANA RD	PIKEVILLE	KY0098663
11	MULLINS HILLSIDE HOMEOWNERS	US 23 N	MULLINS ADD.	KY0098205
12	PIKEVILLE PROFESSIONAL BLDG	219 RATLIFF CREEK RD	PIKEVILLE	KY0074853
13	ROWE FANNIN JR BUILDING	785 N MAYO TRAIL	PIKEVILLE	KY0103322
14	STONE COAL MHP	1835 STONE COAL RD	COAL RUN	KY0086321
15	WHAYNE SUPPLY CO	359 LANKS BRANCH RD	PIKEVILLE	KY0104396

6.04 COLLECTION AND CONVEYANCE SYSTEM

6.04.1 EXISTING COLLECTION SYSTEM

The City has successfully provided sewer services to approximately two-thirds of the Planning Area. The existing wastewater collection system consists of +/-55 miles of force mains and +/-60 miles of gravity sewers. Force mains range from 1.25" service lines to 14" trunk sewers. The gravity sewers range from 4" sewer laterals to 30" trunk sewers.

Exhibit 6-1 illustrates the location of existing collector sewers in the Planning Area.

6.04.2 EXISTING LIFT STATIONS

All existing lift stations are part of the existing Pikeville wastewater collection and treatment system. The existing wastewater collection system consists of +/- 38 wastewater lift stations range from 5 gpm to 1,500 gpm on average. See Table 6-3 for a list of the existing lift stations and maximum capacity ratings.

Table 6-3
Summary of Existing Lift Stations

I.D. #	Station Name	Station Location	Capacity (gpm) (Note 1)	TDH (ft) (Note 1)	HP (Note 1)	Notes
1	Farm Bureau	Off Bypass Road in Pikeville	86	Unknown	3	good condition
2	Poor Farm	Located Adjacent the Lower Pikeville Pond	2,160	49	35	good condition
3	Cedar Creek	Located at the Mouth of Cedar Creek Along RT 1384	223	Unknown	8	piping needs to
4	Bowles Addition	Serves Upper Bowles Addition. Located Along Bypass Rd./North Mayo Trail	83	Unknown	2	good condition
5	Walter's	Plant Influent Pump Station - Near Pikeville High School	1,421	97	47	good condition
6	Wal-Mart	On Thompson Road West of Walmart	400	94	30	good condition
7	Pauley	Serves Pauley Addition. Located Along Thompson Road	80	85	5	good condition
8	Keel Addition	Serves Keel Addition. Located Along Thompson Road	80	85	5	good condition
9	Buckley's Creek	Intersection of 119 and US23	100	74	10	good condition
10	Pike Central	Pike Central High School	37	10	2	good condition
11	Huffman	Behind Pikeville Storage Along Levisa Fork River Bank	380	Unknown	20	station wall needs
12	Ratliff's Branch	Located at the intersection of Ratliff Branch and US23 In Coal Run	50	53	3	good condition
13	Childer's Road	Located at the intersection of Childers Road and US23 In Coal	20	38	2	good condition
14	Suds Express	Off US23 in Coal Run	56	Unknown	3	good condition
15	Chevron/Autozone	Located at the intersection of Weddington Branch and US23 In Coal Run	600	135	35	good condition
16	Habitat	Located on Habitat Drive off of US23	62	60	3	good condition
17	Spine & Brain #1	Off US23 North of Pikeville Near Sunshine Lane	20	Unknown	3	good condition
18	Spine & Brain #2	Off US23 North of Pikeville Near Sunshine Lane	39	Unknown	3	good condition
19	Mayhorn's	Located off of US23 at the North End of Pikeville Across from Sunshine Lane	354	70	20	good condition

20	Coca Cola	Serves Coca Cola Distributor	176	Unknown	5	good condition
21	Old Wagner Station	Serves Mossy Bottom Subdivision Along Wagner Station Road	85	69	5	good condition
22	Coal Run	Serves Developed Areas of Coal Run	50	37	3	good condition
23	AEP	Serves AEP in Coal Run	50	Unknown	5	good condition
24	Windward Lane	Serves Windward Lane in Coal Run	219	Unknown	5	good condition
25	Scott Addition	Serves Scott Addtion in Coal Run	20	90	2	good condition
26	Super 8/Brookshire	Serves Brookshire Inn North of Pikeville Along Thompson Road	440	Unknown	3	good condition
27	Days Inn	Serves Days Inn South of Pikeville off US23	320	59	15	good condition
28	Yorktown	Off US23 South of Pikeville	192	Unknown	5	good condition
29	John Hollow	Off US23 South of Pikeville	188	Unknown	5	good condition
30	Indian Hills	Off US23 South of Pikeville	183	Unknown	2	good condition
31	Food City	Off US23 South of Pikeville	188	Unknown	3	good condition
32	Save-A-Lot	Off US23/North Mayo Trail in Pikeville	233	Unknown	3	good condition
33	K-Mart	Off US23 in Coal Run	50	72	5	good condition
34	Ramsey Mobile Home Park	Off US23 in Coal Run	50	72	5	good condition
35	Weddington Plaza Site	Off US23 in Coal Run	50	72	5	good condition
36	Hatcher Station		180	85	20	good condition
37	Mossy Bottom (Old Plant)	Located in Industrial Park in Mossy Bottom	105	54	10	good condition
38	Marion Branch Lift Station	Left Fork of Island Creek	660	120	45	good condition
	TOTAL				**390**	

1. Capacity, TDH, and HP are estimated for general purposes of estimating power consumption for lift stations.

6.05 BIOSOLIDS

Currently the City of Pikeville operates the only public wastewater treatment facility within the Planning Area. Pikeville's plant is equipped with a sludge dewatering press for dewatering of digested solids. After sludge is dewatered a third party hauler is required to transport the solids to the Pike County (Ford Branch) landfill for final disposal.

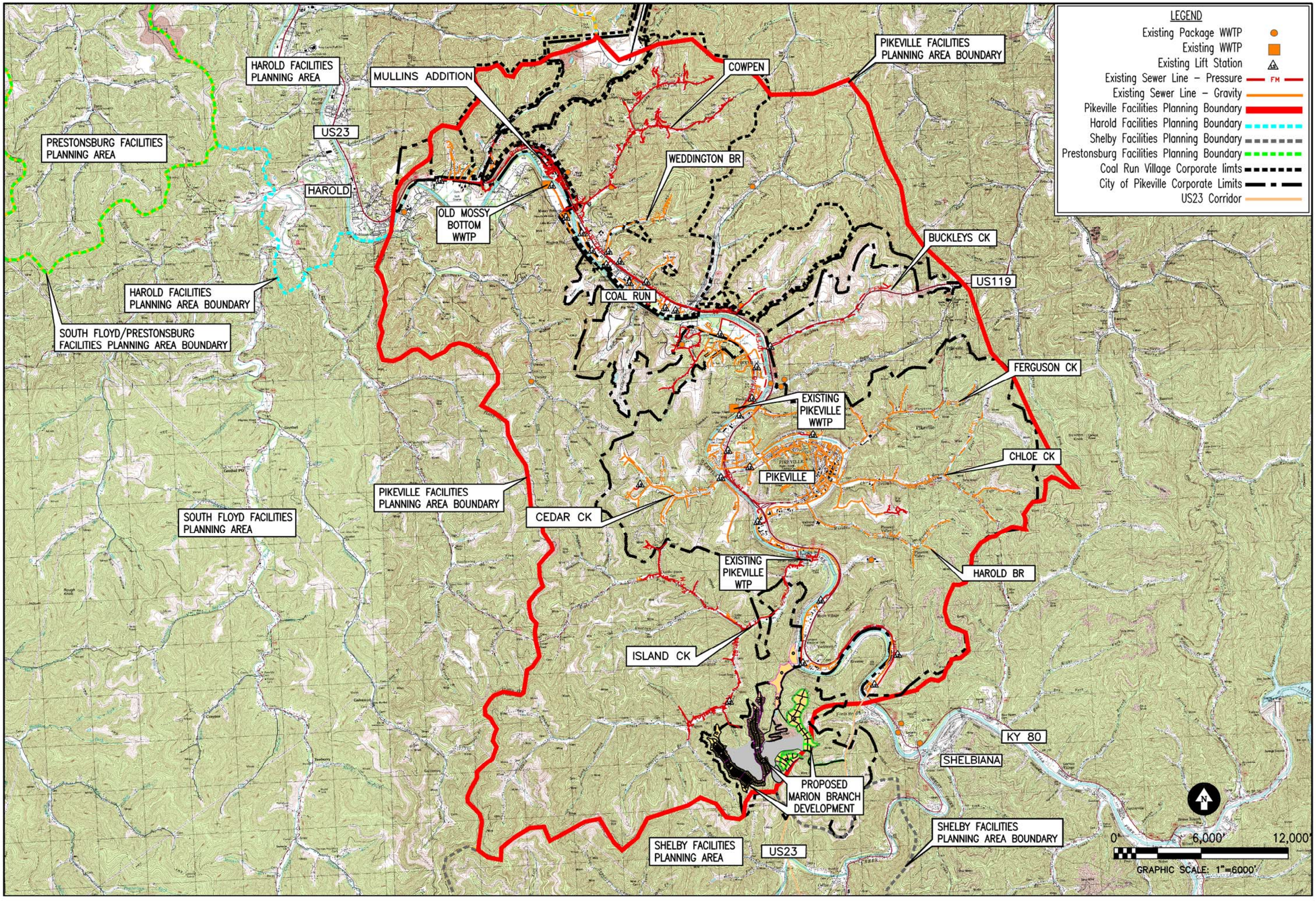
Occasional biosolids removal is required at localized package plants and residential septic systems. These biosolids typically are removed by third party sewage pumping companies in

the liquid sludge form and disposed of at local wastewater treatment facilities for further treatment and final disposal.

6.06 OPERATION, MAINTENANCE AND COMPLIANCE

According to DOW compliance records, Pikeville has received various minor violations over the recent years for their wastewater collection and treatment system. A summary of the violations is provided below:

October 16, 2007:	Issuance of the combined sewer separation (I&I) consent decree #07-CI-01673.
July 28, 2010:	Pikeville was issued Agreed Order #060158 for violations pertaining to the City's wastewater collection and treatment system. Violations pertained to exceeding KPDES limits for TSS, SS, Fecal Coliforms, Chlorine Residual, E-coli, and BOD at various times throughout the course of a 3 year period (2006-2009).
July 29, 2010:	N.O.V. Issued for excessive flows through plant. These flows were found to be attributable to excess I&I into the collection system.
July 2010 to Present	Miscellaneous N.O.V.'s issued to the City citing exceeded KPDES permit limits on various D.M.R. submittals.



DATE	DESCRIPTION OF REVISION

SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LENOIR CITY, TN
BRISTOL, VA

City of Pikeville
118 College Street
Pikeville, KY 41501

Pikeville Wastewater Facilities Plan
Existing Wastewater System

DATE:	6/19/12
SCALE:	As Noted
DRAWN BY:	BF
CHECKED:	KH
PROJECT NO:	12-410

SHEET:
EX 6-1
OF:

SECTION 7
FORECASTS OF FLOWS AND WASTE LOADS IN THE PLANNING AREA

7.01 CURRENT AND PROJECTED FLOWS

7.01.1 YEAR 0

Based on the equivalent populations of each sub-planning area (contract) determined in Table 4-1 of Section 4.01.2 for the planning year 0 the following Table 7-1 projects the estimated wastewater flows to be generated by the current existing population in the Pikeville Planning Area.

Table 7-1
Planning Area Estimated Flows for Year 0

	(A)	(B)	(C)	(D)
Area #	**Proposed Service Area**	**Population Equivalent (Note 1)**	**Avg. Daily Flow per Person (gpd) (Note 2)**	**Total Avg. Daily Flow per Area (gpd) (Note 3)**
Note 4	Existing City of Pikeville Sewer Population	18,349	100	1,834,912
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212	100	21,216
2	Expand Existing Pikeville WWTP	0	100	0
3	Marion Branch Development - Phase 1	0	100	0
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0	100	0
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593	100	59,296
6	Marion Branch Development - Phase 2	0	100	0
7	Broad Bottom	653	100	65,280
8	Right Fork of Island Creek / Coon Branch / Kati Street	1023	100	102,272
9	Deskins and Potter Development Sites / Coal Run Hill	631	100	63,104
10	Marion Branch Development - Phase 3	0	100	0
11	Left Fork of Island Creek / Road Fork	816	100	81,600
12	Boldman Bottom	413	100	41,344
13	Ratliff Creek	1229	100	122,944
14	Stonecoal Road	1034	100	103,360
15	Miscellaneous Sewer System Upgrades	0	100	0
16	Hurricane Creek - Phase I - Lower	1311	100	131,104
17	Hurricane Creek - Phase 2 - Upper	1012	100	101,184
	TOTAL =	**27,276**		**2,727,616**

1. Column B is determined by e911 data, the City of Pikeville sewer customer list and aerial imagery
2. Ten States Standards
3. Column D calculated by multiplying column C with column B.
4. Existing Sewer Population includes 2,384 residential customers and 539 commercial customers. Flow was determined from actual DMR readings from WWTP.

7.01.2 YEAR 20

Based on the equivalent populations of each sub-planning area (contract) determined in Table 4-2 of Section 4.01.3 Section 4 for the planning year 20 the following Table 7-2 projects the estimated wastewater flows to be generated by the future population in the Pikeville Planning Area. Anticipated flows from future developments are included in Table 7-2. See Table 7-3 for the anticipated individual flow contributions from each proposed development. A schematic depicting the anticipated flows within the Planning Area is provided as **Exhibit 7-1**.

Table 7-2
Planning Area Estimated Flows for Year 20

	(A)	(B)	(C)	(D)
Area #	**Proposed Service Area**	**Population Equivalent (Note 1)**	**Avg. Daily Flow per Person (gpd) (Note 2)**	**Total Avg. Daily Flow per Area (gpd) (Note 3)**
Note 4	Existing City of Pikeville Sewer Population	18,349	100	1,834,912
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212	100	21,216
2	Expand Existing Pikeville WWTP	0	100	0
3	Marion Branch Development - Phase 1	1414	100	141,440
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0	100	0
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593	100	59,296
6	Marion Branch Development - Phase 2	1197	100	119,680
7	Broad Bottom	653	100	65,280
8	Right Fork of Island Creek / Coon Branch / Kati Street	1023	100	102,272
9	Deskins and Potter Development Sites / Coal Run Hill	631	100	63,104
10	Marion Branch Development - Phase 3	370	100	36,992
11	Left Fork of Island Creek / Road Fork	816	100	81,600
12	Boldman Bottom	413	100	41,344
13	Ratliff Creek	1229	100	122,944
14	Stonecoal Road	1034	100	103,360
15	Miscellaneous Sewer System Upgrades	0	100	0
16	Hurricane Creek - Phase I - Lower	1311	100	131,104
17	Hurricane Creek - Phase 2 - Upper	1012	100	101,184
	TOTAL =	**30,257**		**3,025,728**

1. Column B is determined by e911 data, the City of Pikeville sewer customer list and aerial imagery
2. Ten States Standards
3. Column D calculated by multiplying column C with column B.
4. Existing Sewer Population includes 2,834 residential customers and 539 commercial customers. Flow was determined from actual DMR readings from WWTP.
5. Proposed development to occur within service area in 0-20 Year Period

7.02 CURRENT AND PROJECTED COMMERCIAL AND INDUSTRIAL FLOWS

A search of KPDES (NPDES) files for the Levisa Fork and its tributaries revealed that the Pikeville Planning Area currently has no significant existing industrial wastewater customers. Pikeville's large customers consist primarily of commercial shopping, restaurant, and office complexes and schools. It is anticipated that industrial and/or mixed use developments will be located at Marion Branch and residential developments will be located at the Potter and Deskins development sites.

The following Table 7-3 represents the anticipated flows created by the proposed and existing commercial/large water users as well as proposed new developments within the Planning Area.

Table 7-3
Summary of Flows from Current and Proposed Large Flow Contributors (0-20 Year Period)

Area # (Cont. #)	Proposed Service Area	Population Equivalent	Avg. Daily Flow per Unit (gpd)	Avg. Daily Flow (gpd)			Total Avg. Daily Flow (gpd)
				0-2 Year	3-10 Year	11-10 Year	
Existing System	Pikeville Medical Hospital	824	100	82,433	82,433	82,433	82,433
Existing System	Pike County Jail	369	100	36,924	36,924	36,924	36,924
Existing System	Landmark Inn	111	100	11,145	11,145	11,145	11,145
Existing System	East Kentucky Exposition Center	102	100	10,194	10,194	10,194	10,194
Existing System	Super 8 Lodging	73	100	7,344	7,344	7,344	7,344
Existing System	Applebees	73	100	7,314	7,314	7,314	7,314
Existing System	Walmart	57	100	5,742	5,742	5,742	5,742
Existing System	Hampton Inn	49	100	4,931	4,931	4,931	4,931
Existing System	Pikeville High School	31	100	3,061	3,061	3,061	3,061
Existing System	Holiday Inn Express	27	100	2,700	2,700	2,700	2,700
3	Marion Branch Development - Phase 1	1414	100	141,440	141,440	141,440	141,440
6	Marion Branch Development - Phase 2	1,197	100		119,680	119,680	119,680
9	Potter and Deskins Developments	326	100		32,640	32,640	32,640
10	Marion Branch Development - Phase 3	370	100		36,992	36,992	36,992
	TOTAL =	**3,308**		**313,228**	**502,540**	**502,540**	**502,540**

1. Proposed New Development to Occur During 0-20 Year Planning Period

The remaining non-residential customers in the Planning Area will be considered as residential for the purposes of this study as the flow from these generators is relatively small.

7.03 WASTEWATER TREATMENT PLANT PROPOSED DESIGN CAPACITY

According to the Louisville Data Center, population studies predict negative growth over the next 20 years, but with a recent boom in the natural resource industry this Facilities Plan will assume no change in population over the next 20 years with the exception of the proposed Marion Branch development and smaller development sites in the Planning Area. Based on the flow projections in Table 7-2 a recommended treatment plant capacity of 4.0 mgd is needed to handle flows generated during the 0-20 year planning period.

7.04 WASTE LOAD ALLOCATION (WLA)

The effluent limits for an expanded wastewater treatment plant are presented in Table 7-4. The supporting waste load allocation letter from the Division of Water is presented in Appendix C.

TABLE 7-4
EFFLUENT LIMITS

Parameter	Limits for Existing Pikeville Plant	New WLA Limits for Expanded Plant	
		Initial Limits	Ultimate Limits
$CBOD_5$	30 mg/l	30 mg/l	30 mg/l
TSS	30 mg/l	30 mg/l	30 mg/l
NH_3	20 mg/l	20 mg/l	20 mg/l
DO	2 mg/l	2 mg/l	2 mg/l

7.05 FORECASTS OF WASTE LOADS AND FLOWS

Table 7-5 presents the anticipated wastewater flows by service area and planning period. Ten State Standards for wastewater facilities suggests the following loading factors for normal strength domestic waste:

- 0.17 LB (0.08 kg) BOD_5/P.E./day
- 0.20 LB (0.09 kg) TSS/P.E./day
- 0.16 LB (0.07 kg) dried sludge production/P.E./day

Using a flow of 100 gpd per equivalent person the waste loading for the project may be forecasted as illustrated in Tables 7-6, 7-7, and 7-8. The waste load forecasts of planning periods 0-2, 3-10, and 11-20 are summarized in Table 7-9.

Table 7-5
Anticipated Flows by Service Area and Planning Period

Area #	Proposed Service Area	2032 Population Equivalent	Avg. Daily Flow (gpd)			Total Avg. Daily Flow (gpd)
			0-2 Year (note 1)	3-10 Year (note 1)	11-20 Year (note 1)	
	Existing City of Pikeville Sewer Population	18,349	1,834,912			1,834,912
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212	21,216			21,216
2	Expand Existing Pikeville WWTP	0	X	-	-	0
3	Marion Branch Development - Phase 1	1,414	141,440			141,440
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0	0			0
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593		59,296		59,296
6	Marion Branch Development - Phase 2	1,197		119,680		119,680
7	Broad Bottom	653		65,280		65,280
8	Right Fork of Island Creek / Coon Branch / Kati Street	1,023		102,272		102,272
9	Deskins and Potter Development Sites / Coal Run Hill	631		63,104		63,104
10	Marion Branch Development - Phase 3	370		36,992		36,992
11	Left Fork of Island Creek / Road Fork	816			81,600	81,600
12	Boldman Bottom	413			41,344	41,344
13	Ratliff Creek	1,229			122,944	122,944
14	Stonecoal Road	1,034			103,360	103,360
15	Miscellaneous Sewer System Upgrades	0			0	0
16	Hurricane Creek - Phase I - Lower	1,311			131,104	131,104
17	Hurricane Creek - Phase 2 - Upper	1,012			101,184	101,184
	TOTAL =	**30,257**	**1,997,568**	**446,624**	**581,536**	**3,025,728**

Notes:
1. Equals Equivalent Population * 100 gpd

TABLE 7-6
WASTE LOAD FORECAST (0-2 Year)

Contract (Phase) #	Proposed Service Area	Pop. Eqv.	Avg. Daily Flow per Person (gpd)	Total Avg. Daily Flow (gpd)	BOD		TSS		SOLIDS	
					lb/ day	mg/l	lb/ day	mg/l	lb/ day	mg/l
	Existing City of Pikeville Sewer Population	18349	100	1,834,912	3119	204	3670	240	2936	192
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212	100	21,216	36	204	42	240	34	192
2	Expand Existing Pikeville WWTP	0								
3	Marion Branch Development - Phase 1	1414	100	141,440	240	204	283	240	226	192
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0								
	TOTAL =	**19,976**		**1,997,568**	**3,396**		**3,995**		**3,196**	

TABLE 7-7
WASTE LOAD FORECAST (3-10 year)

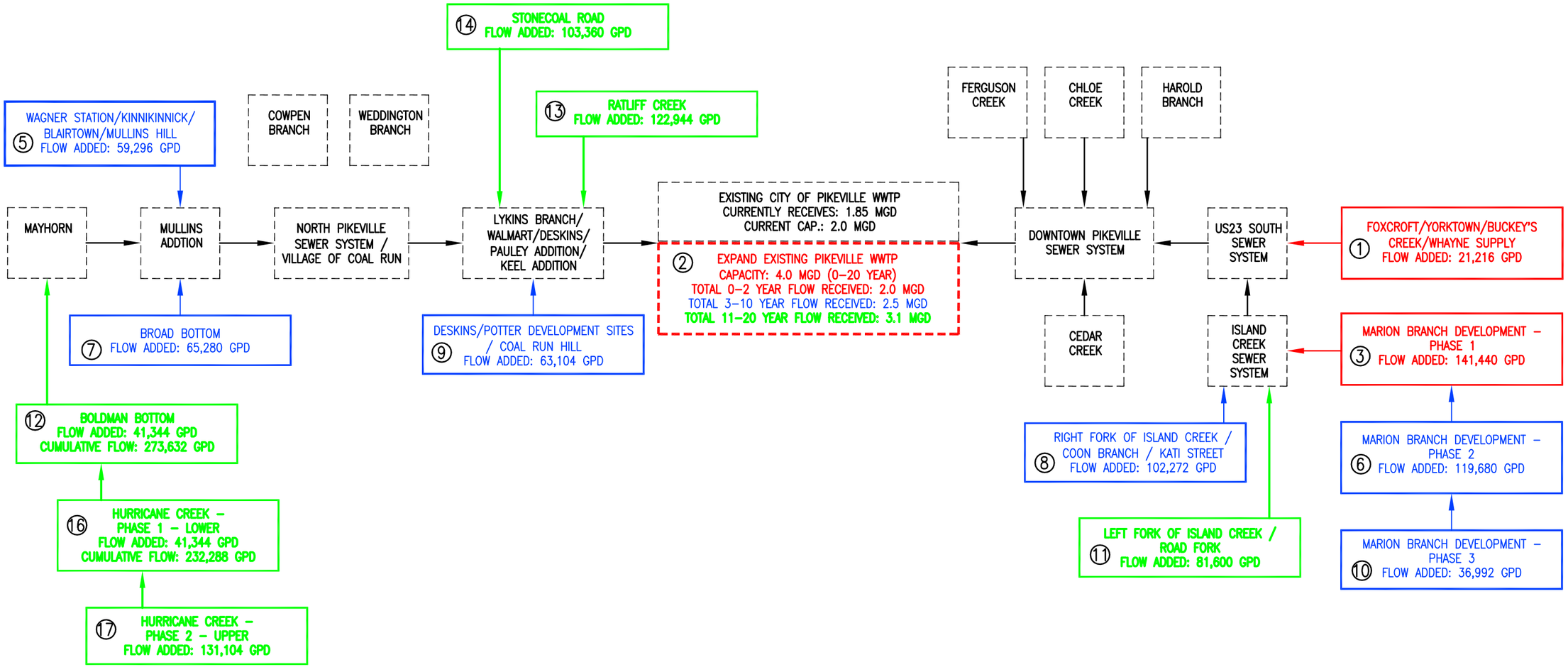
Contract (Phase) #	Proposed Service Area	Pop. Eqv.	Avg. Daily Flow per Person (gpd)	Total Avg. Daily Flow (gpd)	BOD		TSS		SOLIDS	
					lb/ day	mg/l	lb/ day	mg/l	lb/ day	mg/l
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593	100	59,296	101	204	119	240	95	192
6	Marion Branch Development - Phase 2	1197	100	119,680	203	204	239	240	191	192
7	Broad Bottom	653	100	65,280	111	204	131	240	104	192
8	Right Fork of Island Creek / Coon Branch / Kati Street	1023	100	102,272	174	204	205	240	164	192
9	Deskins and Potter Development Sites / Coal Run Hill	631	100	63,104	107	204	126	240	101	192
10	Marion Branch Development - Phase 3	370	101	37,362	63	202	74	237	59	190
	TOTAL =	**4,466**		**446,994**	**759**		**893**		**715**	

TABLE 7-8
WASTE LOAD FORECAST (11-20 Year)

Contract (Phase) #	Proposed Service Area	Pop. Eqv.	Avg. Daily Flow per Person (gpd)	Total Avg. Daily Flow (gpd)	BOD		TSS		SOLIDS	
					lb/ day	mg/l	lb/ day	mg/l	lb/ day	mg/l
11	Left Fork of Island Creek / Road Fork	816	100	81,600	139	204	163	240	131	192
12	Boldman Bottom	413	100	41,344	70	204	83	240	66	192
13	Ratliff Creek	1,229	100	122,944	209	204	246	240	197	192
14	Stonecoal Road	1,034	100	103,360	176	204	207	240	165	192
15	Miscellaneous Sewer System Upgrades	0	100							
16	Hurricane Creek - Phase I - Lower	1,311	100	131,104	223	204	262	240	210	192
17	Hurricane Creek - Phase 2 - Upper	1,012	100	101,184	172	204	202	240	162	192
	TOTAL =	**5,815**		**581,536**	**989**		**1,163**		**930**	

TABLE 7-9
WASTE LOAD FORECAST SUMMARY BY PLANNING PERIOD

Planning Period	Pop. Eqv.	Avg. Daily Flow per Person (gpd)	Total Avg. Daily Flow (gpd)	BOD		TSS		SOLIDS	
				lb/ day	mg/l	lb/ day	mg/l	lb/ day	mg/l
0-2 Year	19,976	100	1,997,568	3396	204	3995	240	3196	192
3-10 Year	4,466	100	446,624	759	204	893	240	715	192
11-20 Year	5,815	100	581,536	989	204	1163	240	930	192
TOTAL =	**30,257**		**3,025,728**	**5,144**		**6,051**		**4,841**	



LEGEND

0 to 2 Year Planning Period
–Collection System Extension
–Expand Existing WWTP to 4.0 MGD

3 to 10 Year Planning Period
–Collection System Extensions

11 to 20 Year Planning Period
–Collection System Extensions

Existing Pikeville Sewer

Phase/Contract/Area #

NOTE:
ALL FLOWS ARE AVERAGE DAILY FLOWS

DESCRIPTION OF REVISION | DATE

SUMMIT ENGINEERING, INC.
LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
ELKHORN, KY

City of Pikeville
118 College Street
Pikeville, KY 41501

Pikeville Wastewater Facilities Plan
Projected Flows Schematic (0–20 Year Planning Period)

DATE:	6/19/12
SCALE:	NTS
DRAWN BY:	BF
CHECKED:	KH
PROJECT NO:	12–410

SHEET:
EX 7-1
OF:

SECTION 8A
COLLECTION AND CONVEYANCE ALTERNATIVES

8A.01 GENERAL

This section will evaluate alternatives for providing collection and conveyance of anticipated wastewater flows for the Planning Area.

8A.02 PROPOSED SERVICE AREAS

The wastewater collection, conveyance and treatment system for the study area is divided into seventeen (17) sub Planning Areas as described in Section 3 herein. (See **Exhibit 3-2A** for a map showing project areas by planning period and **Exhibit 8A-1** depicting the extents of each service area). These sub-planning service areas are as follows:

1. Foxcroft/Yorktown/Buckley's Creek / Whayne Supply
2. Expand Existing Pikeville WWTP
3. Marion Branch Development- Phase 1
4. Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)
5. Wagner Station/Kinnikinnick/Blairtown/Mullins Hill
6. Marion Branch Development- Phase 2
7. Broad Bottom
8. Right Fork of Island Creek/Coon Branch/Kati Street
9. Deskins and Potter Development Sites/Coal Run Hill
10. Marion Branch Development- Phase 3
11. Left Fork of Island Creek/Road Fork
12. Boldman Bottom
13. Ratliff Creek
14. Stonecoal Road
15. Miscellaneous Sewer System Upgrades
16. Hurricane Creek- Phase 1- Lower
17. Hurricane Creek- Phase 2- Upper

8A.03 DESIGN ALTERNATIVES

There are two alternates for the collection of wastewaters: (1) pressure sewers and (2) conventional gravity sewers. The "Do Nothing" option is not desirable from an environmental or quality of life standpoint and was not evaluated beyond this point. The following paragraphs highlight the advantages of each system.

8A.03.1 ALTERNATE 1 – PRESSURE SEWER SYSTEM

In a pressure sewer system each household, business, or institution is served by an individual simplex grinder pump station. An illustration of a typical pressure sewer layout is presented in **Exhibit 8A-2**. The individual customer on a pressure sewer system is responsible for the power service to the pump station and the utility is responsible for the maintenance and care of the pumping unit. A typical customer "Sewer User Agreement" is reproduced herein in **Appendix E**. The individual pump stations are headered together on small diameter force mains that collect and convey the flow to centralized treatment.

The primary design consideration for a force main sewer is the cleansing velocity. Ten States Standards requires a minimum cleansing velocity of two (2) feet per second. Extremely high

velocities should also be avoided to minimize the forces acting on joints and fittings in the force main. The design flows for sizing the force mains are obtained from the daily sewer flow rates calculated previously.

Due to the terrain of the Planning Area and the location of the wastewater treatment facility, most of the project's pressure sewers will be conveying flow in a downhill direction from the tributary side hollows. Downhill pumping through significant changes in elevation creates line pressures too great to be overcome by individual residential pumping units. Consequently, the pressurized sewage flows must be returned to atmospheric pressure at selected locations. This creates a demand for mainline pump stations to break pressure and then re-pressurize the flow on its way to the plant.

Half of the Planning Area is located down river from the existing WWTP. Mainline lift stations are already in place on the existing system to "lift" the wastewater as needed to pump the flows upstream (uphill) to the plant.

Upon construction of collector sewers to customers that have existing package wastewater treatment plants, through the mandatory tap authority the City of Pikeville, as well as Pike County Fiscal Court have, the package plants will be removed from service and properly decommissioned by the City, County, or property owner depending on which entity assumes responsibility for said work during that particular project. DOW will be notified of any and all decommissioned package plants through the submittal of "no discharge permits" by the package plant owner following the removal of said plant.

A preliminary layout of the proposed sewer collection system and extensions is presented in **Exhibit 8A-1**.

8A.03.2 ALTERNATE 2 – CONVENTIONAL GRAVITY SEWER

A conventional gravity sewer consists of a series of manholes connected by pipes to transport wastewater by gravity to the treatment facility. The pipe must be laid 'gun barrel straight' manhole to manhole on a uniform down gradient to insure positive flow. Ten States Standards mandates minimum slopes for each diameter of pipe to minimize solids deposition. Obviously, these sewers, by nature of their design, are constructed to follow the natural drainage of a watershed.

Unfortunately, site topography and development does not always allow sewers to follow stream courses. Further, since the lines must flow by gravity, they cannot be diverted around major obstacles, such as intersecting storm drains and culverts. Therefore, pump stations and force mains are still a necessary part of conventional gravity sewer construction. However, the pump stations are mainline stations owned, operated and maintained solely by the utility. Additionally, the "gun barrel" straight construction of a gravity sewer system typically requires procurement of right of way from private concerns, which may add substantially to the cost of the project.

The topographical layout of the Planning Area contains many obstacles for gravity sewers such as streams that cannot be crossed without the aid of a lift station. These streams divide many of the service areas into two parts. In these areas the use of lift stations with a gravity sewer extension or residential grinder pumps with force mains will be utilized to serve the customers on the opposing side of the river.

The Planning Area is arranged such that a portion of the wastewater from down river from the WWTP is collected by gravity sewers flowing away from the plant, and then pumped back through a

parallel force main to the plant. The portion of the Planning Area up river from the plant is collected primarily by gravity sewer collectors that flow into mainline lift stations and pump toward the plant.

Upon construction of collector sewers to customers that have existing package wastewater treatment plants, through the mandatory tap authority the City of Pikeville, as well as Pike County Fiscal Court have, the package plants will be removed from service and properly decommissioned by the City, County, or property owner depending on which entity assumes responsibility for said work during that particular project. DOW will be notified of any and all decommissioned package plants through the submittal of "no discharge permits" by the package plant owner following the removal of said plant.

A preliminary layout of the proposed sewer collection system extensions as well as existing collection system is presented in **Exhibit 8A-1**. However, the exact location of proposed lift stations will vary slightly from those depicted in **Exhibit 8A-1**.

8A.04 SERVICE AREA COLLECTION AND CONVEYANCE SYSTEMS

Alternates for pressure and gravity sewer systems were prepared for each of the seventeen (17) service areas. Each service area was considered to be an individual phase, or contract of construction. A detailed opinion of probable construction cost for each contract is provided as Tables 1-36 in Appendix D along with the corresponding project exhibit for the selected plan for each contract.

The following Table 8A-1 summarizes the proposed lift stations required for alternate 1 the pressure sewer system (preferred alternate). Table 8A-2 evaluates both alternates on a non-monetary basis.

Table 8A-1

Summary of Proposed Pressure Sewer Alternate Lift Stations

#	Area #	Proposed Service Area	Lift Station Location Description	Capacity (GPM)	EST. HP
1	3	Marion Branch Development Phase 1	Phase 1 Residential Development	50	3
2	3	Marion Branch Development Phase 1	Phase 1 Residential Development	50	3
3	6	Marion Branch Development Phase 2	Phase 2 Residential Development	50	3
5	8	Right Fork of Island Creek / Coon Branch / Kati Street	Right Fork	50	3
6	10	Marion Branch Development Phase 3	Phase 3 Residential/Industrial Development	100	6
7	12	Boldman Bottom	Serves Trailer Court	50	3
8	13	Ratliff Creek	Ratliff Creek	50	3
9	14	Stonecoal Road	Stonecoal Road	100	6
10	17	Hurricane Creek - Phase 2 - Upper	Hurricane Creek - Phase 2 - Upper Near Owsley	50	3
				TOTAL ESTIMATED HP =	**33**

8A.05 SELECTION OF ALTERNATE

Alternates 1 and 2 are compared on a present worth basis in Table 8A-5 at the end of this section. The present worth analysis assumes:

1. The life of the system is twenty (20) years.
2. An interest rate of seven (7) percent.
3. An inflation rate of zero (0).
4. A salvage value of zero (0).

The pressure sewer alternate was found to be the most economical approach in existing developed areas. Table 8A-3, located at the end of this section, summarizes the estimated project costs for each alternate by contract and planning period. Table 8A-4 shows the present worth analysis for each collection system alternate by planning period.

Gravity systems are the preferred alternate for the pending new development at Marion Branch. Gravity sewers are more cost effective in new developments where land use density is high and uncertainty regarding the whereabouts of underground utilities is not an issue.

The cost opinions of Tables 1-18 of Appendix D contain the pressure sewer alternative and the Tables 19-36 contain cost opinions for the gravity sewer alternative. Operations and maintenance costs for both alternatives 1 and 2 were derived in Tables 37-39 of Appendix D.

Exhibit 8A-1 presents a conceptual layout of the proposed sewer system.

8A.06 NON-MONETARY FACTORS

Non-monetary factors are those, which are more subjective in nature and cannot easily have a dollar value assigned to them. The non-monetary factors evaluated for this study are:

1. Ease of construction- the pressure sewer system is simpler to construct because it can be constructed like a water line, with no need to be concerned with maintaining set grades. A pressure sewer has smaller line diameters, is buried at shallower depths than a gravity system, and is frequently installed by trenchless techniques. Consequently, pressure sewer construction is far less disruptive to existing developed areas and has less environmental impact.

2. Ease of operation- the gravity sewer system is simpler to operate because it has fewer pumps to maintain.

3. Adaptability - the pressure sewer system is more readily adaptable to rugged terrain as it is not constrained by a minimum slope, and can force wastewater up slopes as necessary.

4. Right of way – The right of way taking for pressure sewers is significantly less than for gravity sewers.

5. Reserve Capacity (Expansion) – It is easier to provide reserve capacity in gravity sewers.

Table 8A-2 summarizes the above criteria and gives each a score of + or -. A "positive" score indicates a favorable rating and a "negative" indicates an unfavorable rating. The alternate with the most favorable rating is the preferred.

TABLE 8A-2
Non-Monetary Factor Rating

FACTOR	PRESSURE SYSTEM	GRAVITY SYSTEM
Ease of Construction	+	-
Ease of Operation	-	+
Adaptability	+	-
Right of Way	+	-
Reserve Capacity	-	+
SCORE	**3**	**2**

The pressure sewer alternate is the preferred collection system alternate both from a present worth analysis and from a non-monetary analysis. See Table 8A-3 for a summary of collection system costs by alternate and planning period. See Table 8A-4 for a present worth analysis of the collection system by planning period.

TABLE 8A-3
SUMMARY OF ESTIMATED SEWER CONSTRUCTION COSTS BY ALTERNATE

AREA #	SERVICE AREA	PROJECT PLANNING PERIOD					
		0-2 YEAR PERIOD		3-10 YEAR PERIOD		11-20 YEAR PERIOD	
		ALT #1 PRESSURE	ALT #2 GRAVITY	ALT #1 PRESSURE	ALT #2 GRAVITY	ALT #1 PRESSURE	ALT #2 GRAVITY
0	Existing City of Pikeville Sewer Population	N/A	N/A	N/A	N/A	N/A	N/A
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	$ 905,644.67	$ 2,085,647.00				
2	Expand Existing Pikeville WWTP	N/A	N/A	N/A	N/A	N/A	N/A
3	Marion Branch Development - Phase 1	$ 2,743,251.00	$ 2,743,251.00				
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	$ 1,834,945.00	$ 1,845,245.00				
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill			$ 1,250,091.00	$ 1,707,586.00		
6	Marion Branch Development - Phase 2			$ 2,607,822.67	$ 2,607,822.67		
7	Broad Bottom			$ 1,754,636.00	$ 4,397,958.50		
8	Right Fork of Island Creek / Coon Branch / Kati Street			$ 2,324,968.00	$ 5,603,522.50		
9	Deskins and Potter Development Sites / Coal Run Hill			$ 2,544,152.00	$ 2,544,152.00		
10	Marion Branch Development - Phase 3			$ 2,273,450.33	$ 2,273,450.33		
11	Left Fork of Island Creek / Road Fork					$ 2,193,900.00	$ 4,838,508.00
12	Boldman Bottom					$ 1,005,117.67	$ 1,597,285.50
13	Ratliff Creek					$ 2,746,032.00	$ 6,256,360.00
14	Stonecoal Road					$ 2,636,697.00	$ 6,458,909.00
15	Miscellaneous Sewer System Upgrades					$ 2,564,185.00	$ 2,564,185.00
16	Hurricane Creek - Phase I - Lower					$ 3,417,437.00	$ 7,729,672.00
17	Hurricane Creek - Phase 2 - Upper					$ 2,327,800.00	$ 5,271,154.00
	SUB-TOTAL CONSTRUCTION	**$ 5,483,840.67**	**$ 6,674,143.00**	**$ 12,755,120.00**	**$ 19,134,492.00**	**$ 16,891,168.67**	**$ 34,716,073.50**
	COST BY PHASE						
	Construction Contingency @ 15%	$ 822,576.10	$ 1,001,121.45	$ 1,913,268.00	$ 2,870,173.80	$ 2,533,675.30	$ 5,207,411.03
	Right of Way, Engineering Design, Inspection, Bond Council, Additional Engineering, and Legal @ 35% (Note 1)	$ 1,919,344.23	$ 3,003,364.35	$ 4,464,292.00	$ 8,610,521.40	$ 5,911,909.03	$ 15,622,233.08
	PROJECT COST BY PHASE	**$ 8,225,761.00**	**$ 10,678,628.80**	**$ 19,132,680.00**	**$ 30,615,187.20**	**$ 25,336,753.00**	**$ 55,545,717.60**

TOTAL PROJECT COST (PRESSURE) =	**$ 52,695,194.00**
TOTAL PROJECT COST (GRAVITY) =	**$ 96,839,533.60**

1. Gravity Sewers Assume an Additional 10% for Right of Way Acquisition Costs

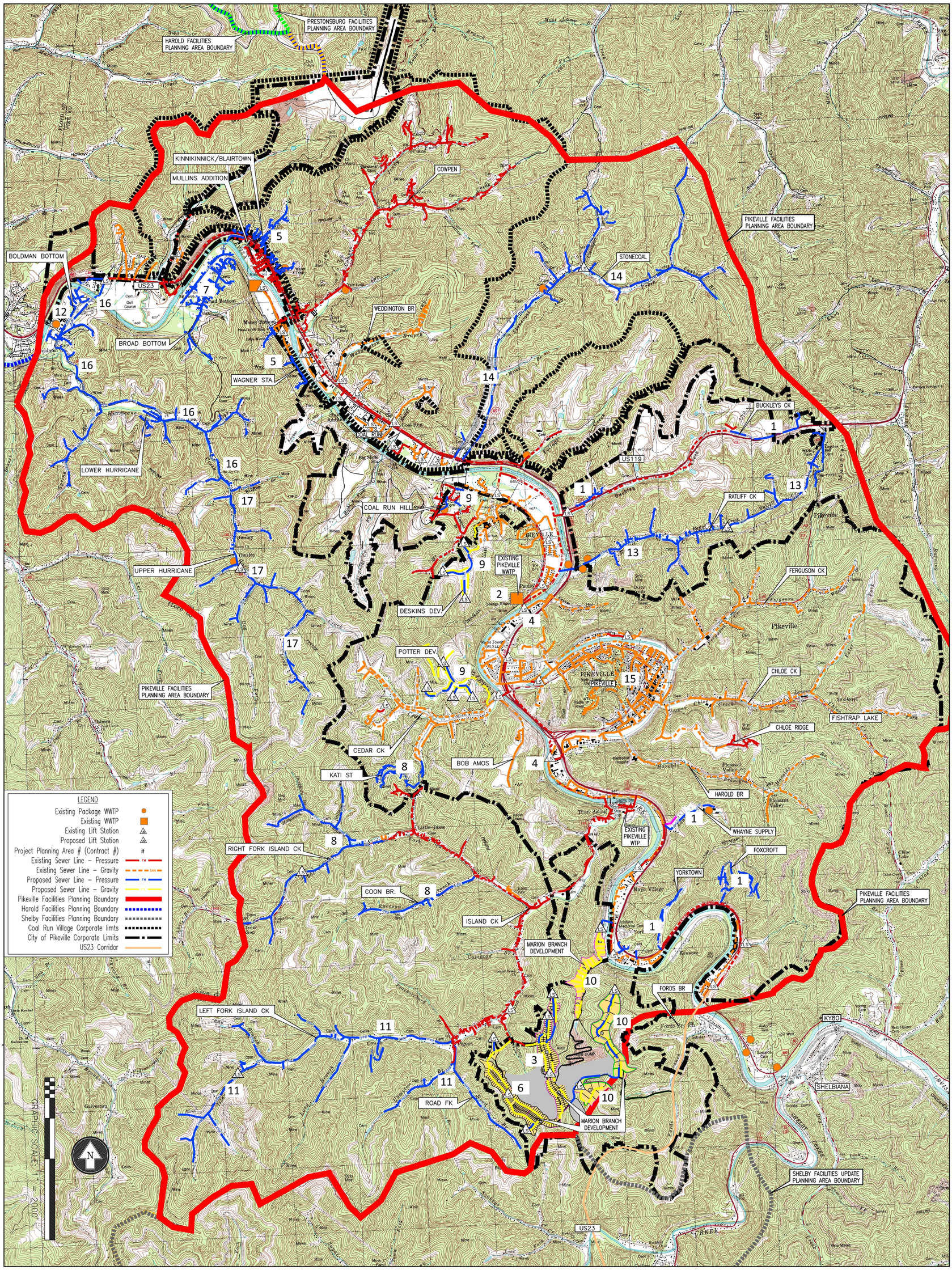
TABLE 8A-4
PRESENT WORTH ANALYSIS

SERVICE AREA	PROJECT YEAR					
	0-2 YEAR PERIOD		3-10 YEAR PERIOD		11-20 YEAR PERIOD	
	ALT #1 PRESSURE	ALT #2 GRAVITY	ALT #1 PRESSURE	ALT #2 GRAVITY	ALT #1 PRESSURE	ALT #2 GRAVITY
1. CONSTRUCTION COST BY PHASE	$ 5,483,840.67	$ 6,674,143.00	$ 12,755,120.00	$ 19,134,492.00	$ 16,891,168.67	$ 34,716,073.50
2. Construction Contingency @ 15%	$ 822,576.10	$ 1,001,121.45	$ 1,913,268.00	$ 2,870,173.80	$ 2,533,675.30	$ 5,207,411.03
3. Right of Way, Engineering Design, Inspection, Bond Council, and Legal @ 35% (Note 4)	$ 1,919,344.23	$ 3,003,364.35	$ 4,464,292.00	$ 8,610,521.40	$ 5,911,909.03	$ 15,622,233.08
4. PROJECT COST BY PHASE	**$ 8,225,761.00**	**$ 10,678,628.80**	**$ 19,132,680.00**	**$ 30,615,187.20**	**$ 25,336,753.00**	**$ 55,545,717.60**
5. Present Worth Factor (Int = 7%, t = 10 Yrs)			0.5083	0.5083		
6. Present Worth Factor (Int = 7%, t = 20 Yrs)					0.2584	0.2584
7. PRESENT WORTH PROJECT COST	**$ 8,225,761.00**	**$ 10,678,628.80**	**$ 9,725,141.24**	**$ 15,561,699.65**	**$ 6,547,016.98**	**$ 14,353,013.43**
8. OPERATIONS & MAINTENANCE (See Note 1)	**$1,061,800**	N/A	**$368,633**	N/A	**$855,597**	N/A
9. Equal Series Present Worth Factor (Int = 7%, t = 20 Yrs)	10.594	10.594				
10. Equal Series Present Worth Factor (Int = 7%, t = 10 Yrs)			7.0236	7.0236		
11. Present Worth Factor (Int = 7%, t = 10 Yrs)			0.5083	0.5083		
12. Present Worth Factor (Int = 7%, t = 20 Yrs)					0.2584	0.2584
13. PRESENT WORTH O&M	**$ 11,248,706.88**	N/A	**$ 1,316,056.50**	N/A	**$ 221,086.32**	N/A
14. SALVAGE (See Note 3)	$ -	$ -	$ -	$ -	$ -	$ -
15. PRESENT WORTH SALVAGE	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
GRAND TOTAL PRESENT WORTH OF ALTERNATE (See Note 2)	**$ 19,474,467.88**	N/A	**$ 11,041,197.74**	N/A	**$ 6,768,103.30**	N/A

TOTAL PRESENT WORTH (PRESSURE) =	**$ 37,283,768.92**
TOTAL PRESENT WORTH (GRAVITY) =	N/A

Notes

1. For derivation of O&M costs for Pressure Sewer Alternate, see Appendix D Tables 37-39.
2. Sum of row 7, row 11 and row 13
3. Salvage value is assumed to be zero
4. Gravity sewer will require additional 10% of construction cost for R/W acquisition.



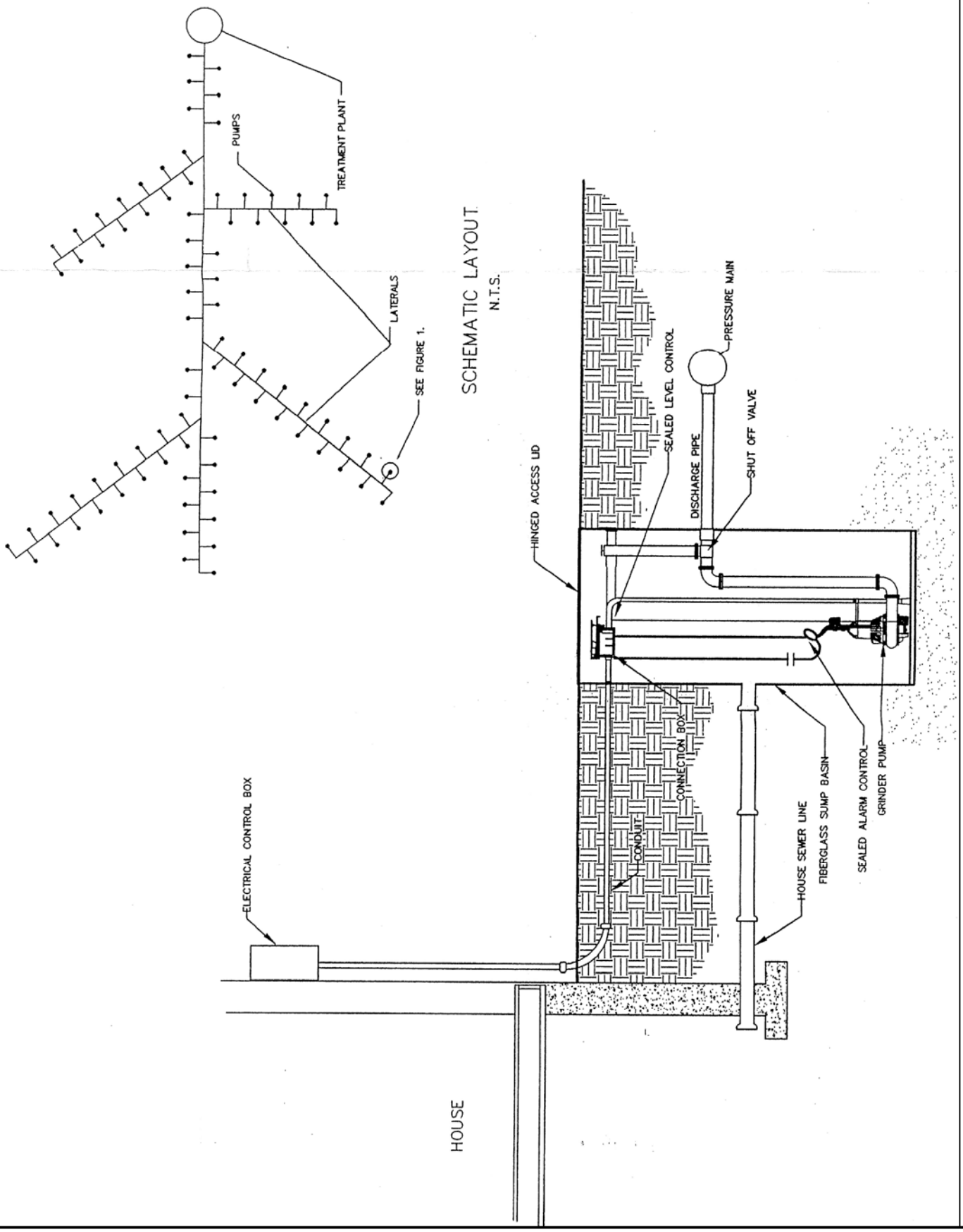
SHEET:	8A-1
OF:	
DATE:	6/8/12
SCALE:	As Noted
DRAWN BY:	BDF
CHECKED:	KH
PROJECT NO.:	12-410

City of Pikeville
118 College Street
Pikeville, KY 41501

Pikeville Wastewater Facilities Plan
Proposed Collection System Map – All Projects

SUMMIT ENGINEERING, INC.
LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

DATE	DESCRIPTION OF REVISION



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City of Pikeville
118 College Street
Pikeville, KY 41501

Pikeville Wastewater Facilities Plan
Typical Pressure Sewer Layout

DATE:	6/19/12
SCALE:	NTS
DRAWN BY:	BDF
CHECKED:	KH
PROJECT NO:	12-410

SHEET: 8A-2
OF:

SECTION 8B
WASTEWATER TREATMENT ALTERNATIVES

8B.01 GENERAL

This section presents alternatives for treatment of the anticipated wastewater flows and loads. Alternatives will be identified and evaluated on a present worth basis (including capital and O & M costs), as well as on a non-monetary basis.

8B.02 TREATMENT OPTIONS

Three treatment options were evaluated. These were:

1. "Do Nothing'
2. Expand existing plant
3. Build a new plant at a new site

The options are described in sections 8B.02.1, 8B.02.2, and 8B.02.3 respectively.

8B.02.1 OPTION 1 – " DO NOTHING"

The do nothing option preserves the status quo and provides no improvements to wastewater treatment systems. Wastewater generated by most of the residents will either be treated with private septic systems or 'straight piped' directly to local streams and watercourses. Larger commercial/business enterprises will continue to rely on private package treatment plants which tend to be poorly operated and maintained. This option will do nothing to improve local water quality or public health and will likely result in a gradual deterioration of surface water quality. This option is contrary to the public good and will not be considered.

8B.02.2 OPTION 2 – EXPAND EXISTING PLANT

This option would endeavor to expand the existing plant facilities. The City has evaluated three plant options for rehabilitating the existing plant (See Section 8B.03) and has decided that the most beneficial approach to increasing capacity is to expand the existing extended aeration WWTP by converting it to a membrane bioreactor system plant (Technology 1). It is projected, by the membrane components supplier, that when reusing the plant's existing clarifier basins as treatment trains, the plant can obtain treatment capacities of 4.0 MGD easily (100% increase in capacity from current plant) and be expandable up to 6 MGD (200% more capacity than current plant) if needed in the future through the addition of more membrane modules.

See **Exhibit 8B-1** for a map depicting the existing site.

8B.02.3 OPTION 3 – BUILD A NEW PLANT AT NEW SITE

Construct a new wastewater treatment plant at a new site with adequate land and access to facilitate ease of construction, maintenance, operation, and expansion throughout the planning period. This option was determined to not be feasible at this time due to lack of a site and funds to undertake an endeavor of this magnitude. This option would require extensive reversal of the existing collection system and construction of more lift stations and transmission lines to convey flow to the new plant.

8B.02.4 OPTION SELECTION

Option two (2), conversion/expansion of the existing plant, is the preferred approach. The "Do Nothing" approach is contrary to public policy and it is too expensive to build a new plant on a new site, as well, a new site is unavailable.

8B.03 WASTEWATER TREATMENT TECHNOLOGIES

According to the draft preliminary engineering report prepared for the City of Pikeville, three (3) treatment technology options were evaluated for conversion of the existing plant. They are as follows:

1. Conversion to a Membrane Bioreactor System
2. Conversion to an Integrated Fixed Film Activated Sludge System
3. Conversion to a Sequencing Batch Reactor System

8B.03.1 TECHNOLOGY 1 – Conversion of the Existing Plant ta Membrane Bioreactor Plant (MBR)

Raw sewage will enter the plant through a flow meter vault. Primary treatment will consist of a fine mechanical screen with a coarse bar screen bypass. An anoxic / pre-equalization basin would follow the screening facility. The existing clarifiers of the extended aeration plant will be converted into the anoxic / pre-equalization basins to handle surge flows. The pre-equalization will be followed by aeration tanks that would provide about 90% or more BOD_5 removal and clarification. At the end of the reactor tanks would be membrane filters used to filter solids, bacteria, and other unwanted dissolved materials. The membranes will be followed by chlorine contact disinfection, post aeration and plant effluent flow metering.

The waste sludge pumps would pump sludge from the aeration tanks to the aerobic digesters. Digester supernatant would be decanted back to the pre-equalization / anoxic tanks. Digested sludge pumps will also pump the digested sludge to the sludge press room where a conventional belt press is proposed for sludge de-watering. A conveyor belt will transport the de-watered sludge cake to a dump truck for 'offsite' disposal.

A process diagram of a typical Membrane Bioreactor Plant is shown in **Exhibit 8B-2.**

8B.03.2 TECHNOLOGY 2 – Conversion of the Existing Plant to an Integrated Fixed-Film Activated Sludge System (IFAS)

Raw sewage will enter the plant through a flow meter vault. Primary treatment will consist of a fine mechanical screen with a coarse bar screen bypass. An onsite pump station would then lift the wastewater into the anoxic/aeration IFAS basins (existing oxidation ditches) and have the ability to discharge excess flow to a surge tank. In the anoxic / aeration zone treatment capacity of the plant will be increased through the addition of fixed media filters. Following the IFAS basins, the existing clarifiers will be used as secondary clarifiers for settling and final removal of solids. The clarifiers will be followed by chlorine contact disinfection, post aeration and plant effluent flow metering.

The new RAS/WAS waste sludge pumps would pump waste sludge from the clarifier to the aerobic digesters for sludge thickening or return sludge to the head of the plant. Digester supernatant would be decanted back to the on-site pump station. Digested sludge will be gravity fed to the sludge press

room where a conventional belt press is proposed for sludge de-watering. A conveyor belt will transport the de-watered sludge cake to a dump truck for 'offsite' disposal.

A process diagram of a typical Integrated Fixed-Film Activated Sludge System Plant is shown in **Exhibit 8B-3.**

8B.03.3 TECHNOLOGY 3 – Conversion of the Existing Plant to a Sequencing Batch Reactor System (SBR)

Raw sewage will enter the plant through a flow meter vault. Primary treatment will consist of a fine mechanical screen with a coarse bar screen bypass. The screen will be followed by sequencing batch reactor tanks that would provide about 90% BOD_5 removal and clarification. Following the reactor tanks would be a post-equalization basin followed by ultraviolet disinfection, post aeration and plant effluent flow metering.

The waste sludge pumps would pump sludge from the reactor tanks to the aerobic digesters. Digester supernatant would be decanted back to the reactor tanks. Digested sludge pumps will also pump the digested sludge to the sludge press room where a conventional belt press is proposed for sludge de-watering. A conveyor belt will transport the de-watered sludge cake to a dump truck for 'offsite' disposal.

A process diagram of a typical Sequencing Batch Reactor Plant is shown in **Exhibit 8B-4.**

8B.03.4 RELIABILITY AND CONTINUED OPERATIONS

The membrane bioreactor, integrated fixed-film activated sludge, and sequencing batch reactor plants are proven wastewater treatment technologies. All systems are capable of handling a wide range of flows and are resistant to system "upset". Each plant conversion option is capable of achieving a treatment capacity of 4.0 MGD. However, the membrane bioreactor option is capable of achieving up to 6.0 MGD through the installation of more filter modules.

8B.01 EVALUATION OF TECHNOLOGY

8B.01.1 INITIAL CONSTRUCTION COST

The estimated initial capital cost of the plant conversion options are shown in Table 8B-1.

TABLE 8B-1
SUMMARY OF PROJECT COSTS OF TREATMENT

PLANNING PERIOD	Technology 1 – Membrane Bioreactor System Plant	Technology 2 – I.F.A.S. System Plant	Technology 3 – S.B.R. System Plant
0-2 Year Period	$24,182,610	$20,522,759	$21,176,248
3-10 Year Period	No Expansion Rqrd.	No Expansion Rqrd.	No Expansion Rqrd.
11-20 Year Period	No Expansion Rqrd.	No Expansion Rqrd.	No Expansion Rqrd.
TOTAL =	**$24,182,610**	**$20,522,759**	**$21,176,248**

8B.01.2 PRESENT WORTH ANALYSIS

The present worth analysis is frequently referred to as a life cycle cost analysis.

The present worth computations are presented in Table 8B-3. The present worth computations rely on the following assumptions:

1. The alternate shall be evaluated over a twenty-year life.
2. The time value of money (interest rate) is 7%.
3. Inflation may be neglected.
4. Salvage values are zero for the existing plant components.
5. Sludge handling will be a regular expenditure

8B.01.3 NON-MONETARY FACTORS

Non-monetary factors are those elements of the treatment process, which cannot be readily quantified, but rather are subjective in nature. The non-monetary factors considered in this study are:

Reliability/Upset Potential – With flow equalization basins, the Membrane Bioreactor plant is considered very reliable and less prone to upset than a plant without flow equalization.

Simplicity - It requires a microprocessor to operate the Membrane Bioreactor plant. A less computerized plant, such as an oxidation ditch, may be simpler to operate.

Familiarity - Eastern Kentucky operators will be more familiar with the oxidation ditch operations than the Membrane Bioreactor.

Flexibility – The Membrane Bioreactor plant is very flexible in terms of operation as well as expandability.

Expandability - The Membrane Bioreactor plant is easily expandable through addition of more membranes.

Odor production - The Membrane Bioreactor plant is comparable to most typical treatment options regarding odor production.

Land Requirements – The Membrane Bioreactor plant can be constructed by using the existing basins at the plant and does not require much "new basin construction" on site as the site is already limited with space.

Table 8B-2 presents the non-monetary factors for all plant technology options. A "positive" sign indicates a favorable rating for the technology option, while a "negative" sign indicates an unfavorable rating for that technology.

Table 8B-2

Non-Monetary Factors for Treatment Alternate

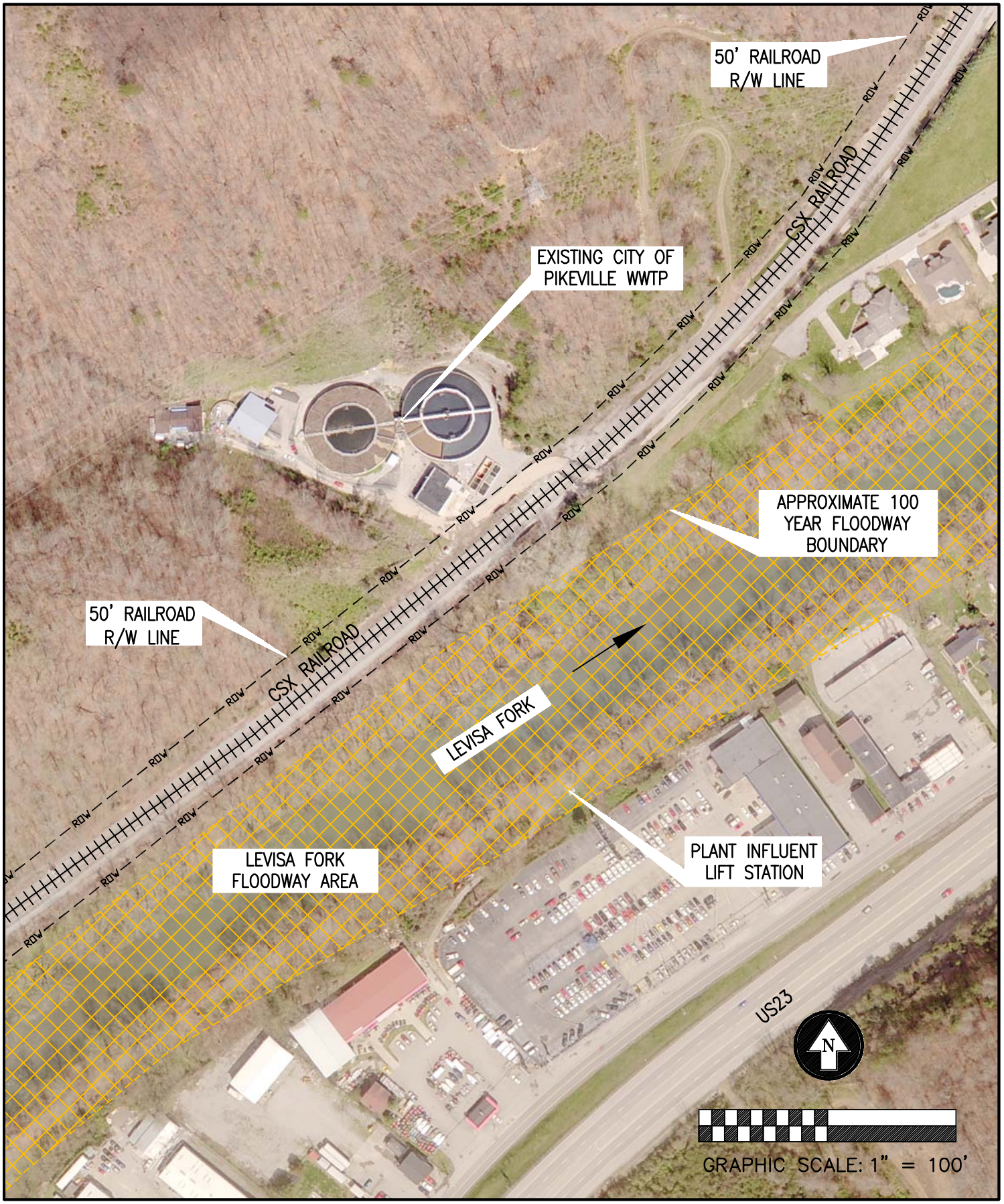
Non-Monetary Factor	TECHNOLOGY		
	Technology 1 – Membrane Bioreactor System Plant	**Technology 2 – I.F.A.S. System Plant**	**Technology 3 – S.B.R. System Plant**
Reliability	+	+	+
Simplicity	-	-	+
Familiarity	-	-	+
Flexibility	+	+	-
Expandability	+	+	-
Odor Production	-	-	-
Land Requirement	+	+	+
TOTAL =	**4**	**4**	**4**

TABLE 8B-3
PRESENT WORTH ANALYSIS OF TREATMENT TECHNOLOGY

ITEM	COST	FACTOR (P/A, 20 YEARS)	PRESENT WORTH
TECHNOLOGY 1 - MEMBRANE BIOREACTOR SYSTEM PLANT			
1. Capital Cost	$24,182,610	1.00	$24,182,610.03
2. Plant O&M (0-20 Year Period) (Full Flow)	$ 1,050,392.00	10.5940	$11,127,852.85
3. Present Worth			**$35,310,462.88**
TECHNOLOGY 2 - INTEGRATED FIXED-FILM ACTIVATED SLUDGE SYSTEM PLANT			
1. Capital Cost	$20,522,759	1.00	$20,522,758.95
2. Plant O&M (0-20 Year Period) (Full Flow)	$ 673,246.00	10.5940	$7,132,368.12
3. Present Worth			**$27,655,127.07**
TECHNOLOGY 3 - SEQUENCING BATCH REACTOR SYSTEM PLANT			
1. Capital Cost	$21,176,248	1.00	$21,176,248.12
2. Plant O&M (0-20 Year Period) (Full Flow)	$ 777,086.00	10.5940	$8,232,449.08
3. Present Worth			**$29,408,697.20**

8B.01.4 SELECTION OF TECHNOLOGY

Based on the evaluations of the treatment technology options above, the preferred treatment technology is the membrane bioreactor technology 1. The MBR technology is slightly more expensive on the initial capital cost and present worth analyses, but based on a non-monetary analysis is comparable to the other treatment technologies evaluated. The MBR is also capable of achieving a maximum treatment capacity of 6.0 MGD as opposed to the 4.0 MGD maximum of the IFAS and SBR options. The additional capacity potential (50% more) makes the MBR the most desirable option.



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Pikeville Wastewater Facilities Plan
Existing Pikeville WWTP

DATE:	6/19/12
SCALE:	1" = 100'
DRAWN BY:	BDF
CHECKED:	KH
PROJECT NO:	12-410

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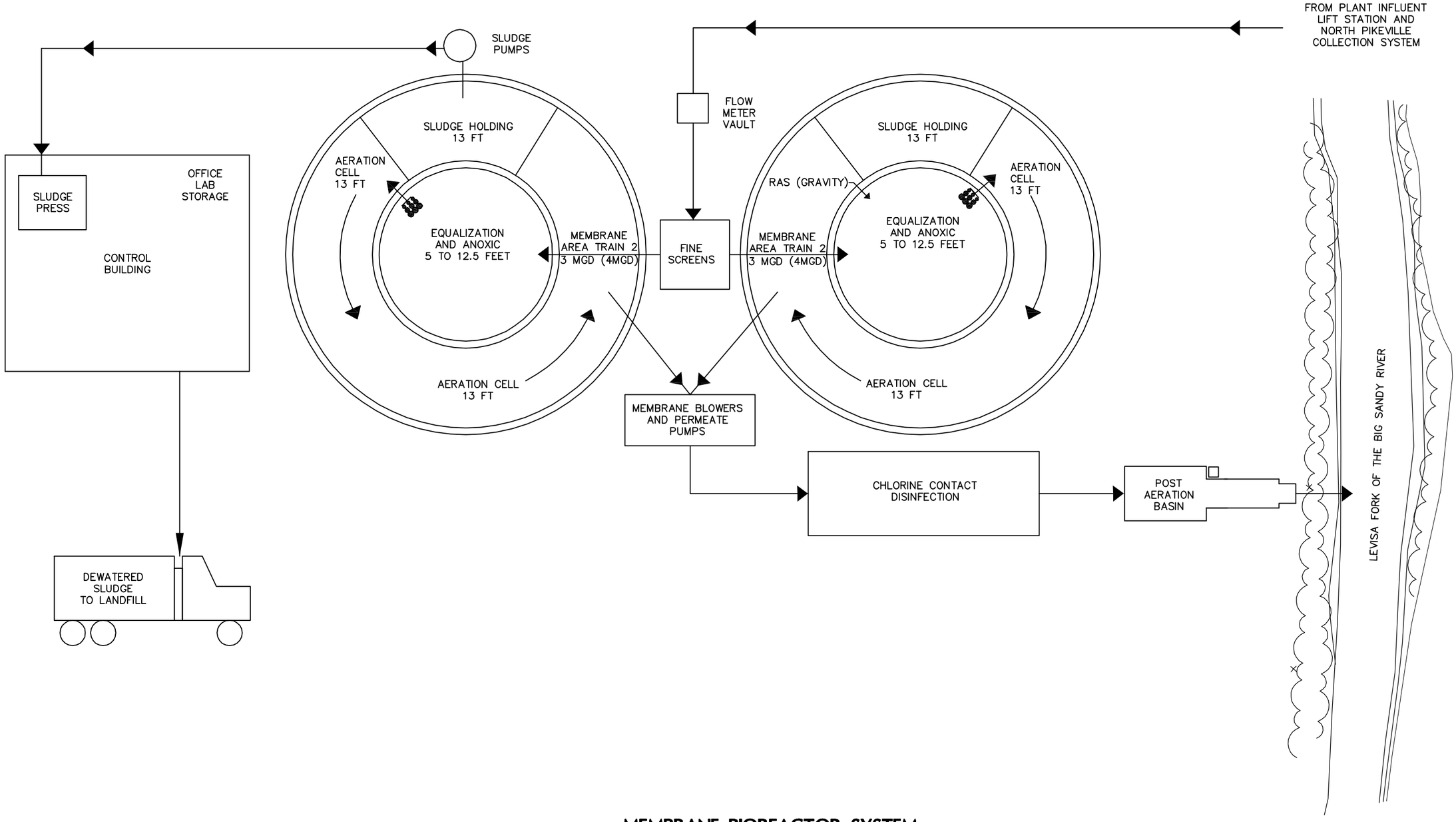
EX 8B-1
OF:



MEMBRANE BIOREACTOR SYSTEM
PLANT FLOW SCHEMATIC

NOT TO SCALE

EXISTING AERATION PLANT CAPACITY = 2.0 MGD

NEW MEMBRANE BIOREACTOR PLANT CAPACITY = 4.0 MGD

DESCRIPTION OF REVISION	DATE

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Pikeville Wastewater Facilities Plan
Process Schematic – Membrane Bioreactor Type Treatment Plant

DATE:	6/19/12
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DRAWN BY:	BF
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PROJECT NO:	12-410

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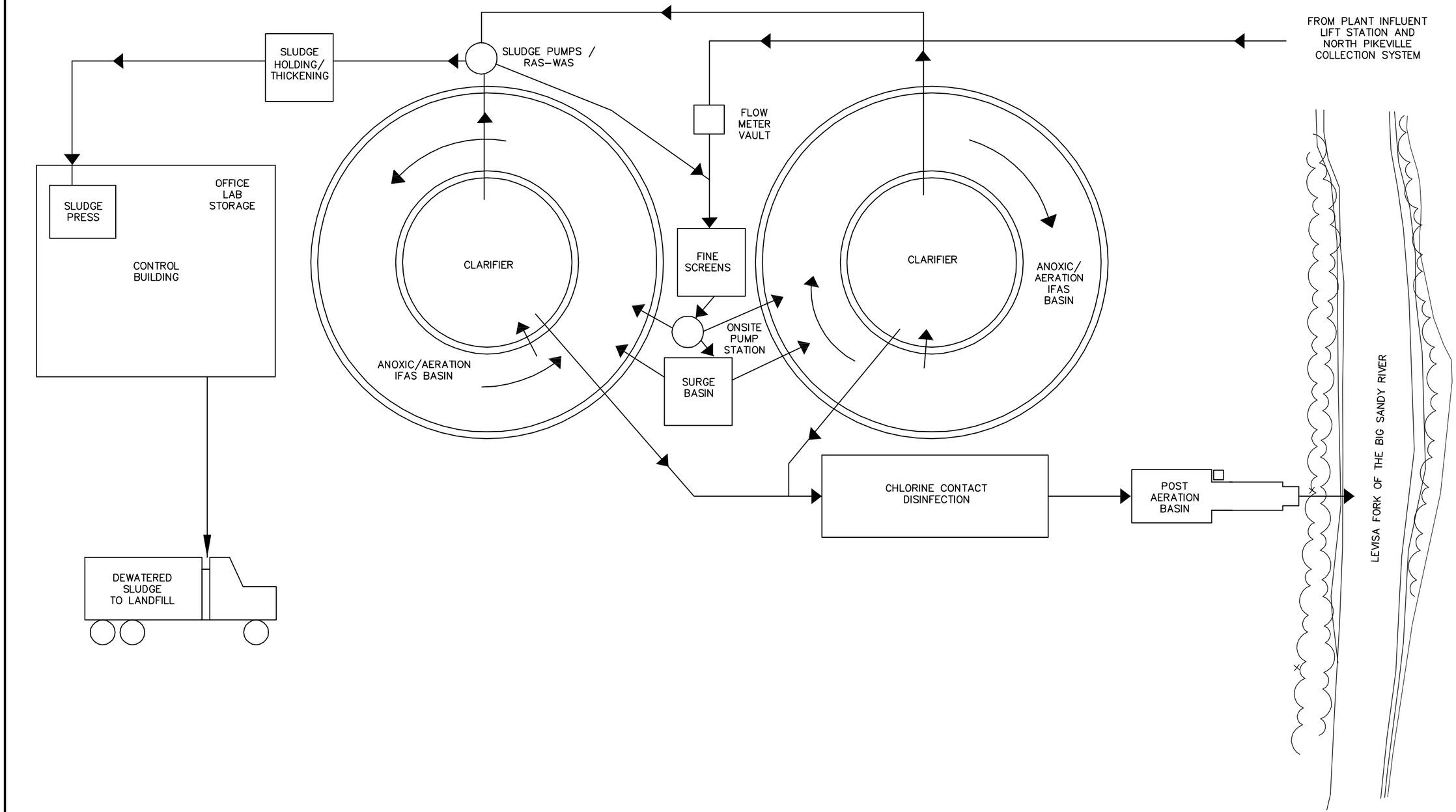

INTEGRATED FIXED–FILM ACTIVATED SLUDGE SYSTEM
PLANT FLOW SCHEMATIC

NOT TO SCALE

EXISTING AERATION PLANT
CAPACITY = 2.0 MGD

NEW LF.A.S. PLANT
CAPACITY = 4.0 MGD

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Pikeville Wastewater Facilities Plan
Process Schematic – LF.A.S. Type Treatment Plant

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PROJECT NO:	12–410

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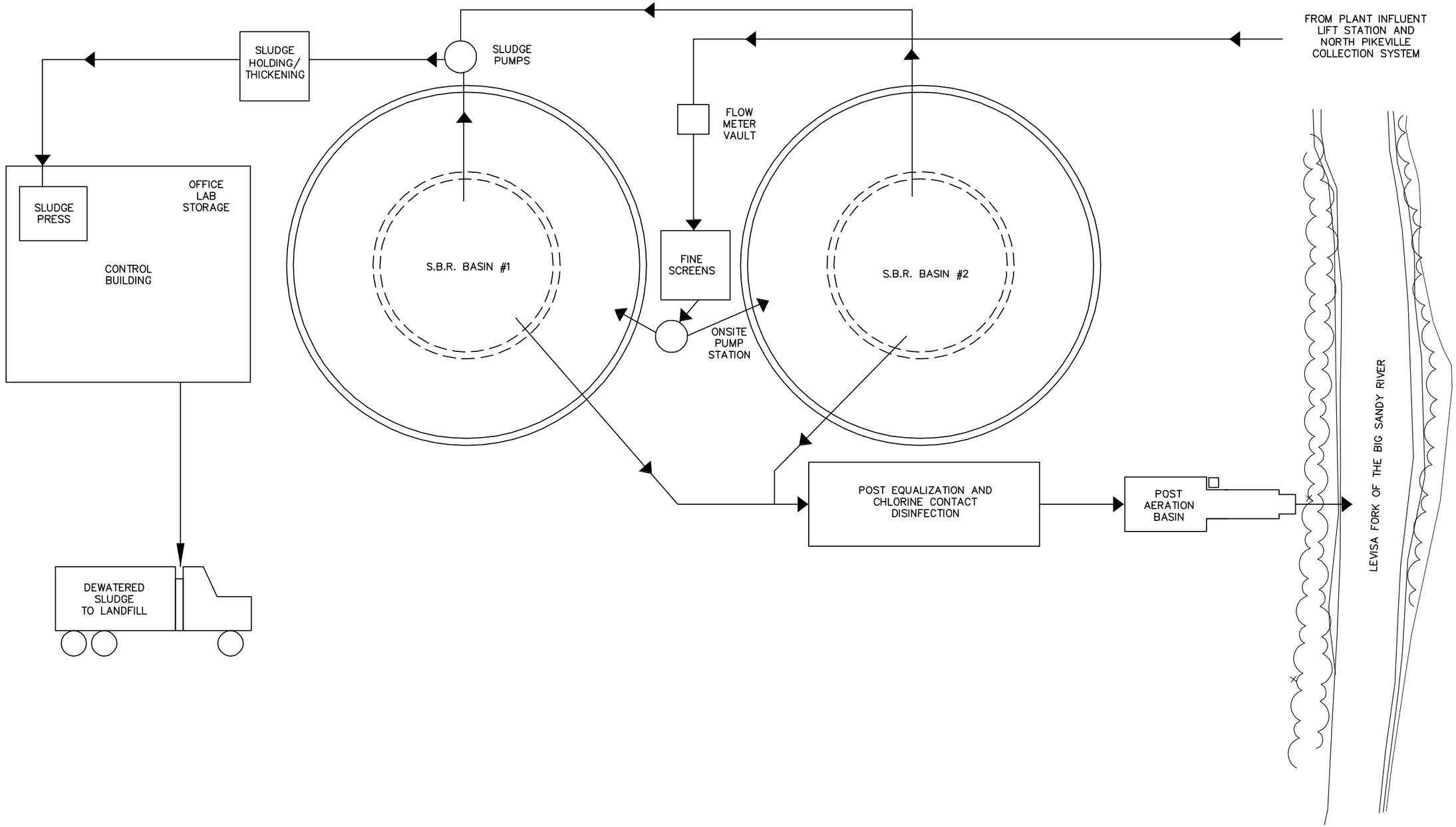
Ex. 8B–3

OF:



SEQUENCING BATCH REACTOR SYSTEM
PLANT FLOW SCHEMATIC

NOT TO SCALE

EXISTING AERATION PLANT CAPACITY = 2.0 MGD

NEW S.B.R. PLANT CAPACITY = 4.0 MGD

DESCRIPTION OF REVISION	DATE

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Pikeville Wastewater Facilities Plan
Process Schematic – S.B.R. Type Treatment Plant

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SHEET:

Ex. 8B-4

OF:

SECTION 8C
SELECTED ALTERNATE

8C.01 GENERAL

This section will describe the recommended plan, discuss options for project financing, identify the financial burden imposed on system customers, and outline a plan for implementing the selected alternates.

8C.02 DESCRIPTION OF RECOMMENDED PLAN

Per the analyses presented in Section 8A for collector sewers and in Section 8B for treatment, the recommended plan for the collection, conveyance, and treatment of wastewater in the Planning Area is a phased extension of a pressure sewer system and conversion of the existing plant into a membrane bioreactor plant. The following paragraphs describe in more detail the proposed phasing and implementation of the recommended plan. See Appendix D for cost opinions and Exhibits for the selected plan. See Table 8A-1 for a summary of the proposed lift stations for the selected plan.

8C.02.1 0-2 YEAR PLANNING PERIOD PROJECTS

The 0-2 year planning period is comprised of four (4) contracts. All flows will be treated at the Pikeville WWTP. The ultimate flow contribution from the 0-2 year planning period projects is projected to be 1,997,568 gpd. The 0-2 year planning period projects are depicted in **Exhibit 8A-1**. The contracts are as follows:

Contract 1: Foxcroft/Yorktown/Buckley's Creek/Whayne Supply – This contract consists of the construction of various small pressure sewer line extensions to provide service to +/-212 equivalent persons (21,216 GPD) located within the City of Pikeville Corporate Limits.

See Table 1 and Area 1 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 2: Expand Existing Pikeville WWTP – Consists of the conversion of the existing 2.0 MGD extended aeration plant into a 4.0 MGD membrane bioreactor plant at the same site.

See **Exhibit 8B-1** for a process schematic for the proposed plant. See **Exhibit 8B-2** for an aerial exhibit of the existing plant site.

See Table 40 of Appendix D for the opinion of probable project cost for the plant. Opinion of probable operation and maintenance costs for the plant can be found in Table 41 of Appendix D.

Contract 3: Marion Branch Development Phase 1 – This contract consists of the construction of a combination of gravity and pressure sewers to serve the phase 1 development at Marion Branch. This phase will provide service to a potential 1,414 equivalent persons (141,440 GPD)

See Table 3 and Area 3 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 4: Miscellaneous Lift Station Upgrades – This contract consists of the rehabilitation of various mainline lift stations within the existing collection system. Work includes replacement of all pumps and controls, installation of odor control, backup power, telemetry, and increased wet

well storage. This project will not add any new customers to this system. This is simply a system improvement project.

See Table 4 and Area 4 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

8C.02.2 3-10 YEAR PLANNING PERIOD PROJECTS

The 3-10 year planning period is comprised of six (6) contracts. The sewer user base consists of primarily residential and small business users with more development at the Marion Branch Site. The ultimate flow contribution from the 3-10 year planning period projects is projected to be 446,624 gpd. The 3-10 year planning period projects are depicted in **Exhibit 8A-1**. The contracts are as follows:

Contract 5: Wagner Station/Kinnikinnick/Blairtown/Mullins Hill – This contract consists of the construction of various small pressure sewer line extensions to provide service to +/-593 equivalent persons (59,296 GPD) throughout the northern end of the Planning Area.

See Table 5 and Area 5 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 6: Marion Branch Development Phase 2 – This contract consists of the construction of a combination of gravity and pressure sewers to serve the phase 2 development at Marion Branch. This phase will provide service to a potential 1,197 equivalent persons (119,680 GPD)

See Table 6 and Area 6 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 7: Broad Bottom – This contract consists of the construction of a pressure sewer extension to provide service to a potential 653 equivalent persons (65,280 GPD) in the area known as Broad Bottom off US23 at the northern end of the planning area.

See Table 7 and Area 7 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 8: Right Fork of Island Creek/Coon Branch/Kati Street – This contract consists of the construction of a pressure sewer extension to provide service to a potential 1,023 equivalent persons (102,272 GPD). Project will be an extension from the existing Island Creek Sewer System.

See Table 8 and Area 8 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 9: Deskins and Potter Development Sites/Coal Run Hill – This contract consists of the construction of a combination of gravity and pressure sewer extensions to provide service to a potential 631 equivalent persons (63,104 GPD). The developments are within the City of Pikeville Corporate Limits, but Coal Run Hill is not.

See Table 9 and Area 9 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 10: Marion Branch Development Phase 3 – This contract consists of the construction of a combination of gravity and pressure sewers to serve the phase 3 development at Marion Branch. This phase will provide service to a potential 370 equivalent persons (36,992 GPD)

See Table 10 and Area 10 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

8C.02.3 11-20 YEAR PLANNING PERIOD PROJECTS

The 3-10 year planning period is comprised of seven (7) contracts. The sewer user base consists of primarily residential and small business users. The ultimate flow contribution from the 11-20 year planning period projects is projected to be 581,536 gpd. The 11-20 year planning period projects are depicted in **Exhibit 8A-1**. The contracts are as follows:

Contract 11: Left Fork of Island Creek/Road Fork – This contract consists of the construction of a pressure sewer extension to provide service to a potential 816 equivalent persons (81,600 GPD). Project will be an extension from the existing Island Creek Sewer System.

See Table 11 and Area 11 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 12: Boldman Bottom – This contract consists of the construction of a combination of gravity and pressure sewer extensions to provide service to a potential 413 equivalent persons (41,344 GPD) in the area known as Boldman Bottom off US23 at the northern end of the planning area.

See Table 12 and Area 12 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 13: Ratliff Creek – This contract consists of the construction of a pressure sewer extension to provide service to a potential 1,229 equivalent persons (122,944 GPD) in the area known as Ratliff Creek off US23 near downtown Pikeville.

See Table 13 and Area 13 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 14: Stonecoal Road – This contract consists of the construction of a pressure sewer extension to provide service to a potential 1,034 equivalent persons (103,360 GPD) in the area known as Stonecoal off US23 near Coal Run in the central part of the Planning Area.

See Table 14 and Area 14 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 15: Miscellaneous Sewer System Upgrades – This contract consists of the rehabilitation of various mainline lift stations within the existing collection system. Work includes replacement of all pumps and controls, installation of odor control, backup power, telemetry, and increased wet well storage. This project will also replace various portions of aged sewer lines within the existing system. The project will not add any new customers to this system. This is simply a system improvement project.

See Table 15 and Area 15 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 16: Hurricane Creek Phase 1 – Lower – This contract consists of the construction of a pressure sewer extension from the Boldman Bottom project to provide service to a potential 1,311 equivalent persons (131,104 GPD) in the area known as Hurricane Creek at the northern most end of the Planning Area.

See Table 16 and Area 16 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

Contract 17: Hurricane Creek Phase 2 – Upper – This contract consists of the construction of a pressure sewer extension from the Phase 1 Hurricane Creek project to provide service to a potential 1,012 equivalent persons (101,184 GPD) in the area known as Hurricane Creek at the northern most end of the Planning Area.

See Table 17 and Area 17 Exhibit in Appendix D for the opinion of probable construction cost and project exhibit.

8C.03 FINANCIAL REQUIREMENTS

Project Cost

The capital requirements and phasing of the selected plan (0-2 Year) are summarized in Table 8C-1 of Section 8C. The estimated project costs for the 0-2 year collection system and treatment works are $8,225,761 and $24,182,610 respectively for a total 0-2 year project cost of $32,408,371.

Funding Plan (0-2 Year Planning Period)

See Section 10, Table 10-1.

Operation and Maintenance Costs

Table 8C-2 summarizes the estimated operation and maintenance costs for the selected conveyance and treatment alternatives.

Proposed Sewer Rates

Table 8C-3 summarizes the estimated annual operation and maintenance costs as well as the anticipated debt service payback requirements based on the proposed funding plan (See Section 10). Based on the total projected annual expenses the minimum recommended charge(s) per 1,000 gallons of wastewater generated was determined and average monthly bills estimated for the new sewer customers. A summary of the rates is as follows:

In City Customers: Flat rate of $7.96 per 1,000 gallons
Out of City Customers: Flat rate of $15.92 per 1,000 gallons

The sewer rates assume the following initial equivalent populations:

Existing Equivalent Population of Pikeville:	18,349 persons
New Equivalent Population Added by Projects:	1,626 persons
Total Equivalent Population:	**19,975 persons**

The rate for first 2,000 gallons (minimum bill) will be established during 0-2 year project design and implementation period.

Average Monthly Bills (based on "flat rate"):

In City	**Out of City**
2,000 Gallons = $15.92	2,000 Gallons = $31.83
4,000 Gallons = $31.83	4,000 Gallons = $63.66
6,000 Gallons = $47.75	6,000 Gallons = $95.49

Sewer Revenues and Operations Budget

Table 8C-4 summarizes the estimated sewer revenues to be generated by the selected plan based on the recommended sewer rate per 1,000 gallons of wastewater calculated in Table 8C-3. It is assumed that 100% signups (sewer hookups) will not be received when the contracts are constructed. Therefore, project sewer revenues were determined based on 64% of the estimated flows as the 36% balance is made up by I&I, reuse, and lack of user signups during construction, to produce a more conservative estimation of sewer revenues.

Based on the proposed sewer rates, the 0-2 year period projects are anticipated to generate a total revenue of $3,447,447. Based on the total projected annual O&M and debt service costs and the 0-2 year revenues, the City of Pikeville would operate with a debt service pay back ratio of 1.2 in the initial project years.

Table 8C-1
Summary of Estimated Project Costs for Selected Plan (0-10 Year)

AREA #	PRESSURE SEWER SYSTEMS SERVICE AREA	PHASE 0-2 YEAR	PHASE 3-10 YEAR
0	Existing City of Pikeville Sewer Population	N/A	
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	$ 905,644.67	
2	Expand Existing Pikeville WWTP	See Plant Estimate	
3	Marion Branch Development - Phase 1	$ 2,743,251.00	
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	$ 1,834,945.00	
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill		$ 1,250,091.00
6	Marion Branch Development - Phase 2		$ 2,607,822.67
7	Broad Bottom		$ 1,754,636.00
8	Right Fork of Island Creek / Coon Branch / Kati Street		$ 2,324,968.00
9	Deskins and Potter Development Sites / Coal Run Hill		$ 2,544,152.00
10	Marion Branch Development - Phase 3		$ 2,273,450.33
	SUBTOTAL CONSTRUCTION	**$ 5,483,840.67**	**$ 12,755,120.00**
	SUBTOTAL PROJECT COST	**$ 8,225,761.00**	**$ 19,132,680.00**
	TREATMENT ALTERNATE 1		
	MEMBRANE BIOREACTOR WWTP		
	SUB-TOTAL PROJECT COST	**$24,182,610.03**	**$0**
	GRAND TOTAL - CAPITAL REQ'D	**$ 32,408,371.03**	**$ 19,132,680.00**

Notes:

1. Project costs include 15% contingency for construction and 35% for legal, right of way and engineering. For additional information refer to Tables8A-3 and 8A-4.

Table 8C-2

Summary of O&M Costs for Selected Plan (0-10 Year)

PRESSURE SEWER SYSTEM	
Planning Period	**O&M Cost**
0-2 Year	$1,061,800
3-10 Year	$368,633
Total =	**$1,430,433**
MEMBRANE BIOREACTOR PLANT	
Planning Period	**O&M Cost**
0-20 Year	$1,050,392
Total =	**$1,050,392**
PROBABLE O&M COST =	**$2,480,825**

Table 8C-3
Estimated Operating Budget for 0-2 Year Period

OPERATING EXPENSES		
0-2 Year Collection System O& M	- $	1,061,799.78
0-2 Year Treatment O & M	- $	1,050,392.00
Net O&M =	- **$**	**2,112,191.78**

DEBT REPAYMENT

** See Table 10-1 for Full Funding Plan **

LOAN DESCRIPTION	AMOUNT		RATE (%)	LOAN PERIOD (Yrs)	ANNUAL PAYMENT
RD Loan - Proposed	$ 13,585,859.72		2.875%	40	$575,939.27
KIA Loan - Proposed	$ 1,000,000.00		1.002%	20	$55,426.47
Existing Pikeville Debt from Past Projects	$ 3,887,895.00		Range From 1.8% to 2.5%	20-40 Years	$200,465.00
TOTALS	**$14,585,859.72**				**$831,830.75**

Total Annual Debt Payment Services =	-	$831,830.75
Total Annual O&M Costs =	- $	2,112,191.78
Total Annual Costs =		**$2,944,022.53**

Total Annual 0-2 Year Flows (in 1000's) =		443,946	(Note 1)
Total Annual Costs Per 1,000 Gallons (In Pikeville City Limits) =	$	6.63	(Note 2)
Total Annual Costs Per 1,000 Gallons (All Other Customers) =	$	13.26	(Note 2)
Minimum Recommended Charge Per 1,000 Gallons (In Pikeville City Limits) =	$	7.96	(Note 3)
Minimum Recommended Charge Per 1,000 Gallons (All Other Customers) =	$	15.92	(Note 3)

	2,000 Gallons	4,000 Gallons	6,000 Gallons
Average Estimated Monthly Sewer Costs per Customer (In Pikeville City Limits) =	$ 15.92	$ 31.83	$ 47.75
Average Estimated Monthly Sewer Costs per Customer (All Other Customers) =	$ 31.83	$ 63.66	$ 95.49

Notes:

1. Assumes only 64% of estimated flows are received for conservancy! Also assumes only 50% buildout of Marion Branch Development. The 36% balance is I&I and future growth per Vaughn and Melton powerpoint presentation to City Council.
2. Total Annual Cost Per 1,000 Gal. = Total Annual Costs / Total Annual 0-2 Year Flows (in 1,000's)
   *Assumes Pikeville City Customers pay 50% less than all other customers.
3. Min. Reccommended Charge Per 1,000 Gal. = Total Annual Costs Per 1,000 Gallons * Recommended Payback Ratio of 1.2
   *Assumes Pikeville City Customers pay 50% less than all other customers.

Table 8C-4
Summary of Potential Sewer Use Revenues (Based on Proposed Sewer Rates)

Area #	SERVICE AREA	Population Equivalent (Note 2)	Total Avg. Daily Flow (gpd)	MONTHLY REVENUES BY PHASE		
				0-2 Year	3-10 Year	11-20 Year
	Existing City of Pikeville Sewer Population	18,349	1,834,912	$ 438,055		
1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	212	21,216	$ 5,065		
2	Expand Existing Pikeville WWTP	0	0	$ -		
3	Marion Branch Development - Phase 1	1414	70,720	$ 16,883		
4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	0	0	$ -		
5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	593	59,296		$ 28,312	
6	Marion Branch Development - Phase 2	1197	119,680		$ 28,572	
7	Broad Bottom	653	65,280		$ 31,169	
8	Right Fork of Island Creek / Coon Branch / Kati Street	1023	102,272		$ 48,832	
9	Deskins and Potter Development Sites / Coal Run Hill	631	63,104		$ 15,065	
10	Marion Branch Development - Phase 3	370	36,992		$ 8,831	
11	Left Fork of Island Creek / Road Fork	816	81,600			$ 38,961
12	Boldman Bottom	413	41,344			$ 19,740
13	Ratliff Creek	1229	122,944			$ 58,702
14	Stonecoal Road	1034	103,360			$ 49,351
15	Miscellaneous Sewer System Upgrades	0	0			$ -
16	Hurricane Creek - Phase I - Lower	1311	131,104			$ 62,598
17	Hurricane Creek - Phase 2 - Upper	1012	101,184			$ 48,312
	PROBABLE MONTHLY REVENUES =	**30,257**	**2,955,008**	**460,004**	**160,780**	**277,664**
	PROBABLE ANNUAL REVENUES @ 100% OF ESTIMATED FLOWS =			**$ 5,520,042.24**	**$ 1,929,365.41**	**$ 3,331,973.55**
	PROBABLE ANNUAL REVENUES @ 64% OF ESTIMATED FLOWS (Note 3)=			**$ 3,532,827.04**	**$ 1,234,793.87**	**$ 2,132,463.07**
	PROBABLE TOTAL ANNUAL REVENUE AT ULTIMATE BUILDOUT (ASSUME @ 75% FLOW) =					**$ 6,900,083.97**

NOTES

1. Revenue calculator above uses the recommended flat rate per 1,000 gallons as derived in Table 8C-3.
2. Equivalent Population for Area 3,6,10 assumes only 50% buildout of Developments. Flow number was reduced to make this analysis more conservative.
3. Assumes only 75% of estimated flows are received for conservancy when calculating estimated revenues!

SECTION 9
CROSS-CUTTER CORRESPONDENCE AND MITIGATION

9.01 CORRESPONENCE

Cross cutter correspondence letters were prepared and sent to the following public entities to put them on notice as to the preparation of this 201 facilities plan:

- United States Fish and Wildlife Service
- Kentucky Department of Fish and Wildlife Resources
- Kentucky Heritage Council
- United States Corps of Engineers
- Natural Resources Conservation Service

The letters sent to, and the responses obtained from, each entity are attached hereto in the following pages for reference.

SUMMIT ENGINEERING, INC.

June 7, 2012

ATTN: SUPERVISOR
Natural Resources Conservation Service
771 Corporate Drive, Suite 210
Lexington, Kentucky 40503

Re: Pikeville Wastewater Facilities Plan *12-410*
Pike County, Kentucky

Dear Ladies and Gentlemen:

The Municipal Planning Section of the Facilities Construction Branch, Division of Water, will be receiving a Wastewater Facilities Planning document whose purpose is described as follows:

> To evaluate the existing wastewater collection, conveyance and treatment system of the City of Pikeville and evaluate the future needs of the system over the next 20-year period within the planning area on **Exhibit '3-2'** attached hereto. The current report is simply a planning study to forecast flows and loads and determine future sewer service areas. There is no physical construction project associated with this study at this time. When the construction projects recommended by this study are under design, they will be submitted to the necessary public entities for review, comment, and permit (if required), prior to construction.

Please provide us with written comments or concerns you may have regarding this study and the potential sewer projects it may propose. This study will result in an improvement in water quality in the local area. If we do not hear from you in thirty days, we will assume you have no comments. See the attached **Exhibit '3-2'** for a general location map of the proposed wastewater planning area.

Please feel free to give me a call if you have any questions or need additional information. I can be reached at 859-264-9860 ext 312.

Sincerely,

Brett Fisher, P.E.
Project Engineer

CC: Anshu Singh – Kentucky Division of Water
File

SUMMIT ENGINEERING, INC.

June 7, 2012

ATTN; SUPERVISOR
Kentucky Department of Fish & Wildlife Resources
#1 Sportsman Lane
Frankfort, Kentucky 40601

Re: Pikeville Wastewater Facilities Plan *12-410*
Pike County, Kentucky

Dear Ladies and Gentlemen:

The Municipal Planning Section of the Facilities Construction Branch, Division of Water, will be receiving a Wastewater Facilities Planning document whose purpose is described as follows:

> To evaluate the existing wastewater collection, conveyance and treatment system of the City of Pikeville and evaluate the future needs of the system over the next 20-year period within the planning area on **Exhibit '3-2'** attached hereto. The current report is simply a planning study to forecast flows and loads and determine future sewer service areas. There is no physical construction project associated with this study at this time. When the construction projects recommended by this study are under design, they will be submitted to the necessary public entities for review, comment, and permit (if required), prior to construction.

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Please feel free to give me a call if you have any questions or need additional information. I can be reached at 859-264-9860 ext 312.

Sincerely,

Brett Fisher, P.E.
Project Engineer

CC: Anshu Singh – Kentucky Division of Water
File

120 PROSPEROUS PLACE, SUITE 101, LEXINGTON, KY 40509 859-264-9860 FAX 859-264-9106

SUMMIT ENGINEERING, INC.

June 7, 2012

Attn: Supervisor
Kentucky Heritage Council
300 Washington Street
Frankfort, Kentucky 40601

Re: Pikeville Wastewater Facilities Plan *12-410*
Pike County, Kentucky

Dear Ladies and Gentlemen:

The Municipal Planning Section of the Facilities Construction Branch, Division of Water, will be receiving a Wastewater Facilities Planning document whose purpose is described as follows:

> To evaluate the existing wastewater collection, conveyance and treatment system of the City of Pikeville and evaluate the future needs of the system over the next 20-year period within the planning area on **Exhibit '3-2'** attached hereto. The current report is simply a planning study to forecast flows and loads and determine future sewer service areas. There is no physical construction project associated with this study at this time. When the construction projects recommended by this study are under design, they will be submitted to the necessary public entities for review, comment, and permit (if required), prior to construction.

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Please feel free to give me a call if you have any questions or need additional information. I can be reached at 859-264-9860 ext 312.

Sincerely,

Brett Fisher, P.E.
Project Engineer

CC: Anshu Singh – Kentucky Division of Water
File

120 PROSPEROUS PLACE, SUITE 101, LEXINGTON, KY 40509 859-264-9860 FAX 859-264-9106

SUMMIT ENGINEERING, INC.

June 18, 2012

Attn: Supervisor
U.S. Fish & Wildlife Service
330 West Broadway, Suite 265
Frankfort, KY 40601

Re: Pikeville Wastewater Facilities Plan *12-410*
Pike County, Kentucky

Dear Ladies and Gentlemen:

The Municipal Planning Section of the Facilities Construction Branch, Division of Water, will be receiving a Wastewater Facilities Planning document whose purpose is described as follows:

> To evaluate the existing wastewater collection, conveyance and treatment system of the City of Pikeville and evaluate the future needs of the system over the next 20-year period within the planning area on **Exhibit '3-2'** attached hereto. The current report is simply a planning study to forecast flows and loads and determine future sewer service areas. There is no physical construction project associated with this study at this time. When the construction projects recommended by this study are under design, they will be submitted to the necessary public entities for review, comment, and permit (if required), prior to construction.

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Sincerely,

Brett Fisher, P.E.
Project Engineer

CC: Anshu Singh – Kentucky Division of Water
File

120 PROSPEROUS PLACE, SUITE 101, LEXINGTON, KY 40509 859-264-9860 FAX 859-264-9106

SUMMIT ENGINEERING, INC.

June 7, 2012

ATTN: SUPERVISOR
U.S. Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, West Virginia 25701

Re: Pikeville Wastewater Facilities Plan *12-410*
Pike County, Kentucky

Dear Ladies and Gentlemen:

The Municipal Planning Section of the Facilities Construction Branch, Division of Water, will be receiving a Wastewater Facilities Planning document whose purpose is described as follows:

> To evaluate the existing wastewater collection, conveyance and treatment system of the City of Pikeville and evaluate the future needs of the system over the next 20-year period within the planning area on **Exhibit '3-2'** attached hereto. The current report is simply a planning study to forecast flows and loads and determine future sewer service areas. There is no physical construction project associated with this study at this time. When the construction projects recommended by this study are under design, they will be submitted to the necessary public entities for review, comment, and permit (if required), prior to construction.

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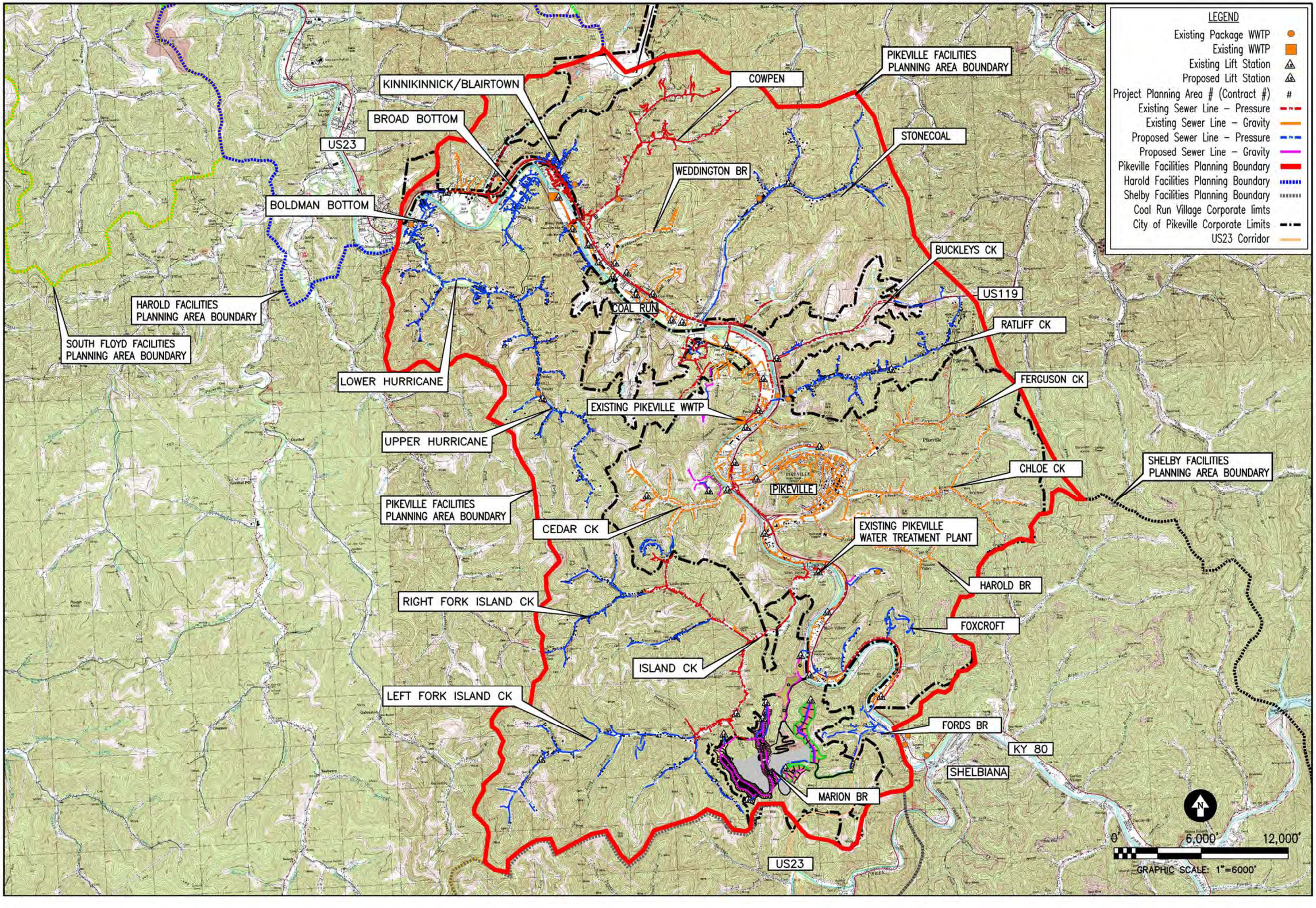
Please feel free to give me a call if you have any questions or need additional information. I can be reached at 859-264-9860 ext 312.

Sincerely,

Brett Fisher, P.E.
Project Engineer

CC: Anshu Singh – Kentucky Division of Water
File

120 PROSPEROUS PLACE, SUITE 101, LEXINGTON, KY 40509 859-264-9860 FAX 859-264-9106



DESCRIPTION OF REVISION

DATE

SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PADUCAH, KY
HAZARD, KY
CHARLESTON, WV
IRONTON, OH
BRISTOL, VA

City of Pikeville
118 College Street
Pikeville, KY 41501

Pikeville Wastewater Facilities Plan
Planning Area Map

DATE:	4/25/12
SCALE:	As Noted
DRAWN BY:	BF
CHECKED:	KH
PROJECT NO:	12-410

SHEET:

EX 3-2

OF:

Brett Fisher

From: James_Gruhala@fws.gov
Sent: Tuesday, June 26, 2012 9:11 AM
To: bfisher@summit-engr.com
Cc: Teresa_Welch@fws.gov
Subject: Re: FWS 2012-B-0652; Summit Engineering, Inc., Pikeville Wastewater Facilities Plan, located in Pike County, Kentucky

Mr. Brett Fisher, P.E.
Project Engineer
Summit Engineering, Inc.
120 Prosperous Place, Suite 101
Lexington, Kentucky 40509

Re: FWS 2012-B-0652; Summit Engineering, Inc., Pikeville Wastewater Facilities Plan, located in Pike County, Kentucky

Dear Mr. Fisher:

The U.S. Fish and Wildlife Service (Service) has reviewed your correspondence of June 18, 2012 regarding the above-referenced project. The Service appreciates the opportunity to provide input during the planning stages for the proposed project. The Service offers the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq*.). This is not a concurrence letter. Please read carefully, as further consultation with the Service may be required.

In accordance with provisions of the Fish and Wildlife Coordination Act, the Service has reviewed the projects with regards to the effects the proposed actions may have on wetlands and/or other jurisdictional waters. We recommend that project plans be developed to avoid impacting wetland areas and/or streams, and reserve the right to review any required federal or state permits at the time of public notice issuance. The U.S. Army Corps of Engineers should be contacted to assist you in determining if wetlands or other jurisdictional waters are present or if a permit is required.

In order to assist you in determining if the proposed project has the potential to impact protected species we have searched our records for occurrences of listed species within the vicinity of the proposed project. Based upon the information provided to us and according to our databases, we believe that the Indiana bat (*Myotis sodalis*) is the only federally listed species that has the potential to occur within the project vicinity. We must advise you that collection records available to the Service may not be all-inclusive. Our database is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitats and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality.

Indiana bat

Summer roost habitat for the endangered Indiana bat may exist within the proposed project site. Based on this information, we believe that: (1) forested areas in the vicinity of and on the project area may provide potentially suitable summer roosting and foraging habitat for the Indiana bat. Our belief that potentially suitable habitat may be present is based on the information provided in your correspondence, the fact that much of the project site and/or surrounding areas contain forested habitats that are within the natural range of this species, and our knowledge of the life history characteristics of the species.

The Indiana bat utilizes a wide array of forested habitats, including riparian forests, bottomlands, and uplands for both summer foraging and roosting habitat. Indiana bats typically roost under exfoliating bark, in cavities of dead and live trees, and in snags (*i.e.*, dead trees or dead portions of live trees). Trees in excess of 16 inches diameter at breast height (DBH) are considered optimal for maternity colony roosts, but trees in excess of 9 inches DBH appear to provide suitable maternity roosting habitat. Male Indiana bats have been observed roosting in trees as small as 5 inches DBH.

Prior to hibernation, Indiana bats utilize the forest habitat around the hibernacula (*i.e.* cave), where they feed and roost until temperatures drop to a point that forces them into hibernation. This "swarming" period is dependent upon weather conditions and may last from about September 15 to about November 15. This is a critical time for Indiana bats, since they are acquiring additional fat reserves and mating prior to hibernation. Research has shown that bats exhibiting this "swarming" behavior will range up to five miles from chosen hibernacula during this time. For hibernation, the Indiana bat prefers limestone caves, sandstone rockshelters, and abandoned underground mines with stable temperatures of 39 to 46 degrees F and humidity above 74 percent but below saturation.
Because we have concerns relating to the Indiana bat on this project and due to the lack of occurrence information available on this species relative to the proposed project area, we have the following recommendation relative to Indiana bats.

- We recommend that the project proponent only remove trees within the project area between October 15 and March 31 in order to avoid impacting summer roosting Indiana bats.

However, if this recommendation cannot be incorporated as a project condition, then the project area may be surveyed to determine the presence or absence of this species within the project area in an effort to determine if potential impacts to the Indiana bat are likely. A qualified biologist who holds the appropriate collection permits for the Indiana bat must undertake such surveys, and we would appreciate the opportunity to approve the biologist's survey plan prior to the survey being undertaken and to review all survey results, both positive and negative. If any Indiana bats are identified, we would request written notification of such occurrence(s) and further coordination and consultation.

If your project schedule requires the clearing of potential Indiana bat habitat (*i.e.*, trees that are greater than 5 inches DBH and exhibit any of the following characteristics: exfoliating bark, cracks, crevices, dead portions, cavities, broken limbs) during the period of April 1 to October 14, you have two primary options for addressing impacts to Indiana bats. First, you can survey the project site as described previously, or you can enter into a Conservation Memorandum of Agreement (MOA) with the Service. By entering into a Conservation MOA with the Service, Cooperators gain flexibility in project timing with regard to the removal of suitable Indiana bat habitat. In exchange for this flexibility, the Cooperator provides recovery-focused conservation benefits to the Indiana bat through the implementation of minimization and mitigation measures as set forth in the Indiana Bat Mitigation Guidance for the Commonwealth of Kentucky. For additional information about this option, please notify our office.

Thank you again for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions regarding the information that we have provided, please contact myself, James Gruhala at (502) 695-0468 extension 116.

Sincerely,

James Gruhala
Fish & Wildlife Biologist
U.S. Fish & Wildlife Service

KY Ecological Services Field Office
330 West Broadway, Room 265
Frankfort, KY 40601

(502) 695-0468 ext. 116

KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES
TOURISM, ARTS, AND HERITAGE CABINET

Steven L. Beshear
Governor

#1 Sportsman's Lane
Frankfort, Kentucky 40601
Phone (502) 564-3400
1-800-858-1549
Fax (502) 564-0506
fw.ky.gov

Marcheta Sparrow
Secretary

Dr. Jonathan W. Gassett
Commissioner

19 June 2012

Brett Fisher, P.E.
Project Engineer
Summit Engineering, Inc.
120 Prosperous Place, Suite 101
Lexington, KY 40509

RE: Pikeville Wastewater Facilities Plan
Pike County, Kentucky

Dear Mr. Fisher:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for information regarding the subject project. The Kentucky Fish and Wildlife Information System indicates that no federally-threatened/endangered species are known to occur within proposed project boundary. The state-listed American Black Bear *(Ursus americanus)* is known to occur within the project boundary. Due to the location and nature of the proposed projects, the KDFWR does not anticipate impacts to listed species or any critical habitat, wetlands, special aquatic sites, or refuge areas. Please be aware that our database system is a dynamic one that only represents our current knowledge of various species distributions.

I hope this information is helpful to you, and if you have questions or require additional information, please call me at (502) 564-7109 extension 4453.

Sincerely,

Dan Stoelb
Wildlife Biologist

Cc: Environmental Section File

STEVEN L. BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL

MARCHETA SPARROW
SECRETARY

THE STATE HISTORIC PRESERVATION OFFICE
300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

LINDY CASEBIER
ACTING EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

July 25, 2012

Mr. Brett Fisher
Summit Engineering Inc.
120 Prosperous Place, Suite 101
Lexington, KY 40509

Re: Pikeville Wastewater Facilities Plan, Pike County, Kentucky

Dear Mr. Fisher:

Thank you for your correspondence on the project listed above. The plans themselves will not impact any cultural resources. However, the actual construction of the lines and infrastructure proposed by the completed plans will require consultation with my office to ensure the applicant is in compliance with relevant state and federal regulations regarding cultural resources. These may include any or all of the following: the Advisory Council on Historic Preservation's Rules and Regulations for the Protection of Historic and Cultural Properties (36CFR, Part 800) pursuant to the National Historic Preservation Act of 1966; the National Environmental Policy Act of 1969; Executive Order 11593; Kentucky Antiquities Act (KRS 164.705-164.735, KRS 164.990); Kentucky Cave Protection Act (KRS 433.871-433.885); and graves protection legislation (KRS 525.105, KRS 525.110, KRS 525.115, KRS 525.120, KRS 72.020, and 901 KAR 5:090).

We look forward to continued consultation once the plans have been completed. Should you have any questions, please contact Philip Mink of my staff at (502)564.7005, ext. 140, or at Philip.Mink@ky.gov.

Sincerely,

Lindy Casebier
Acting Executive Director and
State Historic Preservation Officer

LC:pbm

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059

http://www.lrl.usace.army.mil/

July 18, 2012

Operations Division
Regulatory Branch (South)

Mr. Brett Fisher
Summit Engineering, Inc.
120 Prosperous Place
Suite 101
Lexington, Kentucky 40509

Dear Mr. Fisher:

This is in regard to your letter dated June 7, 2012, for a review on behalf of the City of Pikeville in Pike County, Kentucky concerning the evaluation of the existing wastewater collection, conveyance, and treatment system over the next 20-year period, and associated future construction which may result from these evaluations.

The U.S. Army Corps of Engineers (USACE) exercises regulatory authority under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act, 1972 (33 USC 1344) for certain activities in "waters of the United States (U.S.)." Section 404 requires that a Department of the Army (DA) permit be obtained for the placement or discharge of dredged and/or fill material into "waters of the U.S.," including wetlands, prior to conducting the work.

"Waters of the U.S.," include hydrologically connected lakes, rivers and stream channels exhibiting an Ordinary High Water Mark (OHWM), wetlands, sloughs, wet meadows and wetlands adjacent to "waters of the U.S." The OHWM elevation is the line on the bank established by the changing water surface and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and other indications as determined upon inspection of the area.

Section 10 requires that a DA permit be obtained for any work that occurs in, under, or over a navigable water. These waters include all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce.

Based on the information provided by you, "waters of the U.S." may be located within the project area. "Waters of the U.S." may include any stream channels (perennial, intermittent, ephemeral)

and/or hydrologically connected lakes exhibiting an OHWM and any adjacent wetlands within the proposed project area. A jurisdictional determination must be completed if a proposed project would impact any "waters of the U.S.," including wetlands.

We do not have any comments on the general environmental impacts of the proposed project(s). Our lack of comments on specific potential environmental impacts should not be construed as concurrence that no significant environmental damage would result from the project. Our comments on this project are limited to only those effects which may fall within our area of jurisdiction and thus does not obviate the need to obtain other permits from State or local agencies.

If the project(s) would necessitate the discharge of dredged or fill material into any "waters of the U.S.," including jurisdictional wetlands, then you should submit a DA permit application for review by this office. We will need a completed DA permit application along with additional details regarding the project's design, scope, photos, construction methods, purpose and the locations (coordinates) of all "waters of the U.S." Please allow sufficient time in your preconstruction schedule for the processing of a DA permit application. Copies of DA permit application forms can be obtained by writing to the above address ATTN: CELRL-OP-FS or online at http://www.lrl.usace.army.mil/.

If we can be of any further assistance, please contact us by writing to the above address ATTN: CELRL-OP-FS, or by calling me at 502-315-6702.

Sincerely,

Adam Fannin
Project Manager, South Section
Regulatory Branch

SECTION 10
EVALUATION OF RECOMMENDED REGIONAL FACILITY PLAN

10.01 EVALUATION PLAN

10.01.1 ENVIRONMENTAL IMPACTS

10.01.1.1 INTRODUCTION

An important component of this facilities plan is the assessment of potential environmental impacts to the study area by the recommended plan. Environmental impacts should be considered as both long and short term and beneficial and adverse in nature.

10.01.1.2 BENEFICIAL ENVIRONMENTAL IMPACTS

The primary beneficial environmental impact of implementing the recommended plan is the protection and possible improvement of water quality in the creeks and streams in the area. Protecting and improving water quality may improve the quantity and diversity of plant and aquatic life forms. Additionally, the overall attractiveness of the area for future development may be increased. Eliminating unsafe or non-functional sewage discharges will have positive effects on human health and safety.

10.01.1.3 ADVERSE ENVIRONMENTAL IMPACTS

Any adverse environmental impacts should be considered short term in nature. Adverse impacts would include increased silt runoff during construction, increased noise and dust during construction, possible inconvenience to traffic, and temporary displacement of wildlife and vegetation in the area.

10.01.1.4 IMPORTANT FARMLANDS

The wastewater plant and collection lines will not negatively impact any available farmland in the Planning Area.

10.01.1.5 HISTORIC/ ARCHAEOLOGICAL SITES

No historic or archaeological sites will be disturbed by construction of any of the plan components as all components are anticipated to be constructed on existing previously disturbed rights of way.

10.01.1.6 PLANT AND ANIMAL COMMUNITIES

It is not anticipated that any rare or endangered plant or animal species will be disturbed by construction of plan components. See also 10.01.1.5.

10.01.1.7 POTENTIAL HEALTH HAZARDS

Implementation of the plan should not create any adverse health hazards to the public.

10.01.2 INSTITUTIONAL STRUCTURE

The City of Pikeville will continue to own its own wastewater treatment and collection system and continue to be operated and maintained by Utilities Management Group (UMG) via third party contract.

10.01.3 FUNDING PLAN

Project Cost
The capital requirements and phasing of the selected plan (0-2 Year) are summarized in Table 8C-1 of Section 8C. The estimated project costs for the 0-2 year collection system and treatment works are $8,225,761 and $24,182,610 respectively for a total 0-2 year project cost of $32,408,371.

Funding Plan (0-2 Year Planning Period)
It is impractical to identify funding for 3-20 year projects at this time. The Belcher Sewer Entity's efforts are currently directed at funding the 0-2 year projects. Table 10-1 presents the proposed plan for funding of the 0-2 year plan.

Table 10-1
Potential Sources of Funding for Phase 1 Sewer

AGENCY	GRANT / LOAN	AMOUNT
EPA (Special Project Assistance)	GRANT	$ 5,000,000.00
EDA	GRANT	$ 1,000,000.00
KIA-SRF	LOAN	$ 1,000,000.00
ARC	GRANT	$ 500,000.00
RD	GRANT	$ 5,822,511.31
RD	LOAN	$ 13,585,859.72
CDBG	GRANT	$ 2,000,000.00
COAL SEVERANCE	GRANT	$ 3,500,000.00
GRAND TOTAL		**$32,408,371.03**

It is anticipated that the current Pikeville rate structure will be completely reworked to account for the proposed 0-2 year projects. Therefore, only flat rates per 1000 gallons are proposed in this report. Minimum bills and actual cost per 1000 gallons will be refined during the design

phases of the project when more firm project estimates are available. Anticipated monthly bill amounts can be seen in Section 8C.

10.01.4 IMPLEMENTATION SCHEDULE

10.01.4.1 RECOMMENDED PLAN IMPLEMENTATION – GENERAL

The combined DOW review process typically takes twelve to eighteen months. This represents a significant project delay. Consequently, Pikeville should proceed with implementation as soon as possible.

Actions Required:

Pikeville should begin the following activities:

- Review, approve, and adopt this Facilities Plan Update.
- Submit this Facilities Plan update to the Kentucky Division of Water for review, comment, and approval.
- Conduct a public hearing to discuss this Facilities Plan and receive input on the plan from the public

10.01.4.2 RECOMMENDED PLAN IMPLEMENTATION - SCHEDULE

See Table 10-2 for a preliminary implementation schedule for the proposed 0-2 year plan. The start of the 0-2 year planning window is assumed to begin at the start of construction of the 0-2 year planning period projects. It is estimated that construction of the 0-2 year plan will be completed between the years 2015 and 2016.

10.01.5 PUBLIC SUPPORT

In order for the public to be aware of the proposed plan and comment thereon, a public meeting will be held to discuss the selected alternatives, proposed user costs and financing. The public meeting will be held upon approval by the Kentucky Division of Water. Notice of the public meeting will be published at least one week in advance of the meeting date in the newspaper of greatest circulation in the area. **Appendix B** contains all pertinent information relating to the public meeting process, including newspaper affidavits, copies of newspaper advertisements, and transcripts of the public meeting(s).

TABLE 10-2
PIKEVILLE WASTEWATER FACILITIES PLAN
0-2 YEAR PLANNING PERIOD PROJECTS
PRELIMINARY PROJECTS IMPLEMENTATION SCHEDULE

ITEM	YEAR														
	2012		2013				2014				2015				2016
	Summer 2012	Fall 2012	Winter 2013	Spring 2013	Summer 2013	Fall 2013	Winter 2014	Spring 2014	Summer 2014	Fall 2014	Winter 2015	Spring 2015	Summer 2015	Fall 2015	Winter 2016
REVIEW & APPROVAL OF 201 PLAN															
FUNDING APPLICATION PROCESS															
DESIGN & PERMITTING															
DOW REVIEW AND APPROVAL															
BIDDING & AWARD															
CONSTRUCTION															
PROJECT CLOSEOUT															

SECTION 11
DOCUMENTATION OF PUBLIC PARTICIPATION

11.01 PUBLIC HEARING DOCUMENTATION

The following documents are attached in the following pages for reference:

1. Copy of newspaper affidavit advertising public meeting
2. A description of measures taken to solicit public participation
3. A copy of power point presentation given during public meeting
4. Public meeting attendance sheet (sign in sheet)
5. Copy of public comments received

SECTION 12
REGIONAL FACILITY PLAN COMPLETENESS CHECKLIST FORMS

Section 12: Regional Facility Plan Completeness Checklist and Forms

Requirements: Two (2) hard copies, one certified by a professional engineer licensed in Kentucky and one (1) non-certified digital copy of the regional facility plan and the planning area shapefile on a Compact Disc (CD) shall be submitted to the Cabinet. This completeness checklist should be completed and submitted with each regional facility plan.

Regional Planning Agency Name: City of PIKEVILLE

Date: 6/29/12

		PAGE #
SECTION 1		
REGIONAL FACILITY PLAN SUMMARY- This section shall provide a brief summary of the information provided in the facility plan, including the following:		1-1
1.	Purpose of the plan and major problems evaluated in the plan.	1-1
2.	Recommended alternative chosen to remediate or correct the problems and/or serve the area of need identified in the plan. Also, include any institutional arrangements necessary to implement the recommended alternative(s).	1-1
3.	Estimated cost of implementing the proposed plan (including user fees) and the proposed funding method to be used.	1-2
4.	Planning agency commitments necessary to implement the plan.	1-3
5.	Schedule of implementation for projects.	1-4
SECTION 2		
STATEMENT OF PURPOSE AND NEED- This section shall contain a brief description of the purpose and need for a submitting the facility plan.		2-1
SECTION 3		
PHYSICAL CHARACTERISTICS OF THE PLANNING AREA- This section shall delineate the planning area boundaries and describe key topographic, geographic and pertinent natural or man-made features of the area. Digital or electronic submission of the planning area boundary shapefile in a standard GIS format shall also be included. This section shall also include the following maps:		3-1
1.	One (1) up-to-date map, suitable for photocopying, indicate the planning area boundary, service area boundary, watershed boundaries, county lines, populated places, cities and/or towns and project areas or proposed planning period phases.	3-5 & 3-6
2.	One (1) up-to-date map, suitable for photocopying, include locations of wastewater treatment facilities (including package treatment plants), discharge location(s), collection lines (gravity, force main, interceptors), pump stations, public drinking water intake points and groundwater supply areas [Source Water Area Protection Plans (SWAPP) and/or Wellhead Protection Areas (WHPA)].	6-7
3.	One (1) seven and one-half (7 ½) minute USGS topographic map including the location of wetlands, delineation of the 100-year floodplain, surface water(s), and topography.	3-8 & 3-9

4.	If available, a local planning and zoning land use map.	3-7
	SECTION 4	
SOCIOECONOMIC CHARACTERISTICS OF THE PLANNING AREA- The following characteristics of the planning area shall be discussed:		4-1
1.	Historical, current, and projected population in the planning area including wastewater contributions from industrial and commercial sources.	4-1
2.	Current and projected population in the existing service area and unsewered parts of the planning area	4-3
3.	Economic or social benefit to the affected community	4-4
	SECTION 5	
EXISTING ENVIRONMENT IN THE PLANNING AREA- Describe existing physical, biological, cultural, and other resource features within the planning area with an emphasis on those that may be impacted by the proposed plan or projects, including the following:		5-1
1.	Physical features such as surface and groundwater quality, water sources and supply, wetlands, lakes, streams, air pollution, floodplains, soils, geology, and topography	5-1
2.	Biological: Identify plant and animal communities in the planning area with an emphasis upon endangered and threatened species likely to be impacted	5-2
3.	Cultural: Describe archaeological and historical resources that may be affected by the proposed project	5-2
4.	Other Resource Features such as national and state parks, recreational areas, USDA Designated Important Farmland, and any other applicable environmentally sensitive areas	5-2
	SECTION 6	
EXISTING WASTEWATER SYSTEM- This section shall be prepared by a Professional Engineer licensed in Kentucky. A description of the existing facilities within the planning area shall include the following:		6-1
1.	On-site systems in the planning area	6-1
2.	Physical condition of the existing wastewater treatment plant(s) including the type, age, design capacity, process units, peak and average wastewater flows, current discharge permit limits, schematic layout of treatment plant. Include a narrative description of the capacity of the treatment plant to meet reliability and redundancy requirements as outlined in regulation 401 KAR 5:005, Section 13.	6-1
3.	Existing collection and conveyance system and its condition	6-3
4.	Existing biosolids disposal method	6-5
5.	Existing operation, maintenance and compliance issues	6-6
	SECTION 7	
FORECASTS OF FLOWS AND WASTE LOADS IN THE PLANNING AREA- This section shall be prepared by a professional engineer licensed in Kentucky and shall include:		7-1
1.	Current and projected commercial, industrial and residential growth for the proposed planning period	7-1 to 7-3
2.	A copy of the waste load allocation (WLA) issued by the DOW for new or expanded treatment plant projects	7-4 Appendix C

SECTION 8		
EVALUATION OF ALTERNATIVES- This section shall be prepared by a professional engineer licensed in Kentucky and include an assessment of alternatives to determine the appropriate facilities that will meet the wastewater needs of the planning area and provide benefits that are cost-effective and environmentally sound. The section shall include:		8A to 8C
1.	No-action alternative	8A-1 / 8B-1
2.	Optimization of existing facilities	8B-1
3.	Regionalization	8B-1
4.	Other alternatives	8A-1 / 8B-1
5.	Detailed cost analysis along with 20 year present worth analysis for each alternative	8A-6 / 8B-5 (Appendix D)
6.	Recommended alternative	8C-1
SECTION 9		
CROSS-CUTTER CORRESPONDENCE AND MITIGATION- Each facility plan shall include cross-cutter correspondences to and from each agency related to the following four environmental and cultural concerns:		9-1
1.	Threatened and Endangered Species: The U.S. Fish and Wildlife Service- Kentucky Ecological Services Field Station and the Kentucky Department of Fish and Wildlife Resources	9-1
2.	Historical Resources: The Kentucky Heritage Council State Historic Preservation Office	9-1
3.	Aquatic Resources: The US. Army Corps of Engineers (Louisville, Nashville, or Huntington Districts).	9-1
4.	Agricultural Resources: The local office of the Natural Resources Conservation Service (NRCS) or USDA Service Center	9-1
SECTION 10		
EVAULATION OF RECOMMENDED REGIONAL FACILITY PLAN- This section of the facility plan shall summarize the critical components of the recommended plan.		10-1
1.	Environmental impacts	10-1
2.	Institutional structure	10-2
3.	Funding plan	10-2
4.	Current and projected residential user charge rate based on 4,000 gallon usage per month	10-2 / 8C-4
5.	Implementation schedule	10-4
SECTION 11		
DOCUMENTATION OF PUBLIC PARTICIPATION- The section shall include a copy of the newspaper advertisement/proof of publication, attendance sheet, and public comments.		11-1

Unit Process Design Criteria Form

Unit Process	Number of Units[1]	Flow per Unit (MGD) AVG	Design Criteria[2]
Influent Pumping	3	4	Submersible
Screening	2	4	Bar screen
Grit Removal	2	4	grit screw
Primary Clarification	2	4	ANoxic / Pre EQ
Biological Process	2	4	Aeration
Chemical Phosphorus Removal	2	4	membranes / Anoxic
Final Clarification	2	4	Membranes
Disinfection	2	4	Chlorine
RAS/WAS Pumping	2	4	Submersible
Sludge Treatment	2	AS Needed	Digestion / Polymer
Sludge Dewatering	1	AS Needed	Press

1*The number of units shall be in accordance with the reliability/redundancy checklist
2*The design criteria shall be in accordance with 401 KAR 5:005 including Ten States Standards

Note: This is a suggested format only. The process listed here will not fit every project and will therefore need to be revised accordingly.

Design Flow and Concentration Form

Design Flows and Organic Concentrations	Flows MGD	BOD_5 mg/l	BOD_5 lb/day	SS mg/l	SS lb/day	NH_3-N mg/l	NH_3-N lb/day	TKN mg/l	TKN lb/day	P mg/l	P lb/day
Average Daily											
Domestic Portion											
Industrial Portion											
Total											
Population Equivalent											
Peak Hourly											
Domestic Portion											
Industrial Portion											
Total											
Peak Daily											
Peak Instantaneous											

SEE PAGES 7-6 through 7-7 OF REPORT

SECTION 13
REFERENCES

1. U.S. Fish and Wildlife Service. http://www.fws.gov/wetlands/Data/Mapper.html. Pike County Wetlands Mapping. Accessed April 1, 2012.

2. Kentucky Geological Survey. http://kgs.uky.edu/kgsweb/download/geology/landuse/lumaps.htm. Pike County Land Use Mapping. Accessed April 1, 2012.

3. Federal Emergency Management Agency. https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1. Flood Insurance Study for Pike County, Kentucky and Incorporated Areas Revised May 2 2008. Accessed April 1, 2012.

4. Kentucky State Data Center. Population and Employment Information. http://ksdc.louisville.edu/sdc/census2000/sf1profiles/Pike.pdf. 2000. Accessed April 1, 2012.

5. http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=KY0025291. EPA Wastewater Treatment Plant Database. Accessed April 27, 2012.

6. National Wild and Scenic Rivers. http://www.rivers.gov/wildriverslist.html. Listing of Wild and Scenic Rivers for Kentucky. Accessed April 11, 2012.

7. http://en.wikipedia.org/wiki/Indiana_bat. Indiana Bat Endangered Species Research. Accessed April 11, 2012.

8. Kentucky Department of Fish and Wildlife Resources. http://fw.ky.gov/. Endangered Species Research. Accessed April 11, 2012.

9. Article on Effluent Testing. "Turbidity and BOD control at Schoeller Technical Papers, Inc. Tappi Journal." June 1992.\

10. http://water.ky.gov/watershed/Documents/Big%20Sandy%20River/BasinStatusReport.pdf . Report on Big Sandy River Basin Water Quality. Prepared by Kentucky Division of Water. 2002.

11. http://en.wikipedia.org/wiki/Pikeville,_Kentucky. Climate Data for Pikeville. Accessed June 28, 2012.

12. Powerpoint Presentation. City of Pikeville Wastewater Treatment Plant Expansion. Vaughn and Melton. August 9, 2011. Accessed June 2012.

APPENDICES

Appendix A	Correspondence
Appendix B	Public Hearing
Appendix C	Waste Load Allocation
Appendix D	Construction Cost Estimates, Operation & Maintenance Cost Estimates, and Corresponding Project Area Exhibits
Appendix E	Sewer Use Agreement
Appendix F	Signed Resolution by City of Pikeville Approving the Facilities Plan

APPENDIX A

CORRESPONDENCE

CITY OF PIKEVILLE
118 College Street
Pikeville, Kentucky 41501
(606) 437-5100
Fax Number (606) 437-5106

Frank Justice, II
Mayor

Donovan Blackburn
City Manager

June 20, 2012

Anshu Singh
Facilities Construction Branch
Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601

Re: **City of Pikeville Facilities Plan** ***12-410***
Pikeville, Pike County, Kentucky

Dear Mrs. Singh,

This correspondence is in regards to the Division of Water / Pikeville coordination meeting held on 1/25/12 at Pikeville City Hall. As per DOW request, the City has prepared a draft wastewater facilities plan. The plan is written to update and clarify planning area boundaries, eliminate conflicting elements from prior documents and outline the City's wastewater growth plans for the 0-20 year planning period. This letter constitutes the City's acceptance of the facility plan as prepared by Summit Engineering, dated June 2012.

It is noted that the required public meeting has not yet been completed as the City recently decided on a treatment alternative for the proposed wastewater treatment plant expansion. A public meeting is planned in the coming months to present the plan and obtain public comment. Public meeting documentation will be transmitted to DOW at that time.

We are pleased to submit the following for the Division of Water's review and approval:

1. Two (2) Copies of the Draft Pikeville Facilities Plan in 3 ring binder
2. One (1) Copy of PDF version of the plan on CD

Please direct questions or comments regarding this submittal to Brett Fisher of Summit Engineering at 859-264-9860 ext 312.

Sincerely,

Frank Justice, II
Mayor – City of Pikeville

Greg May
Chief Operating Officer (UMG)
(Concurrence)

cc: Greg May (UMG)
Brett Fisher (Summit Engineering)
File

ERNIE FLETCHER
GOVERNOR

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LAJUANA S. WILCHER
SECRETARY

August 25, 2006

Honorable Frank Justice, Mayor
City of Pikeville
118 College Street
Pikeville, Kentucky 41501

Jimmy A. Calhoun, Chair
Prestonsburg City's Utilities Commission
2560 South Lake Drive
Prestonsburg, Kentucky 41653

Toni Akers, Chair
Mountain Water District
P.O. Box 3157
Pikeville, Kentucky 41502

Hubert Halbert, Chair
Southern Water and Sewer District
245 KY Route 680
McDowell, Kentucky 41647

Re: Approval of Revised Planning Areas
Floyd County and Pike County, Kentucky
Pikeville WWTP, AI ID 3690
Mountain Water District Mossy Bottom WWTP, AI ID 3670
Prestonsburg WWTP, AI ID 1297
Southern Water and Sewer District Harold WWTP, AI ID 44248

Dear Sirs:

The Municipal Planning Section of the Facilities Construction Branch, Division of Water (DOW), has received a request to revise the planning area boundaries of the city of Pikeville and Mountain Water District Mossy Bottom area in Pike County and the city of Prestonsburg and Southern Water and Sewer District South Floyd area in Floyd County. The Division approves these revisions and the planning areas boundaries for these sewer systems in DOW records are now as shown on the enclosed maps.

The Department for Environmental Protection offers free regulatory assistance through its Division of Compliance Assistance. If you have questions related to compliance with any environmental requirements, please contact the division by calling 1-800-926-8111.

If you have any questions, please contact me at (502) 564-3410, extension 596.

Sincerely,

Jill M. Bartelson

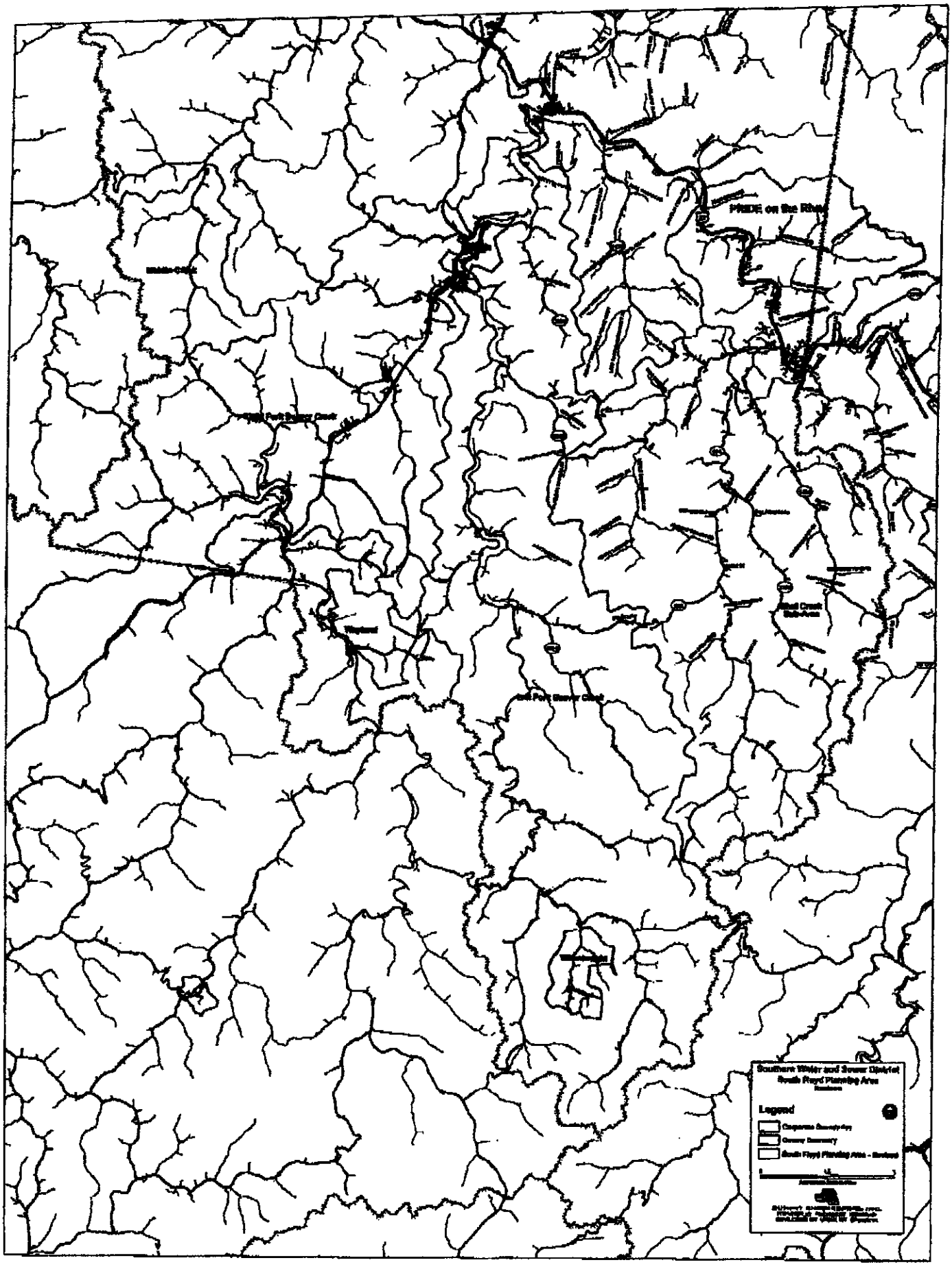
Jill Bartelson, P.E., Supervisor
Municipal Planning Section
Facilities Construction Branch
Division of Water

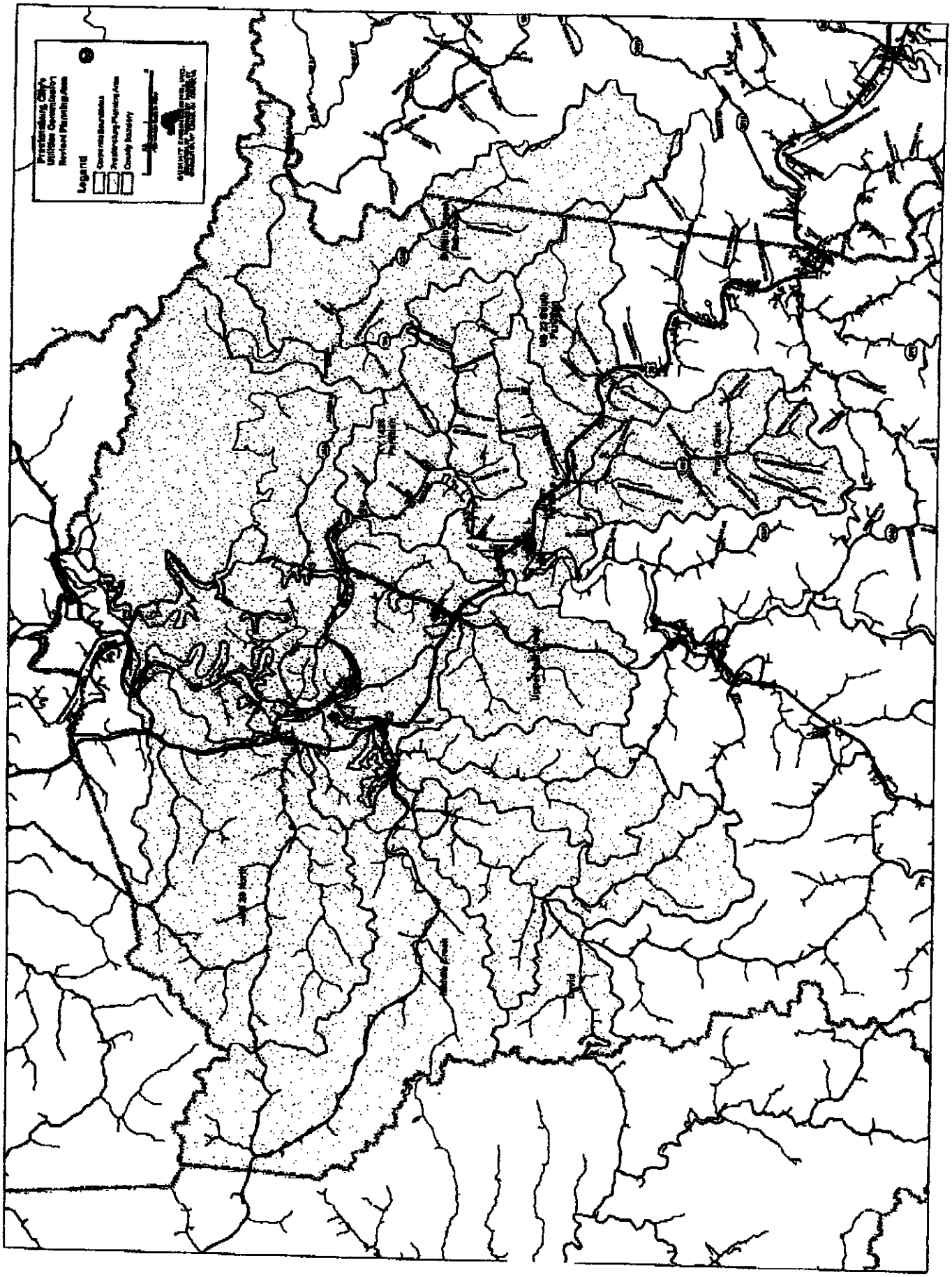
JMB

Attachments

cc: Franklin Vaughan, Summit Engineering (letter only)

Revised Planning Areas
City of Pikeville


PRIDE on the River
Legend


Legend

KPDES

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0025291
AI NO.: 3690

AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

City of Pikeville
117 College Street
Pikeville, Kentucky 41501

is authorized to discharge from a facility located at

Pikeville Wastewater Treatment Plant
222 Pound Puppy Drive
Pikeville, Pike County, Kentucky

to receiving waters named

Levisa Fork of the Big Sandy River at mile point 111.9

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, and IV hereof. The permit consists of this cover sheet, and Part I 3 pages, Part II 10 pages, Part III 1 page, and Part IV 3 pages.

This permit shall become effective on December 1, 2007.

This permit and the authorization to discharge shall expire at midnight, November 30, 2012.

October 30, 2007
Date Signed

Sandra L. Gruzesky, Acting Director
Division of Water

Cheryl A. Taylor
Commissioner

DEPARTMENT FOR ENVIRONMENTAL PROTECTION

A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall Number: 001, Municipal Wastewater.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day) Monthly Average	(lbs/day) Weekly Average	(other units) Monthly Average	(other units) Weekly Average	MONITORING REQUIREMENTS Measurement Frequency	Sample Type	Sampling Location
Flow, Design (2.0 MGD)	N/A	N/A	Report	Report[1]	Continuous	N/A	Effluent
Biochemical Oxygen Demand (5-day)	500	751	30 mg/l	45 mg/l	1/Week	Composite	Influent & Effluent
Total Suspended Solids	500	751	30 mg/l	45 mg/l	1/Week	Composite	Influent & Effluent
Escherichia Coli, (N/100)	N/A	N/A	130[2]	240[2]	1/Week	Grab	Effluent
Ammonia (as N)	334	500	20 mg/l	30 mg/l[1]	1/Week	Composite	Influent & Effluent
Dissolved Oxygen shall not be less than 2 mg/l					1/Week	Grab	Effluent
Total Residual Chlorine (TRC)	N/A	N/A	N/A	0.019 mg/l[1]	1/Week	Grab	Effluent
Total Phosphorus (as P), mg/l	N/A	N/A	Report	Report	1/Week	Composite	Effluent
Total Nitrogen (as N), mg/l	N/A	N/A	Report	Report	1/Week	Composite	Effluent
Acute toxicity units, TU_A	N/A	N/A	N/A	1.00[1]	1/Qtr	Grab[3]	Effluent

In addition to the specified limits, the monthly average effluent BOD_5 and suspended solids concentration shall not exceed 15% of the respective monthly average influent concentration (85% removal).
The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored three times per week by grab sample.
There shall be no discharge of floating solids or visible foam in other than trace amounts.
The effluent shall not cause a visible sheen on the receiving water.

1 Daily maximum limitation
2 Escherichia Coli reporting shall be monthly geometric mean and maximum weekly geometric mean.
3 See Part IV

A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall Number: 001, Municipal Wastewater.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day)		DISCHARGE LIMITATIONS (mg/l)		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sampling Location
Lead, Total Recoverable	N/A	N/A	Report	Report	1/Quarter[1]	Composite	Effluent
Cadmium, Total Recoverable	N/A	N/A	Report	Report	1/Quarter[1]	Composite	Effluent
Copper, Total Recoverable	N/A	N/A	Report	Report	1/Quarter[1]	Composite	Effluent
Zinc, Total Recoverable	N/A	N/A	Report	Report	1/Quarter[1]	Composite	Effluent
Hardness as Calcium Carbonate ($CaCO_3$)	N/A	N/A	Report	Report	1/Quarter[1]	Composite	Effluent

[1] Monitoring shall be done in conjunction with biomonitoring.

A3. COMBINED SEWER OVERFLOW DISCHARGE MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from CSO outfalls: 003 and 005. Discharges resulting from overflows shall be during periods of wet weather only and also meet the requirements outlined in PART II.

Such discharges shall be limited and monitored by the permittee as specified below:

OVERFLOW CHARACTERISTICS	MONITORING REQUIREMENTS Monthly Total
Number of Events[1]	Report
Event Duration (hours)	Report
Area Rainfall (inches)	Report
Estimated Overflow Volume (gallons)	Report[2]

[1] An event is a discharge from a combined sewer outfall. A wet weather event is a discharge that occurs in direct response from rainfall or snowmelt. A dry weather event is a discharge that occurs for reasons other than rainfall or snowmelt. A dry weather event is a discharge that occurs for reasons other than rainfall or snowmelt. For the purposes of this monitoring form, all events will be totaled on a monthly basis for each combined sewer outfall.

[2] Volume estimation method for quantifying overflow events should be a system-wide method to provide consistency for reporting at each outfall.

[3] (If applicable, flow bypassed around WWTP units shall be reported on the annual monitoring reports. The most significant bypass event for the year shall be reported as a flow rate. See Part II, Page 14 for details.)

B. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with all requirements on the effective date of this permit unless specified in some form of enforceable mechanism.

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

The conditions of 401 KAR 5:065, Section 1 are expressly listed as follows:

(1) Duty to Comply.

(a) General requirement. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of KRS Chapter 224, among which shall be the following remedies: enforcement action, permit revocation, revocation and reissuance, or modification; or denial of a permit renewal application.

(b) Specific duties.

1. The permittee shall comply with effluent standards or prohibitions established under 40 CFR Part 129 as of July 1, 2001, as adopted without change, within the time provided in the federal regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

2. Any person who violates a permit condition as set forth in the KPDES administrative regulations shall be subject to penalties under KRS 224.99-010(1) and (4).

(2) Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit as required in 401 KAR 5:060, Section 1.

(3) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with conditions of this permit.

(4) Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(5) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also shall include adequate laboratory controls, and appropriate quality assurance procedures. This provision shall require the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only if the operation is necessary to achieve compliance with the conditions of the permit.

(6) Permit actions. The permit may be modified, revoked and reissued, or revoked for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or a notification of planned changes or anticipated noncompliance, shall not stay any permit condition.

(7) Property rights. This permit shall not convey any property rights of any kind, or any exclusive privilege.

(8) Duty to provide information. The permittee shall furnish to the cabinet, within a reasonable time, any information which the cabinet may request to determine whether cause exists for modifying, revoking and reissuing, or revoking this permit, or to determine compliance with this permit. The permittee shall also furnish to the cabinet, upon request, copies of records required to be kept by this permit.

(9) Inspection and entry. The permittee shall allow the cabinet, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records pertinent to the KPDES program are or may be kept;
(b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;
(c) Inspect at reasonable times any facilities, equipment, including monitoring and control equipment, practices, or operations regulated or required under this permit; and
(d) Sample or monitor at reasonable times, for the purposes of assuring KPDES program compliance or as otherwise authorized by KRS Chapter 224, any substances or parameters at any location.

(10) Monitoring and records.

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
(b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report, or application. This period may be extended by request of the cabinet at any time.
(c) Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
2. The individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The individual who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of the analyses.
(d) Monitoring shall be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.
(e) Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be subject to penalties under KRS 224.99-010(4).

(11) Signatory requirement. All applications, reports, or information submitted to the cabinet shall be signed and certified as indicated in 401 KAR 5:060, Section 9. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be subject to penalties under KRS 224.99-010(4).

(12) Reporting requirements.

(a) Planned changes. The permittee shall give notice to the cabinet as soon as possible of any planned physical alteration or additions to the permitted facility. Notice shall be required only if:
1. The alteration or addition to a permitted facility may meet one (1) of the criteria for determining whether a facility is a ma...

5:080, Section 5; or
2. The alteration of addition could significantly change the nature of increase the quantity of pollutants discharged. This notification only applies to pollutants which are subject either to effluent limitations in the permit, or to notification requirements under 401 KAR 5:080, Section 5.

(b) Anticipated noncompliance. The permittee shall give advance notice to the cabinet of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Transfers. The permit shall not be transferable to any person except after notice to the cabinet. The cabinet may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate other requirements as may be necessary under KRS Chapter 224.

(d) Monitoring reports. Monitoring results shall be reported at the intervals specified in the permit. Monitoring results shall be reported as follows:
1. Monitoring results shall be reported on a Discharge Monitoring Report (DMR).
2. If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
3. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the cabinet in the permit.

(e) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

(f) Twenty-four (24) hour reporting. The permittee shall follow the provisions of 401 KAR 5:015 and shall orally report any noncompliance which may endanger health or the environment, within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. This report shall be in addition to and not in lieu of any other reporting requirement applicable to the noncompliance. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The cabinet may waive the written report on a case-by-case basis if the oral report has been received within twenty-four (24) hours. The following shall be included as events which shall be reported within twenty-four (24) hours:
1. Any unanticipated bypass which exceeds any effluent limitation in the permit, as indicated in subsection (13) of this section.
2. Any upset which exceeds any effluent limitation in the permit.
3. Violations of a maximum daily discharge limitation for any of the pollutants listed by the cabinet in the permit to be reported within twenty-four (24) hours, as indicated in 401 KAR 5:065, Section 2(7).

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this subsection, when monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this subsection.

(h) Other information. Where the permittee becomes aware that it failed to submit any relevant fact in a permit application, or submitted incorrect information in a permit application or in any report to the cabinet, it shall promptly submit these facts or information.

(13) Occurrence of a bypass.

(a) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. This type of bypass shall not be subject to the provisions of paragraphs (b) and (c) of this subsection.

(b) Notice.

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass. Compliance with this requirement constitutes compliance with 401 KAR 5:015, Section 1.

2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in subsection (12)(f) of this section, twenty-four (24) hour notice. Compliance with this requirement constitutes compliance with 401 KAR 5:015, Section 4.

(c) Prohibition of a bypass.

1. Bypassing shall be prohibited, and the cabinet may take enforcement action against a permittee for bypass, unless:

a. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition shall not be satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
c. The permittee submitted notices as required under paragraph (b) of this subsection.

2. The cabinet may approve an anticipated bypass, after considering its adverse effects, if the cabinet determines that it will meet the three (3) conditions listed in subparagraph 1a, b, and c of this paragraph.

(14) Occurrence of an upset.

(a) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of paragraph (b) of this subsection are met.

(b) Conditions necessary for a demonstration of an upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the permittee can identify the causes of the upset;
2. The permitted facility was at the time being properly operated;
3. The permittee submitted notice of an upset as required in subsection (12)(f) of this section; and
4. The permittee complied with any remedial measures required under subsection (4) of this section.

(c) Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset shall have the burden of proof.

(15) Additional conditions applicable to specified categories of KPDES permits. The following conditions, in addition to others set forth in this administrative regulation, shall apply to all KPDES permits within the categories specified below:

(a) Existing manufacturing, commercial, mining, and silvicultural dischargers. In addition to the reporting requirements under subsections (12), (13), and (14) of this section, any existing manufacturing, commercial, mining, and silvicultural discharger shall notify the cabinet as soon as it knows or has reason to know:

1. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

a. 100 micrograms per liter (100 µg/l);
b. 200 micrograms per liter (200 µg/l) for acrolein and acrylonitrile; 500 micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one (1) milligram per liter (1 mg/l) for antimony;
c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 401 KAR 5:060, Section 2(7);
d. The level established by the cabinet in accordance with 401 KAR 5:065, Section 2(6).

2. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

a. 500 micrograms per liter (500 µg/l);
b. One (1) milligram per liter (1 mg/l) for antimony;
c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 401 KAR 5:060, Section 2(7); or
d. The level established by the cabinet in accordance with 401 KAR 5:065, Section 2(6).

(b) POTWs.

1. POTWs shall provide adequate notice to the cabinet of the following:
a. Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to the KPDES administrative regulations if it were directly discharging those pollutants; or
b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

2. For purposes of this paragraph, adequate notice shall include information on the quality and quantity of effluent introduced into the POTWs and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

POTW REQUIREMENTS

NOTE: The following requirements apply only to Publicly-Owned Treatment Works.

SLUDGE DISPOSAL

Sludge shall be disposed of in accordance with 40 CFR Part 503 and 401 KAR 45.

PROHIBITIVE DISCHARGES

Under no circumstances shall the permittee allow discharge of the following into the system:

a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW);

b. Pollutants which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in sewers, or other interference with operation of the POTW;

d. Any pollutant, including oxygen demanding pollutants (BOD_5, etc.), released in a discharge at such a volume or strength as to cause interference in the POTW;

e. Heat in amounts which will inhibit biological activity in the POTW, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104° F (40° C);

f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and,

h. Any trucked or hauled waste, except at discharge points designated by the POTW.

Industrial Pretreatment Standards

The permittee shall provide annual reports to the Permit Issuing Authority listing industrial users of the system and identifying any problems caused by these users. Yearly reports are due no later than December 31 of each year, unless otherwise specified by the permitting authority.

The permittee may be required to develop a local pretreatment program to enforce the requirement of applicable industrial discharges to meet the Federal Categorical Standards of 40 CFR Part 403, and other requirements pursuant to state regulation 401 KAR 5:057, Section 6.

Combined Sewer Overflows & Long Term Control Plan (LTCP)

Combined sewer overflows (CSOs) are point sources subject to NPDES permit requirements including both technology-based and water quality-based requirements of the Clean Water Act. CSOs are not subject to secondary treatment regulations applicable to publicly owned treatment works.

The permittee is authorized to discharge from the overflow(s) stated below:

Outfall	Latitude/Longitude	Street Location	Receiving Water
002	37°29'25"/82°32'21"	Lift Station #7	Levisa Fork
003	37°28'48"/82°32'17"	Poor Farm Lift Station	Pikeville Road
004	37°28'13"/82°32'12"	Huffman Lift Station	Levisa Fork

The above referenced outfalls shall comply with the following conditions:

A. Satisfy the objectives of the 1989 EPA Combined Sewer Overflow Control Strategy: (1) ensure that if CSOs occur, they occur only as a result of wet weather;

(2) bring all wet weather CSO discharges into compliance with technology-based and water quality-based requirements of the Clean Water Act; and

(3) minimize the impacts of CSOs on water quality, aquatic biota, and human health.

Because there have not been any recent overflows and Pikeville has plans for complete sewer separation of the combined areas downtown, the requirement for the development of a Long-Term Control Plan will be subject to the remedial measures listed in the Consent Decree.

B. The permittee shall continue the implementation of the following technology-based nine minimum controls to reduce CSOs and the effects CSOs have on receiving water quality. Annual updates of the Combined Sewer Operational Plan (CSOP) will no longer be a permit requirement. Reporting and compliance will be addressed through a Consent Decree or other enforceable mechanism.

Nine Minimum Controls (NMC):

1. Proper operation and regular maintenance programs for the sewer system and the CSOs;

   The permittee shall implement proper operation and maintenance programs for the sewer system and all CSO outfalls to reduce the magnitude, frequency, and duration of CSOs. The program shall consider regular sewer inspections; sewer, catch basin, and regulator cleaning; equipment and sewer collection system repair or replacement, where necessary; and disconnection of illegal connections.

2. Maximum use of the collection system for storage;

   The permittee shall implement procedures that will maximize use of the collection system in order to reduce the magnitude, frequency, and duration of CSOs.

3. Review and modificatioin of pretreatment requirements to assure CSO impacts are minimized;

   The permittee shall evaluate the CSO impacts from non-domestic users and take appropriate steps to minimize such impacts.

4. Maximization of flow to the WWTP for treatment;

   The permittee shall operate the WWTP at maximum treatable flow during all wet weather flow conditions to reduce the magnitude, frequency, and duration of CSOs. The permittee shall deliver all flows to the treatment plant within the constraints of the treatment capacity of the WWTP.

5. Prohibition of CSOs during dry weather. A dry weather overflow (DWO) is a combined sewer overflow that occurs during dry weather flow conditions;

   Dry weather overflows from CSO outfalls are prohibited. Each dry weather overflow must be reported to the permitting authority as soon as the permittee becomes aware of the overflow. When the permittee detects a dry weather overflow, the permittee shall begin corrective action immediately. The permittee shall inspect the dry weather overflow each subsequent day until the overflow has been eliminated.

6. Control of solid and floatable materials in CSOs;

7. Pollution prevention;

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts;

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls. Monitoring data shall include collection of data that will be used to document the existing baseline conditions upon which the LTCP will be based. The data shall include:

   (a) Characteristics of combined sewer system including the population served by the combined portion of the system and locations of all CSO outfalls in the combined sewer system (CSS);

   (b) Total number of CSO events and the frequency and duration of CSOs for a representative number of events;

   (c) Locations and designated uses of receiving water bodies;

   (d) Water quality data for receiving water bodies; and

   (e) Water quality impacts directly related to CSOs (e.g. floatables wash-up episodes, fish kills).

D. Overflow Event Reporting.

1. The permittee shall submit monthly totals for CSO overflow events. See Part I, Page I-5 for details.

2. Wet weather-related treatment plant bypasses shall be monitored and reported to the Regional Office in accordance with the provisions of 401 KAR 5:015. A CSO-related bypass may be necessary and/or unavoidable for treatment plants with existing primary treatment capacity that significantly exceeds the capacity of the secondary treatment units in order to prevent high flows from adversely affecting the operation and performance of processes at the WWTP. Bypasses are prohibited unless the permittee can demonstrate the provisions listed under 401 KAR 5:065, Section 1(13)(c) are applicable. Analysis of the feasibility and applicability of a CSO-related bypass should be performed during development of the LTCP. Bypass events shall be reported to the Regional Office.

E. CSO Reopener Clause
This permit may be modified to ensure compliance with technology-based and/or water quality-based requirements, as outlined in the CSO Control Policy.

OTHER REQUIREMENTS

A. Additional Monitoring

For compliance with EPA Form 2A - Supplemental Information (Part D), the permittee shall perform the required three effluent scans within the first year of the effective date of the permit. Sampling should be spaced out over a minimum span of three seasons or six months. The effluent testing date shall be submitted to the Division of Water on the 28th day of the month following the completion of the 1st year. The updated KPDES Form A application can be viewed online at www.water.ky.gov.

B. Reporting of Monitoring Results

Monitoring results obtained during each monitoring period must be reported on a preprinted Discharge Monitoring Report (DMR) Form that will be mailed to you. The completed DMR for each monitoring period must be sent to the Division of Water at the address listed below (with a copy to the appropriate Regional Office) postmarked no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

Division of Water
Hazard Regional Office
233 Birch Street
Hazard, Kentucky 41701
ATTN: Supervisor

Environmental & Public Protection Cabinet
Dept. for Environmental Protection
Division of Water/KPDES Branch
14 Reilly Road, Frankfort Office Park
Frankfort, Kentucky 40601

C. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under 401 KAR 5:050 through 5:080 and KRS 224, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

ACUTE CONCERNS
Biomonitoring

In accordance with PART I of this permit, the permittee shall initiate, within 30 days of the effective date of this permit, or continue the series of tests described below to evaluate wastewater toxicity of the discharge from Outfall 001.

1. Test Requirements

   A. The permittee shall perform a 48-hour static toxicity test with Ceriodaphnia sp. and a 48-hour static toxicity test with fathead minnow (Pimephales promelas). Tests shall be conducted on each of two (2) grab samples taken over a 24-hour period (e.g. discrete sample 1 taken at 9:00 a.m., sample 2 taken at 9:00 p.m.). Tests shall be conducted with appropriate replicates of 100% effluent, a control and a minimum of four (4) evenly spaced effluent concentrations. If the permit limit is less than 100% effluent and greater than or equal to 75% effluent, then one (1) concentration should be 100%. If the permit limit is less than 75% effluent, the permit limit concentration shall be bracketed with two (2) concentrations above and two (2) concentrations below. The selection of the effluent concentrations is subject to revision by the Division. Testing of the effluent shall be initiated within 36 hours of each sample collection. Controls shall be conducted concurrently with effluent testing using a synthetic water. The analysis will be deemed reasonable and good only if control survival is 90% or greater in test organisms held in synthetic water. Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period (i.e. monthly or quarterly). Noncompliance with the toxicity limit will be demonstrated if the LC_{50} is less than 100% effluent.

   B. Tests shall be conducted on both species at the frequency specified in PART I of this permit.

      If after at least six (6) tests it can be determined that Ceriodaphnia or the fathead minnow is more sensitive, a request for testing only that organism can be made to the Division. Upon approval, that organism can be chosen as representative and all subsequent tests can be conducted on only that organism.

2. Reporting Requirements

   Results of all tests conducted with any organism shall be reported according to the most recent format provided by the Division of Water (Appendix 10 of 'Methods for Culturing and Conducting Toxicity Tests with *Pimephales promelas* and *Ceriodaphnia dubia* (Fifth Edition)' KDOW, January 2002). Test results shall be submitted to the Division of Water with the next regularly scheduled discharge monitoring report.

3. Acute Toxicity

   If noncompliance with the toxicity limit occurs (the LC_{50} is less than 100% effluent), the permittee must conduct a second test using two (2) grabs within 10 days of the first failure. This test will be used in evaluating the persistence of the toxic event and the possible need for a toxics reduction evaluation (TRE).

3. Acute Toxicity (continuation)

If the second test demonstrates noncompliance with the toxicity limit, the permittee will be required to perform accelerated testing as specified in the following paragraphs.

Complete four (4) tests within 60 days of failure of the second test to evaluate the frequency and degree of toxicity. The results of the two (2) tests specified above and of the four (4) additional tests will be used for purposes of this evaluation.

If results from two (2) of any six (6) tests show a significant noncompliance with the acute limit (≥1.2 times the TU_a), or results from four (4) of any six (6) tests show acute toxicity (as defined in 1.A), a Toxicity Reduction Evaluation (TRE) will be required.

The permittee shall provide written notification, within five (5) days of the completion of accelerated testing to the Division of Water, that toxicity persisted and that a TRE would be initiated or that toxicity did not persist and the normal testing would resume.

Should toxicity not prove persistent during the accelerated testing, but reoccur within 12 months of the initial failure at a level ≥ 1.2 times the TU_a, then a TRE shall be initiated without further accelerated testing.

4. Toxicity Reduction Evaluation (TRE)

Having determined the effluent to be toxic, the permittee shall develop and implement an acceptable plan for the identification and treatability of the toxicant(s) within 90 days of completion of accelerated testing. The plan shall be developed in accordance with EPA guidance provided in the following EPA publications and submitted for DEP review and comment:

Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program. March 27, 2001.

Toxicity Reduction Evaluation Guidance For Municipal Wastewater Treatment Plants. August 1999.

Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures. February 1991.

Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures. February 1989.

Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures. February 1989.

Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs). March 1989.

Abstracts of Toxicity Reduction Evaluations. March 1989.

The plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE will establish an implementation schedule not to exceed 24 months for completion of these activities. The implementation schedule shall include monthly progress reports and a final report.

Upon the completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and the actions to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed 180 days.

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the conclusion of the TRE, the permittee will notify, within five (5) days, the Division of Water and take appropriate actions to implement the solution within 180 days of determination.

5. Test Methods

All test organisms, procedures, and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012 (5th edition) or the most recently published edition of this publication.

Within each toxicity report to the Division of Water, the permittee must demonstrate successful performance of reference toxicant testing by the laboratory that conducts their effluent toxicity tests. Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test. In addition, for each test method, at least 5 acceptable reference toxicant tests must be completed by the laboratory prior to performing the effluent toxicity test. A control chart including the most recent reference toxicant test endpoints for effluent test method (minimum of 5, up to 20 if available) shall be part of the report.

ERNIE FLETCHER
GOVERNOR

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601-1190
www.kentucky.gov

TERESA J. HILL
SECRETARY

FACT SHEET

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER INTO WATERS OF THE COMMONWEALTH

KPDES No.: KY025291
AI No.: 3690

Permit Writer: Barry Elmore

Date: October 30, 2007

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

City of Pikeville
117 College Street
Pikeville, Kentucky 41501

b. Facility Location

Pikeville Wastewater Treatment Plant
222 Pound Puppy Drive
Pikeville, Pike County, Kentucky

c. Description of Applicant's Operation

Engaged in collection, treatment, and disposal of wastewater.

d. Production Capacity

2.0 MGD (design)

e. Description of Existing Pollution Abatement Facilities

Outfall 001 - Treatment process consists of screening, grit removal, extended aeration, secondary clarifiers, chlorine disinfection, and dechlorination. Solids are processed by: aerobic digestion, belt filter press, and landfill disposal or land application.

Outfall 002 - This outfall is a combined sewer overflow.

Outfall 003 - This outfall is a combined sewer overflow.

Outfall 004 - This outfall is a combined sewer overflow.

dh

f. Permitting Action

This is a reissuance of a major KPDES permit for a municipal wastewater treatment plant. Included in this action is the imposition of combined sewer overflow (CSO) requirements.

2. **RECEIVING WATER**

a. Name/Mile Point

Outfall 001 discharges to the Levisa Fork of the Big Sandy River at mile point 111.9.

Outfall 002 discharges to the Levisa Fork at mile point 111.9.

Outfall 003 discharges to the Pikeville Pond at mile point 0.3.

Outfall 004 discharges to the Levisa Fork at mile point 113.7.

b. Stream Segment Use Classification

This segment of the Levisa Fork is classified as Warmwater Aquatic Habitat, Primary/Secondary Contact Recreation, and Domestic Water Supply.

c. Stream Segment Antidegradation Categorization

This segment of the Levisa Fork is categorized as a "High Quality" water pursuant to the requirements of 401 KAR 5:030, Section 1(3)(a)1.

d. Stream Low Flow Conditions

The 7-day, 10-yr (7Q10) low flow event for this stream at the point of discharge is 100 cfs.

3A. REPORTED DISCHARGE AND PROPOSED LIMITS - Municipal Facility

Outfall Number 001 - Wastewater Treatment Plant

Effluent Characteristics	Reported Discharge[1]			Proposed Limits		Effluent Guidelines and Applicable Water Quality Criteria
	Average Monthly Value	Lowest Monthly Value	Highest Monthly Value	Monthly Average	Maximum Weekly Average	
Flow, MGD (Design Flow = 2.0 MGD)	0.97	N/R	4.21	Report	Report[2]	401 KAR 5:065
BOD_5, mg/l	5.3	N/R	42	30	45	401 KAR 5:031 401 KAR 5:045
TSS, mg/l	9.2	N/R	88	30	45	401 KAR 5:045
Fecal Coliform, (N/100)	N/R	N/R	327	Remove from permit		401 KAR 5:031 401 KAR 5:045
Escherichia Coli, (N/100)	N/R	N/R	--	130[3]	240[3]	401 KAR 5:031 401 KAR 5:045
Ammonia (as N), mg/l	2.4	N/R	16.0	20	30[2]	401 KAR 5:080
Dissolved Oxygen, mg/l	N/R	5.6	N/R	Not less than 2		401 KAR 5:031 401 KAR 5:045
pH, standard units	N/R	6.1	7.6	6.0 (min) - 9.0 (max)		401 KAR 5:031 401 KAR 5:045
Total Residual Chlorine, mg/l	N/R	N/R	0.071	0.011	0.019[3]	401 KAR 5:031 401 KAR 5:045
Total Phosphorus (as P), mg/l	--	--	--	Report	Report	401 KAR 5:031
Total Nitrogen (as N), mg/l	--	--	--	Report	Report	401 KAR 5:065
Total Recoverable Copper, mg/l	< 0.003	N/R	0.0080	Report	Report	401 KAR 5:065
Total Recoverable Zinc, mg/l	0.0394	N/R	0.0686	Report	Report	401 KAR 5:031
Total Recoverable Cadmium, mg/l	< 0.002	N/R	< 0.002	Report	Report	401 KAR 5:031
Total Recoverable Lead, mg/l	< 0.002	N/R	0.0072	Report	Report	401 KAR 5:031
Acute Toxicity units (TU_A)	N/R	N/R	<1.00	N/A	1.00[2]	401 KAR 5:031

1 Reported discharge values were compiled from the past sixty-one (61) months of effluent DMR data, from May 2002 through May 2007.
2 Daily maximum
3 Escherichia Coli reporting shall be monthly geometric mean and maximum weekly geometric mean.

The abbreviation N/R means "Not Reported" and N/A means "Not Applicable".

3B. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 001 - Municipal Wastewater

b. Effluent Characteristics

Flow (MGD)
Total Suspended Solids
pH
Dissolved Oxygen
Total Phosphorus (as P)
Total Recoverable Cadmium
Total Recoverable Lead
Hardness as Calcium Carbonate
Biochemical Oxygen Demand (5-day),
Escherichia Coli
Ammonia Nitrogen
Total Residual Chlorine (TRC)
Total Nitrogen (as N)
Total Recoverable Copper
Total Recoverable Zinc
Acute Toxicity

c. Pertinent Factors

This municipality does not have an approved pretreatment program. The permittee may be required to develop a local pretreatment program to enforce the requirement of 40 CFR Part 403, and other requirements pursuant to state regulation 401 KAR 5:057, Section 6.

Additional monitoring will be required during the first year of the permit as stated in Part III. The KPDES application Form A has been revised to conform with EPA Form 2A for municipals.

d. Monitoring Requirements

The monitoring frequency, location, and method of measurement for all parameters within this permit are consistent with 401 KAR 5:065, Section 2 (8).

Total Phosphorus and Total Nitrogen
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8)(a).

Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Zinc, and Hardness as Calcium Carbonate
The monitoring requirements for the above permit parameters are consistent with 401 KAR 5:031.

e. Justification of limits

The Kentucky regulations cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

Escherichia Coli and Fecal Coliform Bacteria
The limits for Escherichia Coli are consistent with the requirements of 401 KAR 5:031, Section 7, 401 KAR 5:045, Section 4 and 401 KAR 5:080, Section 1(2)(c)2. The removal of Fecal Coliform Bacteria is consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. Although Fecal Coliform Bacteria has been used as an indicator of fecal contamination it does contain other species that are not necessarily fecal in origin. EPA recommends Escherichia Coli, which is specific to fecal material from warm blooded animals, as the best indicator of health risks from contact with recreational waters. Therefore, it is the "Best Professional Judgment" (BPJ) of the Division of Water that Escherichia Coli replace Fecal Coliform Bacteria on this permit.

Biochemical Oxygen Demand (5-day), Ammonia Nitrogen, Total Suspended Solids, pH, and Dissolved Oxygen
The effluent limitations for the above permit parameters are consistent with 401 KAR 5:031, Section 4 and 401 KAR 5:045, Sections 3 and 5.

Total Residual Chlorine (TRC) and Acute Toxicity
The effluent limitations for the above permit parameters are consistent with 401 KAR 5:031.

4A. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge – Outfall numbers 002, 003, 004 (Combined Sewer Overflows)

Overflow Characteristics	Reported Discharge			Proposed Limits		Applicable Water Quality Criteria and/or Effluent Guidelines
	Average Monthly Value	Lowest Monthly Value	Highest Monthly Value	Monthly Average	Weekly Average	
Number of overflow events	N/R	N/R	N/R	Yearly Total		401 KAR 5:065
Event duration (hours)	N/R	N/R	N/R	Yearly Total		401 KAR 5:065
Area rainfall (inches)	N/R	N/R	N/R	Yearly Total		401 KAR 5:065
Estimated discharge volume (gallons)	N/R	N/R	N/R	Yearly Total		401 KAR 5:065

The abbreviation N/R means "Not Reported" on renewal application. The permittee was not previously required to report this information the Discharge Monitoring Reports.

Overflow events at CSO locations are required to be reported to the DOW Field Office pursuant to 401 KAR 5:015. This information is also a requirement of the Nine Minimum Controls and should be included in the annual CSOP report.

An event is a discharge from a combined sewer outfall. A wet weather event is a discharge that occurs in direct response from rainfall or snowmelt. A dry weather event is a discharge that occurs for reasons other than rainfall or snowmelt. For the purposes of this monitoring form, all events will be totaled on a monthly basis for each combined sewer outfall.

Volume estimation method for quantifying overflow events should be a system-wide method to provide consistency for reporting at each outfall.

A parameter for wet weather flow bypasses at the WWTP has been added to the annual monitoring reports. Only the most significant (maximum) bypass event for the year will be required to be documented as a flow rate (MGD).

4B. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Outfall Number(s)

Combined Sewer Overflows - 002, 003, 004

b. Overflow Characteristics

Number of Overflow Events
Event Duration
Area Rainfall
Estimated Discharge Volume

c. Pertinent Factors

A portion of Pikeville's collection system is combined, meaning that it is designed to collect sanitary wastewater, stormwater, and urban runoff. The collection system is designed to transport all flows to the wastewater treatment plant during periods of dry weather. However, during periods of heavy rain, the collection system has the potential to overflow through constructed outfalls into rivers and streams prior to the headworks of the treatment plant. These outfall locations are permitted and are called combined sewer overflows, or CSOs.

Combined sewer overflows (CSOs) are point sources subject to NPDES permit requirements including both technology-based and water quality-based requirements of the Clean Water Act. CSOs are not subject to secondary treatment regulations applicable to publicly owned treatment works.

A Division of Water inspection of Pikeville's combined sewer system was performed on August 10, 2006. There has not been an overflow in Pikeville's system in two years.

The requirement for submitting an annual update to the Combined Sewer Operational Plan (CSOP) will no longer be necessary because remedial measures within the Consent Decree will account for reporting of overflows and Nine Minimum Controls compliance.

d. Monitoring Requirements

Number of Overflow Events, Event duration, Area Rainfall, and Estimated Discharge Volume

The monitoring requirements for these occurrences are consistent with the requirements of 401 KAR 5:065, Section 2(8). Number of Overflow Events, Event Duration, Area Rainfall, and Estimated Discharge Volume shall be reported as yearly totals.

5. ANTIDEGRADATION:

The development of this permit commenced prior to the April 12, 2005 EPA approval of Kentucky's Antidegradation Regulation promulgated on September 8, 2004. Therefore, previous antidegradation requirements are applicable. The conditions of 401 KAR 5:029, Section 1 have been satisfied by this permit action. A review under 401 KAR 5:030, Section 1 is not applicable.

6. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

The permittee will comply with all effluent limitations by the effective date of the permit.

7. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

Overflow monitoring requirements for CSOs have been added to the permit to help demonstrate compliance with the 1994 EPA CSO Control Policy and 401 KAR Chapter 5.

8. PERMIT DURATION

Five Years.

The receiving waterbody at the point of discharge is located in the Big and Little Sandy / Tygarts Unit Basin as part of the Watershed Basin Management Framework.

9. PERMIT INFORMATION

The application, draft permit, fact sheet, public notice, comments received, and additional information is available from the Division of Water at 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601.

10. REFERENCES AND CITED DOCUMENTS

All material and documents referenced or cited in this fact sheet are a part of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the person listed below.

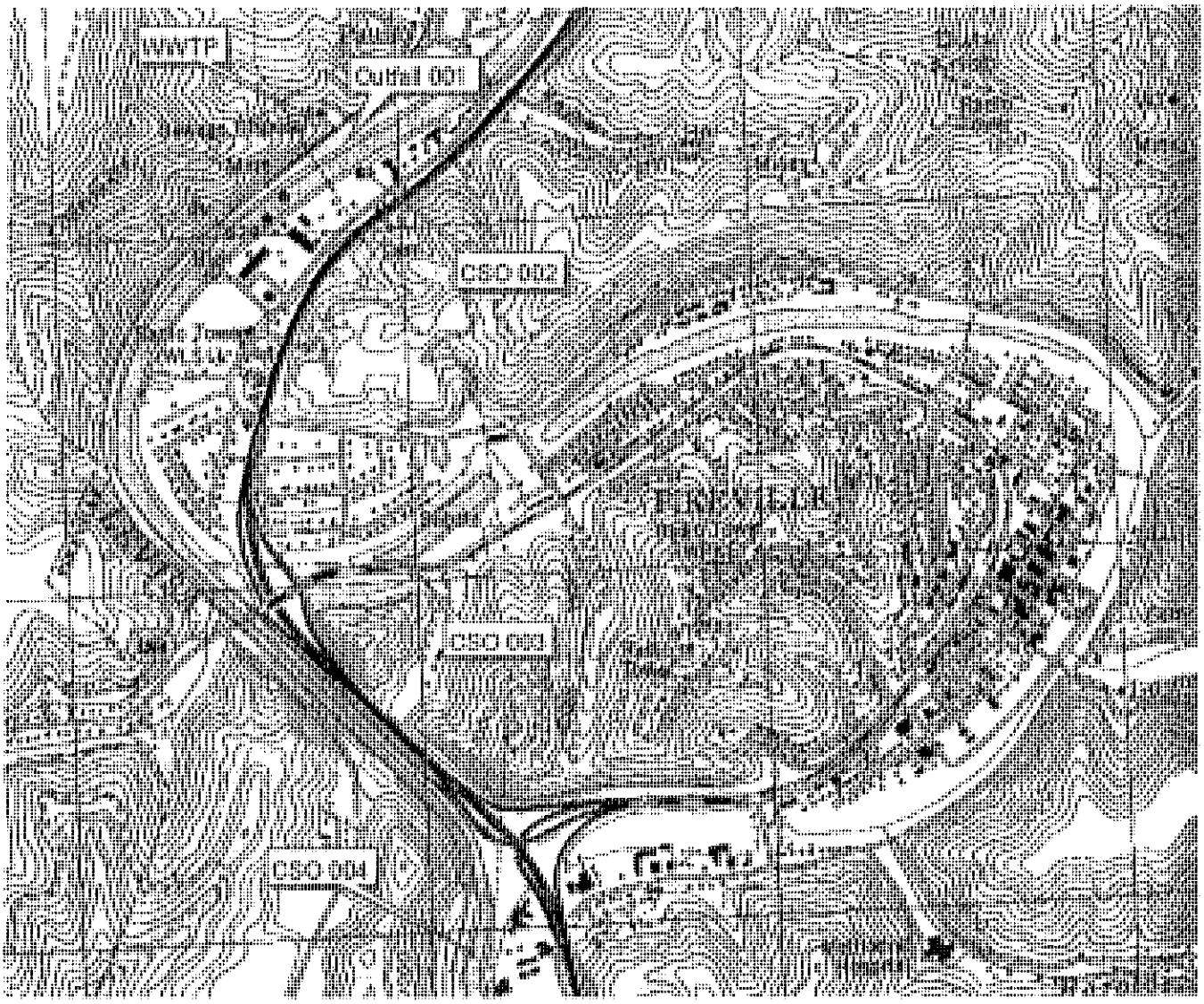
11. CONTACT

For further information on the draft permit or comment process, contact the individual identified on the Public Notice or the Permit Writer – Barry Elmore at (502) 564-3410, extension 459, or email barry.elmore@ky.gov.

12. PUBLIC NOTICE INFORMATION

Please refer to the attached Public Notice for details regarding the procedures for a final decision, deadline for comments and other information required by 401 KAR 5:075, Section 4(2)(e).

Pikeville Wastewater Treatment Plant



COPY

ERNIE FLETCHER
GOVERNOR

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601-1190
www.kentucky.gov

TERESA J. HILL
SECRETARY

October 30, 2007

Mr. Greg May
City of Pikeville
117 College Street
Pikeville, Kentucky 41501

Re: Pikeville Wastewater Treatment Plant
KPDES No.: KY0025291
Pike County, Kentucky

Dear Mr. May:

Enclosed is the Kentucky Pollutant Discharge Elimination System (KPDES) permit for the above-referenced facility. This action constitutes a final permit issuance under 401 KAR 5:075, pursuant to KRS 224.16-050.

This permit will become effective on the date indicated in the attached permit provided that no request for adjudication is granted. All provisions of the permit will be effective and enforceable in accordance with 401 KAR 5:075, unless stayed by the Hearing Officer under Sections 11 and 13.

Any demand for a hearing on the permit shall be filed in accordance with the procedures specified in KRS 224.10-420, 224.10-440, 224.10-470 and any regulations promulgated thereto. Any person aggrieved by the issuance of a permit final decision may demand a hearing, pursuant to KRS 224.10-420(2), within thirty (30) days from the date of the issuance of this letter. Two (2) copies of request for hearing should be submitted in writing to the Environmental and Public Protection Cabinet, Office of Administrative Hearings, 35-36 Fountain Place, Frankfort, Kentucky 40601 and the Commonwealth of Kentucky, Environmental and Public Protection Cabinet, Division of Water, 14 Reilly Road, Frankfort, Kentucky 40601. For your record keeping purposes, it is recommended that these requests be sent by certified mail. The written request must conform to the appropriate statutes referenced above.

If you have any questions regarding the KPDES decision, please contact Barry Elmore, Municipal Permit Section, KPDES Branch, at (502) 564-8158, extension 459.

Further information on procedures and legal matters pertaining to the hearing request may be obtained by contacting the Office of Administrative Hearings at (502) 564-7312.

Sincerely,

Sandra L. Gruzesky, Acting Director
Division of Water

SLG:NG:ng
Enclosure
c: Division of Water Files

Kentucky Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division of Waste Management

SPECIAL WASTE MANAGEMENT FACILITY PERMIT

Permittee: **CITY OF PIKEVILLE**
118 College Street
Pikeville, Kentucky 41501

Facility: **CITY OF PIKEVILLE LANDFARM**
Sites as shown on page 4

The Division of Waste Management hereby grants the above-named facility a permit to engage in the activity specified below. This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto and is subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet and/or other state and local agencies.

--See Pages 2 through 4--

No deviation from the plans and specifications submitted with your application or the conditions specified herein is allowed, unless authorized in writing from the Division of Waste Management. Violation of the terms and conditions specified herein shall render this permit null and void. All rights of inspection by representatives of the Division of Waste Management are reserved. Conformance with all applicable Waste Management Regulations is the responsibility of the permittee. Receipt of the permit fee and bond amount specified below is hereby acknowledged.

PERMIT TYPE:	Construction/Operation	PERMIT NUMBER:	098-00042
TYPE OF ACTIVITY:	Type B Landfarming		
BOND:		COUNTY:	Pike
INSTRUMENT TYPE:	NA		
INSTRUMENT NUMBER:	NA		
AMOUNT:	NA		
ACRES:			
WASTE DISPOSAL AREA:	128.2		
PERMIT AREA:	128.2	Issued this July day of 2nd 2003	
PERMIT FEE:	NA		
EFFECTIVE DATE:	July 2, 2003	Robert H. Daniell, Director	
EXPIRATION DATE:	July 2, 2013	Robert W. Logan, Commissioner	

SOLID WASTE DISPOSAL FACILITY PERMIT - Continued

1. The permittee shall comply with 401 KAR Chapter 45 for special waste facilities and the Environmental Performance Standards of 401 KAR 30:031.

2. The permittee shall operate in accordance with the application submitted for this permit and the permit application plans and narrative approved July 2, 2003.

3. The permittee shall land apply only wastewater treatment biosolids generated by the City of Pikeville, or other wastes for which specific written approval has been granted by the cabinet.

4. The permittee shall maintain the required buffer distances around all subplots, except where variances have been requested in the permit application in accordance with 401 KAR 30:020 Section 2 and granted by issuance of this permit.

5. The permittee shall not land apply wastewater treatment biosolids that exceed the metal concentration limits listed in 401 KAR 45:100, Section 2 (2) for a Type B landfarm without first receiving written approval for a variance from the cabinet.

6. The permittee shall stake, delineate by permanent natural or artificial features, or otherwise clearly mark each subplot either permanently or at the time biosolids are applied.

7. The permittee shall place a sign at the entrance to each farm area. The sign shall indicate the source and type of waste and the type of operation, the name of the operator, the permit number 098-00042, the contact person, and contact telephone number.

8. The permittee shall conspicuously display a copy of the construction/operation permit at the generating facility.

9. The permittee shall conspicuously display a copy of the operator's certification at the office of the facility operator, or the certificate shall be carried on the person of the certified operator(s) during operations.

10. The permittee shall provide a means to restrict access to the areas receiving biosolids for a period of twelve (12) months after each application.

11. The permittee shall ensure the soil pH of each subplot on which biosolids have been applied is maintained at 6.2 SU or greater during crop production, hay production, or grazing. The permittee shall allow hay to be harvested not sooner than 30 days following application of biosolids. The permittee shall ensure compliance with the food crop restrictions of 40 CFR 503 where the federal rule is more stringent than 401 KAR 45:100 Section 6 (7).

SOLID WASTE DISPOSAL FACILITY PERMIT - Continued

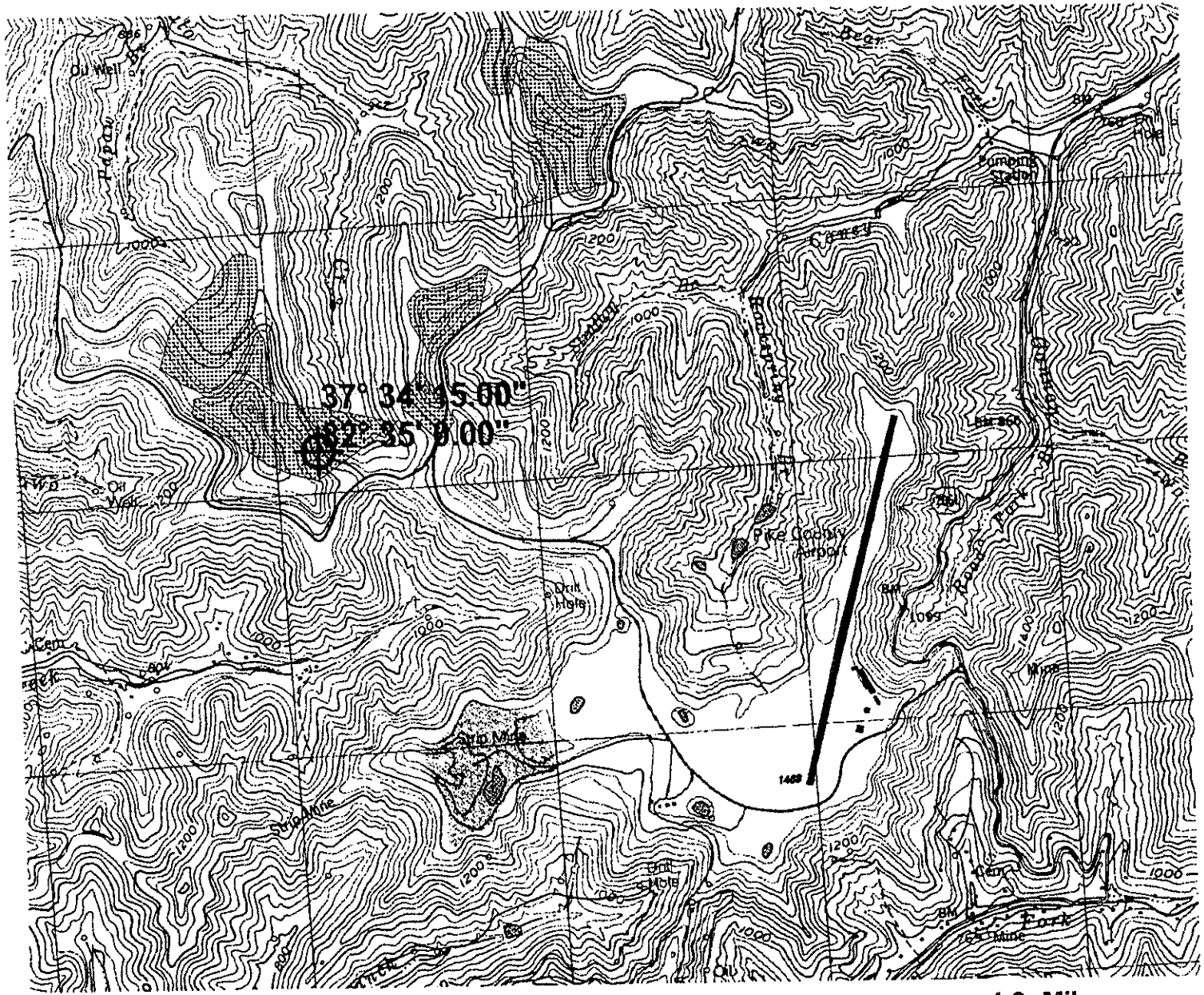
12. The permittee shall establish background soils heavy metals (pollutant) concentrations individually for each subplot with composite samples representative of twenty (20) acres or less. Soil sampling for pH, extractable P, and extractable K shall continue annually for each subplot each year special wastes are applied. Soil sampling for heavy metals shall be conducted every five (5) years for each subplot receiving waste during the previous five year period.

13. The permittee shall submit an annual landfarming review on or before February 19 for the previous calendar year, for each year until closure.

14. The permittee shall maintain a two-year right of reentry following closure of the landfarming site.

City of Pikeville Landfarm
Permit# 098-00042
Pike County
Approved 07-02-03

Pikeville landfarm.shp
County



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HENRY C. LIST
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
14 REILLY RD
FRANKFORT KY 40601-1190

July 2, 2003

Honorable Frankie Justice
Mayor, City of Pikeville
118 College Street
Pikeville, Kentucky 41501

RE: Type B Special Waste Landfarming Permit
City of Pikeville
Permit #098-00042
Pending Application #098-00042 LB1 NW1
Pike County

Dear Mayor Justice:

The Division of Waste Management (DWM) has reviewed your application for the above referenced special waste facility and found it to be complete. As specified in the application, you will be operating a Type B Special Waste Landfarm in Pike County. You are permitted to apply only wastewater treatment biosolids generated by the City of Pikeville. This registration is accepted with the conditions listed on the enclosed permit.

You should review the permit and the application submitted for this permit. In the event you do not agree with the terms of these documents, you must notify this office in writing within thirty days of receipt of this letter. Unless modified in accordance with 401 KAR 45:040, you are expected to comply with the terms of the applicable regulations, the permit application and the permit. You are advised that you have the right to file petition for an administrative hearing pursuant to KRS 224.10-420(2).

This acceptance does not supersede any local or county land use ordinances with which you must comply. You are also advised this state permit does not supersede or in any way exempt this operation from compliance with the federal biosolids regulation, 40 CFR Part 503, including monitoring, record keeping, reporting and permitting requirements. If you have any questions, please contact Bob Bickner at (502) 564-2225, extension 627 or Frank Whitney at extension 271.

Sincerely,

R. D. Gruzesky

Ronald D. Gruzesky, P.E.
Manager, Solid Waste Branch
Division of Waste Management

RDG/RAB/fdw

c: G. Todd Stevens, 103 Fieldview Dr., Versailles, KY 40383
Hazard Regional Office
Madolyn Dominy, EPA Region IV
DWM fileroom
Reading file

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
CIVIL ACTION NO. 07-CI- 01073

COMMONWEALTH OF KENTUCKY
ENVIRONMENTAL AND PUBLIC
PROTECTION CABINET — PLAINTIFF

V. Clean Water **CONSENT JUDGMENT**

CITY OF PIKEVILLE — DEFENDANT

****

The parties to this Consent Judgment, the Commonwealth of Kentucky, by and through its Environmental and Public Protection Cabinet (hereinafter the "Cabinet"), and the City of Pikeville (hereinafter "Defendant" or "Pikeville" or "the city") state:

RECITALS

1. The Cabinet is charged with the statutory duty of enforcing Kentucky Revised Statute ("KRS") Chapter 224, the Clean Water Act (CWA) and the regulations promulgated pursuant thereto.

2. The Defendant is a third class city pursuant to KRS 081.00-010. The Defendant owns and operates a sewer utility that serves a population of 10,000 people. The Defendant owns and operates a sewage system with a treatment plant and permitted outfall in Pike County, Kentucky (hereinafter "system" or "sewage system"). The Defendant holds KPDES Permit No. KY0025291 issued by the Division of Water for discharges into the waters of the Commonwealth.

3. The Defendant owns and operates a wastewater collection system in Pike County. The wastewater collection system consists of a separate sanitary sewer system ("SSS") and a

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
CIVIL ACTION NO. 07-CI- _____

COMMONWEALTH OF KENTUCKY
ENVIRONMENTAL AND PUBLIC
PROTECTION CABINET PLAINTIFF

V. **CONSENT JUDGMENT**

CITY OF PIKEVILLE DEFENDANT

* * * * * * * * * * * *

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3. The Defendant owns and operates a wastewater collection system in Pike County. The wastewater collection system consists of a separate sanitary sewer system ("SSS") and a

combined sewer system ("CSS"). The wastewater collection system transports wastewater to a treatment plant (WWTP) owned and operated by the Defendant.

4. This Consent Judgment between the Cabinet and the Defendant addresses unauthorized discharges and discharges from the combined sewer overflow outfalls ("CSO Outfalls") identified in the KPDES Permit and requires the Defendant to finalize, develop, submit and implement plans for the continued improvement of the Sewage System, including the WWTP.

5. Pursuant to KPDES Permit No. KY0025291 for the Pikeville Wastewater Treatment Plant, the Defendant is required to maintain an approved combined sewer operational plan ("CSOP") implementing combined sewer overflow ("CSO") controls for the CSS in accordance with EPA's 1994 CSO Policy, 59 Fed. Reg. 18688 ("CSO Control Policy") and the state CSO control strategy. The KPDES permit requires the Defendant to implement the nine minimum controls ("NMC") delineated in EPA's 1994 CSO Policy. EPA's 1994 CSO policy also provides for the development and implementation of a Long-term CSO Control Plan ("LTCP").

6. Section 402 (q)(1) of the CWA, 33 U.S.C. § 1342(q)(1) and the CSO Policy incorporated by reference into the CWA and 401 KAR 5:002 Section 3, require the Defendant to develop an LTCP and implement measures to abate the impact of CSOs on water quality in waters of the United States. The Defendant qualifies for small system considerations under the CSO Control Policy.

7. Pikeville is identifying and eliminating points in the city's sewer system where stormwater enters the sanitary sewers creating combined storm and sanitary flow. This program entails closed circuit television (CCTV) documentation of points where stormwater enters the

sanitary sewers; then, upon completion of the diagnostic work in a particular targeted area, the city initiates correction of that stormwater intrusion by sealing those points and separating storm and sanitary flow. In the previous city fiscal year (July 1, 2006 – June 30, 2007), the city contends that it eliminated thirty-four (34) points where combined storm and sanitary flow was found. Pikeville's City Council contends that it has funded this endeavor for three (3) years and hereby commits to continue funding until the separation of sewers is completed.

8. Authorized representatives of the Cabinet have identified the following alleged violations of KRS Chapter 224 in its complaint in this action which include the following:

a. KRS 224.70-110 - Discharge of contaminants or pollutants into waters of the Commonwealth resulting in degradation of water quality; and

b. 401 KAR 5:065 - Failure to properly operate and maintain the system at all times in compliance with its KPDES permit.

9. Pikeville's KPDES permit lists three CSO points, designated outfalls 002, 003, and 004. Although the Pikeville system has not experienced a CSO at Lift Station Number 7 (CSO Outfall 002) since March 3, 1999, at the Poor Farm Lift Station (CSO Outfall Number 003) since August 22, 2006, and at the Huffman Lift Station (CSO Outfall Number 004) since June 10, 1998, the Defendant is hereby placed under a Consent Judgment to resolve these alleged violations and establish an enforceable mechanism and schedule for completing efforts to ensure its CSOs are in compliance with the CWA, KRS Chapter 224 and 401 KAR Chapter 5, and its KPDES permit for its sewage system.

10. The Cabinet and the Defendant agree and recognize that the process to comply with the KPDES permit and upgrade the Defendant's CSS and WWTP to eliminate any unauthorized discharges and remediate discharges from the CSO locations identified in

Defendant's KPDES permit and CSOP is an ongoing and evolving effort from the assessment process to the design and construction of necessary infrastructure to meet permit conditions. This process requires efforts that may include, but are not limited to, characterizations, modeling, assessments, engineering design studies, implementation of compliance measures, and construction projects that shall adequately ensure compliance with permit conditions under applicable law. The Cabinet and the Defendant recognize that it will take many years to implement these efforts and that this Consent Judgment is the appropriate mechanism for controlling these efforts.

11. The Defendant neither admits nor denies the violations described above but agrees to the entry of this Consent Judgment to resolve these violations. This consent judgment shall not be considered an admission of liabilities on the part of the defendant.

12. **NOW, THEREFORE,** in the interest of settling and resolving all civil claims and controversies involving the alleged violations described above and in the Cabinet's Complaint filed in Franklin Circuit Court, before taking any testimony and without adjudication of any fact or law, the Parties hereby consent to the entry of this Consent Judgment. **ACCORDINGLY, IT IS HEREBY ORDERED AND ADJUDGED** as follows:

REMEDIAL MEASURES

13. If Pikeville completes separation of all its combined sewers as described in paragraph 7 above, and if no CSOs occur anywhere in the Pikeville system between the date of entry of this Consent Judgment and the date of completion of the sewer separation project described above, the Cabinet may elect to remove Pikeville from the list of Kentucky communities which are failing to comply with the 1994 EPA CSO Control Policy.

14. Within nine (9) months of the entry of this Consent Judgment, Pikeville shall submit a map of its entire sewage system, including any satellite systems which discharge wastewater to the Pikeville system. The map shall delineate the combined and separate sanitary portions of the system and shall indicate all CSO outfalls, recurring SSOs and other recurring points of unauthorized discharges from the Pikeville system. The map shall clearly display all sewer collection lines, with the exception of service laterals, with directional flows and sizes of those lines being clearly shown. Additionally, the map shall indicate sewer system sub-basins, manholes and pump stations.

15a. Within thirty (30) days of the entry of this Consent Judgment, Pikeville shall submit to the Division of Enforcement (DENF) a copy of the current version of Pikeville's Sewer Use Ordinance (SUO), indicating the portions of that ordinance which pertain to and prohibit illicit discharges to the Pikeville sewage system, including discharges from roof drains, downspouts, sump pumps, yard drains, patio drains, leaks in private laterals, and other illicit connections of stormwater to the sanitary sewer system.

b. If Pikeville's SUO is deemed by the Cabinet to be inadequate in addressing illicit connections to Pikeville's sewage system, Pikeville shall, within one hundred eighty (180) days of receipt of notification from the Cabinet that the SUO is inadequate, revise its SUO to adequately address such illicit connections and submit the revised SUO within thirty (30) days of SUO revision to DENF for Cabinet review and approval.

c. Pikeville shall, upon receiving notification from the Cabinet that its SUO adequately addresses illicit connections to its sanitary sewers, notify its customers within forty-five (45) days of the existence of the SUO. Within ninety (90) days of receipt of such notification from the Cabinet, Pikeville shall commence enforcement of these SUOs with respect

to illicit connections to the sanitary sewers. This does not extend any requirement to SUOs that arise under other regulatory authority.

16. Pikeville shall, in its documentation and reporting of overflows to the Division of Water, provide estimated volumes of all reported overflows, bypasses and other releases. While these volumes to be reported are estimates, the method of estimation shall be rationally justifiable, and the same method shall be utilized for all reportable events in the absence of different circumstances.

17. Pikeville shall, by April 1, 2010, complete the identification of all points in its sewer service area where storm flow is entering sanitary sewers to create combined sewer flow. Pikeville shall submit documentation of that CCTV analysis to the Division of Enforcement by July 31 of each year for the work performed during the previous fiscal year, until this portion of the CCTV program is complete.

18. **Early Action Plan** – The Defendant shall prepare and submit an Early Action Plan for Cabinet review and approval according to the timeframes set forth herein. The Early Action Plan shall include the following components:

a. **Nine Minimum Controls (NMC) Compliance.** No later than twelve (12) months after the entry of this Consent Judgment, the Defendant shall submit documentation demonstrating the status of Defendant's compliance with the NMC requirements within the CSS as set forth in the CSO Control Policy. If the Defendant cannot document in the Early Action Plan that all NMC requirements are being implemented in accordance with the NMC guidance, the Early Action Plan shall specify the activities to be performed, including schedules, so that compliance with the NMC requirements is achieved by no later than twenty-four

(24) months after the entry of this Consent Judgment. The documentation of the compliance status and the proposed activities shall be consistent with the "Guidance for Nine Minimum Controls", EPA 832-B-95-003, May 1995. The documentation submitted shall demonstrate compliance with the following controls:

1. Proper operation and regular maintenance programs for the CSS and the CSOs;
2. Maximum use of the collection system for storage;
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized;
4. Maximization of flow to the WWTP for treatment;
5. Prohibition of CSOs during dry weather, including provision for backup power where appropriate;
6. Control of solid and floatable materials, including installation of devices where appropriate;
7. Pollution prevention;
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts, including, if appropriate, improving the current signage at each CSO location to an easily readable type size and style; and
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Upon review of the NMC Compliance portion of the Early Action Plan, the Cabinet may, in whole or in part, (1) approve or (2) provide comments to the Defendant identifying the deficiencies. Upon receipt of Cabinet comments, the Defendant shall have sixty (60) days to revise and resubmit the NMC Compliance portion of the Early Action Plan for review and approval, subject only to Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon resubmittal, the Cabinet may, in whole or in part, (1) approve or (2) disapprove and provide comments to the Defendant identifying the deficiencies. Upon such resubmittal, if any part of the NMC Compliance portion of the Early Action Plan is disapproved, the Cabinet may deem the Defendant to be out of compliance with this Consent Judgment for failure to timely submit such portion and may assess stipulated penalties pursuant to this Consent Judgment, subject only to Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon Cabinet approval of all or any part of the NMC Compliance portion of the Early Action Plan, the NMC Compliance portion, or any approved part thereof (provided that the approved part is not dependent upon implementation of any part not yet approved), shall be deemed incorporated into this Consent Judgment as an enforceable requirement of this Consent Judgment. This does not require an amendment request pursuant to paragraph 49 of this Consent Judgment.

b. **Capital Improvement Project Lists.** The Early Action Plan shall include lists

that identify projects that shall be initiated by the Defendant prior to the implementation of the LTCP. The Capital Improvement Project List shall include, at a minimum, the projects listed in Exhibit 1, which the Defendant represents shall be completed before the dates listed in the Exhibit and which are calculated to reduce the frequency, duration and volume of unauthorized discharges and discharges from the CSO outfalls identified in the KPDES permit. Estimated project costs are also based on Defendant's estimates. The Defendant shall certify to the Cabinet the completion of any project in the annual report following the project's completion.

c. **CMOM (Capacity, Management, Operation and Maintenance) Programs Self-Assessment.** Not later than nine (9) months after the entry of this Consent Judgment, the Defendant shall submit a CMOM Programs Self-Assessment of the Defendant's combined and separate sewer collection systems, consistent with US EPA Region IV methodology, to ensure that the Defendant has CMOM Programs in place that are effective at eliminating SSOs, including any unauthorized discharges, within the combined and separate sewer collection systems. This Self-Assessment shall include an evaluation of, and recommendation of improvements to each CMOM Program to ensure that such Programs contain the following key CMOM elements: defined purpose(s) and written defined goal(s) that are documented in writing with specific details; implemented by well trained personnel; established performance measures; and written procedures for periodic review. Recommended improvements shall include schedules for implementation. The Cabinet shall have forty-five (45) days to review the CMOM Programs Self-

Assessment and recommended improvements and schedules. If the Cabinet does not accept the CMOM Programs Self-Assessment or recommended improvements and schedules, modifications to the CMOM Programs Self-Assessment shall be made in accordance with the Cabinet's comments and resubmitted by the Defendant within sixty (60) days of receipt of the aforementioned comments, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon resubmittal, the Cabinet may, in whole or in part, (1) approve or (2) disapprove and provide comments to the Defendant identifying the deficiencies. Upon such resubmittal, if any part of the CMOM Programs Self-Assessment portion of the Early Action Plan is disapproved, the Cabinet may deem the Defendant to be out of compliance with this Consent Judgment for failure to timely submit such portion and may assess stipulated penalties pursuant to this Consent Judgment, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon Cabinet approval of all or any part of the CMOM Programs Self-Assessment, the CMOM Programs and recommended improvements and schedules, or any approved part thereof (provided that the approved part is not dependent upon implementation of any part not yet approved), shall be deemed incorporated into this Consent Judgment as an enforceable requirement of this Consent Judgment. This does not require an amendment request pursuant to paragraph 49 of this Consent Judgment.

d. **Sewer Overflow Response Protocol ("SORP").** Not later than nine (9) months

after the entry of the Consent Judgment, the Defendant shall submit a SORP in compliance with 401 KAR 5:015 for review and approval by the Cabinet, to establish the timely and effective methods and means of: (1) responding to, cleaning up, and/or minimizing the impact of all overflows, including unauthorized discharges; (2) reporting the location, volume, cause and impact of overflows, including SSOs and unauthorized discharges, to the Cabinet; and (3) notifying the potentially impacted public. The Cabinet shall have thirty (30) days to review the SORP.

If the Cabinet does not accept the SORP, the Defendant shall address the Cabinet's comments and resubmit the SORP within thirty (30) days of receipt of the aforementioned comments, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon resubmittal, the Cabinet may, in whole or in part, (1) approve or (2) disapprove and provide comments to the Defendant identifying the deficiencies. Upon such resubmittal, if any part of the SORP is disapproved, the Cabinet may deem the Defendant to be out of compliance with this Consent Judgment for failure to timely submit the SORP portion of the Early Action Plan and may assess stipulated penalties pursuant to this Consent Judgment, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment. If approved, the Defendant shall implement the SORP within thirty (30) days of receiving the Cabinet's approval. The Defendant annually shall review the SORP and propose changes as appropriate subject to Cabinet review and approval. The first review shall be completed no later than one year after the

approval of the initial SORPA copy of any future updates to the SORP shall also be provided to the Hazard Regional Office of the Division of Water within thirty (30) days of incorporation of the update.

Upon Cabinet approval of all or any part of the SORP, the SORP, or any approved part thereof (provided that the approved part is not dependent upon implementation of any part not yet approved), and any subsequently approved changes, shall be deemed incorporated into this Consent Judgment as an enforceable requirement of this Consent Judgment. This does not require an amendment request pursuant to paragraph 48 of this Consent Judgment.

19. **Sanitary Sewer Overflow Plan** – If, at any time during the term of this agreement, the Cabinet determines the existence of a recurring SSO or SSOs in Pikeville's SSS, Pikeville shall prepare and submit, for Cabinet review and approval, a Sanitary Sewer Overflow Plan ("SSOP") designed to eliminate SSOs and any unauthorized discharges in the SSS and CSS. An SSO or unauthorized discharge is considered recurring if it discharges at a frequency rate of at least twice in a successive twelve month period. The SSOP shall contain the long-term SSOP projects designed to minimize the frequency, volume and water quality impacts of SSOs, including schedules, milestones, and deadlines related to those long-term projects. The SSOP shall include, at a minimum, the following elements:

a. A map that shows the location of any known recurring SSOs and any recurring unauthorized discharges. The map shall include the areas and sewer lines that serve as a tributary to each recurring SSO or any recurring unauthorized discharge. Smaller maps of individual tributary areas also may be included to show the lines involved in more detail.

b. A description of each recurring SSO and unauthorized discharge location that includes:

(i) The frequency of the overflow or discharge;

(ii) The estimated volume of the overflow or discharge, both annually and by overflow event;

(iii) A description of the type of overflow, i.e. manhole, pump station, constructed discharge pipe, etc.;

(iv) The cause of overflows at that location;

(v) The receiving stream;

(vi) The immediate area and downstream general land use, including the potential for public health concerns;

(vii) A description of any previous (within the last 5 years), current, or proposed studies to investigate the overflow; and

(viii) A description of any previous (within the last 5 years), current, or proposed rehabilitation or construction work to remediate or eliminate the overflow.

c. A prioritization of recurring SSOs and recurring unauthorized discharge locations, based upon the frequency, volume and impact on the receiving stream and upon public health, and in coordination with the CMOM programs. Based upon this prioritization, the Defendant shall develop remedial measures and expeditious schedules for design, initiation of construction and completion of construction. Such schedules shall be phased based on sound engineering judgment and in no case shall extend beyond five (5) years after determination of the existence of the

recurring SSOs.

20. The Defendant may consider conventional and innovative or alternative designs as part of its SSOP, which may include: sewer rehabilitation, sewer replacement, sewer separation, relief sewers, above ground or below ground storage, high rate secondary treatment, illicit connection removal, remote wet weather secondary treatment facilities, pollution prevention, and other appropriate alternatives. Designs shall be based on sound engineering judgment and shall be in accordance with generally accepted engineering design criteria and may include interim remedial measures to reduce pollutant loading and improve water quality in the short term while alternatives for final remedial measures are being developed, evaluated and implemented.

21. Upon review of the SSOP, the Cabinet may, in whole or in part, (1) approve or (2) provide comments to the Defendant identifying the deficiencies. Upon receipt of Cabinet comments, the Defendant shall have sixty (60) days to revise and resubmit the SSOP for review and approval, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon resubmittal, the Cabinet may, in whole or in part, (1) approve or (2) disapprove and provide comments to the Defendant identifying the deficiencies. Upon such resubmittal, if any part of the SSOP is disapproved, the Cabinet may deem the Defendant to be out of compliance with this Consent Judgment for failure to timely submit such portion and may assess stipulated penalties pursuant to this Consent Judgment, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon Cabinet approval of all or any part of the SSOP, the SSOP or any approved part thereof (provided that the approved part is not dependent upon implementation of any part not yet approved), shall be deemed incorporated into this Consent Judgment as an enforceable

requirement of this Consent Judgment. This does not require an amendment request pursuant to paragraph 49 of this Consent Judgment.

22. **Long Term Control Plan**

a. (1) By July 1, 2010, Pikeville shall initiate the engineering design phase of a project to separate all sanitary and storm sewers in Pikeville's CSS;

(2) By July 1, 2014, Pikeville shall have completed construction of the project to separate all sanitary and storm sewers in its CSS;

(3) Pikeville shall provide documentation of these corrective actions and of the status of the project to the Division of Enforcement by July 31 of each year until the corrective actions are complete; and

(4) If Pikeville does not meet either or both of the deadlines contained in subparagraphs a(1) or a(2) above, then Pikeville shall submit to the Cabinet for review and approval an LTCP that complies with paragraph 22 of this Consent Judgment. The LTCP shall be due 90 days after the Cabinet notifies the city that an LTCP is required. This LTCP shall identify all points in the system where combined flow is occurring.

b. The LTCP shall specify the activities which demonstrate the Defendant's efforts to date to achieve compliance with the following goals:

(i) Bring all wet weather CSO discharge points into compliance with the Clean Water Act, KRS Chapter 224, 401 KAR 5:060 Section 5, and the Combined Sewer Overflow Control Policy 59 Fed. Reg. 18688 April 19, 1994 as incorporated by reference in 401 KAR 5:002 Section 3;

(ii) Minimize the impacts of CSOs on water quality, aquatic biota, and human health; and

(iii) Bring stakeholders into the planning, prioritization and selection of projects process.

c. The LTCP shall provide a detailed description of the manner in which the Defendant plans to address the goals enumerated in 21.b. above, including, at a minimum, the following elements:

(i) Characterization, monitoring, modeling activities, and design parameters as the basis for selection and design of effective CSO controls, including a general description of the land use in the immediate area of the overflow as well as downstream;

(ii) A public participation process that actively involves the affected public in the decision-making to select long-term CSO controls;

(iii) Consideration of sensitive areas as the highest priority for reducing or eliminating overflows;

(iv) Evaluation of alternatives that will enable the Defendant, in consultation with the Cabinet, water quality standards authority, and the public, to select CSO controls that will meet the requirements of the Act;

(v) Cost/performance considerations to demonstrate the relationships among a comprehensive set of reasonable control alternatives;

(vi) Operational plan revisions to include agreed-upon long-term CSO controls;

(vii) Maximization of treatment at the Defendant's existing wastewater treatment plant for wet weather flows;

(viii) Identification of and an implementation schedule for the selected CSO controls;

(ix) A post-construction compliance monitoring program adequate to verify compliance with water quality-based CWA requirements and ascertain the effectiveness of CSO controls;

(x) A general description of the land use in the immediate area of the overflow as well as downstream as part of the characterization of the CSOs; and

(xi) If the Defendant requests any consideration based on the small system consideration of the CSO Control Policy, a demonstration as to why such consideration is appropriate.

d. The Defendant's LTCP shall comply with the CSO policy and be consistent with EPA's "Combined Sewer Overflows: Guidance for Long-Term Control Plan," EPA 832-B-95-002, August 1995. The LTCP shall include schedules, deadlines and timetables for remedial measures that achieve full compliance with the criteria listed for the demonstrative approach or the presumptive approach at the earliest practicable compliance date considering physical and financial feasibility and other environmental factors. The demonstration of financial feasibility shall be based on "Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development" EPA 832-B-97-004, March 1997, or the equivalent. The Defendant may consider conventional and innovative or

alternative designs as part of each plan, including but not limited to: Sewer rehabilitation, sewer replacement, sewer separation, relief sewers, above ground or below ground storage, high rate secondary treatment, illicit connection removal, remote wet weather secondary treatment facilities, pollution prevention, and other appropriate alternatives. Designs shall be based on sound engineering judgment and shall be in accordance with generally accepted engineering design criteria and may include interim remedial measures to reduce pollutant loading and improve water quality in the short term while alternatives for final remedial measures are being developed, evaluated and implemented.

e. Upon review of the LTCP, the Cabinet may, in whole or in part, (1) approve or (2) provide comments to the Defendant identifying the deficiencies. Upon receipt of Cabinet comments, the Defendant shall have ninety (90) days to revise and resubmit the LTCP for review and approval, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon resubmittal, the Cabinet may, in whole or in part, (1) approve or (2) disapprove and provide comments to the Defendant identifying the deficiencies. Upon such resubmittal, if any part of the LTCP is disapproved, the Cabinet may deem the Defendant to be out of compliance with this Consent Judgment for failure to timely submit the LTCP and may assess stipulated penalties pursuant to this Consent Judgment, subject only to the Defendant's rights under the dispute resolution provisions of this Consent Judgment.

Upon Cabinet approval of all or any part of the LTCP, the LTCP or any approved part thereof (provided that the approved part is not dependent upon

implementation of any part not yet approved), shall be deemed incorporated into this Consent Judgment as an enforceable requirement of this Consent Judgment. This does not require an amendment request pursuant to paragraph 49 of this Consent Judgment.

REPORTING REQUIREMENTS

23. The Defendant shall submit an annual report for the twelve month period ending on December 31st no later than March 31st of each year to the Cabinet that describes its progress in complying with this Consent Judgment. The annual report shall include, at a minimum:

a. A detailed description of projects and activities conducted and completed during the past reporting period to comply with the requirements of this Consent Judgment, in Gantt chart or similar format;

b. An accounting of the current twelve month period and the cumulative reductions in volume and in number of occurrences of any unauthorized discharges from the SSS, CSS and WWTP and discharges from the Defendant's CSO locations identified in its KPDES permit;

c. The anticipated projects and activities that will be performed in the upcoming twelve month period to comply with the requirements of this Consent Judgment, in Gantt chart or similar format;

d. Any additional information necessary to demonstrate that the Defendant is adequately implementing its Early Action Plan, SSOP and LTCP;

e. A summary of the CMOM Programs implementation pursuant to this Consent Judgment, including a comparison of actual performance with any performance measures that have been established; and

f. A list of projects completed during the reporting period.

PENALTIES

24. The Defendant shall pay the Cabinet a civil penalty in the amount of one thousand dollars ($1,000), for violations described above. The amount of the civil penalty shall be tendered by Defendant to the Cabinet within 15 days after the Consent Judgment is entered by the Court.

STIPULATED PENALTIES

25. These provisions concerning stipulated penalties shall take effect upon entry of this Consent Judgment by the Court. The Defendant shall pay the Cabinet a stipulated penalty within fifteen (15) days of receipt of written notice from the Cabinet for failure to comply with any requirement of this Consent Judgment. The stipulated penalties shall be assessed as follows:

a. For failure to timely submit the Early Action Plan, or any specified portion thereof, the Cabinet may assess against the Defendant a stipulated penalty of two thousand dollars ($2,000). For each additional day that the Defendant remains out of compliance for failure to timely submit the Early Action Plan, or any specified portion thereof, the Cabinet may assess against the Defendant a stipulated penalty of one hundred dollars ($100) per day. This penalty is in addition to, and not in lieu of, any other penalty that could be assessed.

b. For failure to timely submit the Sanitary Sewer Overflow Plan, the Cabinet may assess against the Defendant a stipulated penalty of two thousand dollars ($2,000). For each additional day that the Defendant remains out of compliance for failure to timely submit the SSOP, the Cabinet may assess against the Defendant a stipulated penalty of one hundred dollars ($100) per day. This

penalty is in addition to, and not in lieu of, any other penalty that could be assessed.

c. For failure to timely submit the Long Term Control Plan, the Cabinet may assess against the Defendant a stipulated penalty of two thousand dollars ($2,000). For each additional day that the Defendant remains out of compliance for failure to timely submit the LTCP, the Cabinet may assess against the Defendant a stipulated penalty of one hundred dollars ($100) per day. This penalty is in addition to, and not in lieu of, any other penalty that could be assessed.

d. For each day that the Defendant fails to timely complete approved projects under the SSOP or LTCP, or any approved amendments thereof, the Cabinet may assess against the Defendant stipulated penalties for each project of one thousand dollars ($1,000) per day. This penalty is in addition to, and not in lieu of, any other penalty that could be assessed.

e. For failure to timely submit any report as required under this Consent Judgment, the Cabinet may assess against the Defendant a stipulated penalty of one thousand dollars ($1,000). For each day that the Defendant remains out of compliance for failure to timely submit any report as required under this Consent Judgment, the Cabinet may assess against the Defendant a stipulated penalty of one hundred dollars ($100) per day. This penalty is in addition to, and not in lieu of, any other penalty that could be assessed.

Upon termination of this Consent Judgment, no stipulated penalty shall be assessed if the Defendant has complied with all requirements of this Consent Judgment.

26. If the Defendant believes the request for payment of a stipulated penalty is erroneous or contrary to law, it may invoke the dispute resolution provisions of this Consent Judgment. Invoking the dispute resolution provisions does not automatically excuse timely payment of the penalty or the continuing accrual of stipulated penalties, unless agreed to by the Cabinet or stayed by the Court. If the Defendant invokes the dispute resolution provisions of this Consent Judgment under these circumstances, the Defendant shall deposit the amount of the stipulated penalty into an escrow account bearing interest on commercially reasonable terms, in a federally-chartered bank. The Defendant's deposit of the amount of the stipulated penalty into an escrow bearing account shall be deemed compliance with these requirements until final resolution of the dispute. Upon final resolution of the dispute, the Defendant shall, within five (5) days thereof, serve written instructions directing that the escrow agent, within fifteen (15) days thereof, cause the monies in the escrow account to be paid to the Cabinet in accordance with the procedures set forth in Paragraph 27 below, or returned to the Defendant, depending on the outcome of the dispute resolution process. The Defendant's failure to make timely payment of stipulated penalties shall constitute an additional violation of this Consent Judgment.

PAYMENT OF PENALTIES AND STIPULATED PENALTIES

27. Payment of all sums due to the Cabinet shall be by cashier's check, certified check, or money order, made payable to "Kentucky State Treasurer", and sent to:

Kentucky Department for Environmental Protection
Division of Enforcement
300 Fair Oaks Lane
Frankfort, KY 40601
Attention: Director

REVIEW OF SUBMITTALS

28. The Cabinet agrees to use its best efforts to expeditiously review and comment on submittals that the Defendant is required to submit to the Cabinet pursuant to the terms and

provisions of this Consent Judgment. If the Cabinet cannot complete the review of a submittal within ninety (90) days of receipt of the submittal, the Cabinet shall so notify the Defendant before the expiration of the ninety (90) day period. If the Cabinet fails to approve, provide comments or otherwise act on a submittal within ninety (90) days of receipt of the submittal, any subsequent milestone date dependent upon such action by the Cabinet shall be extended by the number of days beyond the ninety (90) day review period that the Cabinet uses to act on that submittal.

SUBMITTALS AND NOTICES

29. Unless otherwise specified or as may be changed from time to time, all plans, reports, notices, or any other written communications required to be submitted under this Consent Judgment by the Defendant to the Cabinet shall be sent to the following address:

Kentucky Department for Environmental Protection
Division of Enforcement
300 Fair Oaks Lane
Frankfort, KY 40601
Attn: Director

For verbal notifications: Jeffrey Cummins, or the current Director of the Division of Enforcement, at (502) 564-2150.

30. Unless otherwise specified, or as may be changed from time to time, all notices or any other written communications sent to the Defendant by the Cabinet shall be sent to the following address:

Public Works Director
City of Pikeville
306 Island Creek Road
Pikeville, KY 41501

For verbal communications: Greg May, Pikeville Director of Public Works at (606) 437-5114.

31. Notices, transmittals, and communications shall be deemed submitted on the date they are postmarked and sent by regular U.S. Mail or deposited with an overnight mail/delivery service.

32. Pikeville may request extensions of deadlines for submittal of documents for purposes of approval by the City of Pikeville. Any such request for extension shall be made in writing to the Director of the Division of Enforcement as described in Paragraph 42 of this Consent Judgment.

DISPUTE RESOLUTION

33. Any dispute that arises under or with respect to this Consent Judgment shall in the first instance be the subject of informal negotiations between the Parties. The Defendant shall invoke the informal dispute resolution procedures by notifying the Cabinet in writing of the matters(s) in dispute and of the Defendant's intention to resolve the dispute under these Paragraphs 33 and 34. The notice shall: (1) outline the nature and basis of the dispute; (2) include the Defendant's proposed resolution; (3) include all appropriate information or data relating to the dispute and the proposed resolution; and (4) request negotiations pursuant to this Paragraph to informally resolve the dispute. The Parties shall then attempt to resolve the dispute informally for a period of thirty (30) days from the date of the notice with the goal of resolving the dispute in good faith, without further proceedings. The period for informal negotiations shall not exceed thirty (30) days from the date of the original notice of this dispute, unless the Parties otherwise agree in writing to extend that period.

34. If informal negotiations are unsuccessful, the position of the Cabinet shall control unless, within thirty (30) days after the conclusion of the informal negotiation period, the Defendant seeks judicial review of the dispute by filing with the Court and serving on the

Cabinet a motion requesting judicial resolution of the dispute. The motion shall contain a written statement of the Defendant's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Judgment. The Cabinet shall respond to the Defendant's motion within thirty (30) days. Either Party may request an evidentiary hearing for good cause. The burden of proof is on the Defendant to demonstrate that its position on the matter in dispute meets the objectives of the Consent Judgment, any amendment to this Consent Judgment, the CWA and KRS Chapter 224. If the dispute is not resolved within the schedule identified for orderly implementation of the Consent Judgment in the Defendant's motion, the Defendant may request additional time beyond compliance schedules or deadlines in this Consent Judgment that are dependent upon the duration and/or resolution of the dispute.

FORCE MAJEURE

35. Following the entry of the Consent Judgment by the Court, the Defendant shall perform the requirements of this Consent Judgment and complete all remedial measures within the time limits set forth in this Consent Judgment unless the performance is prevented or delayed solely by events which constitute a force majeure.

36. A force majeure event is defined as any event arising from causes not reasonably foreseeable and beyond the control of the Defendant or its consultants, engineers, or contractors, including intervention in this litigation by third parties, which could not be overcome by due diligence and which delays or prevents performance as required by this Consent Judgment.

37. Force majeure events do not include unanticipated or increased costs of performance, changed economic or financial conditions, or failure of a contractor to perform or failure of a supplier to deliver unless such failure is, itself, the result of force majeure.

38. The Defendant shall notify the Director of the Division of Enforcement by telephone within ten (10) business days and in writing within fifteen business days after it becomes aware of events which it knows or should reasonably know may constitute a force majeure. The Defendant's notice shall provide an estimate of the anticipated length of delay, including any necessary period of time for demobilization and remobilization of contractors or equipment and a description of the cause of delay; a description of measures taken or to be taken by the Defendant to minimize delay, including a timetable for implementing these measures.

39. Failure to comply with the notice provision shall be grounds for the Cabinet to deny granting an extension of time to the Defendant. If any event is anticipated to occur which may cause a delay in complying with the terms of this Consent Judgment, the Defendant shall promptly notify the Director of the Division of Enforcement in writing within ten (10) business days of learning of the possibility of a force majeure event, if the event has not already occurred. The Cabinet will respond in writing to any written notice received.

40. If the Defendant demonstrates to the Cabinet that the delay has been or will be caused by a force majeure event, the Cabinet will extend the time for performance for that element of the Consent Judgment for a period not to exceed the delay resulting from such circumstances.

41. If a dispute arises over the occurrence or impact of a force majeure event and cannot be resolved, the Cabinet reserves the right to seek enforcement of this Consent Judgment and the Defendant reserves the right to invoke the dispute resolution provisions of this Consent Judgment. In any such dispute, the Defendant shall have the burden of proof that a violation of this Consent Judgment was caused by a force majeure event.

42. In the absence of force majeure conditions, upon agreement of the parties, extensions of no more than ninety (90) days of the time requirements contained in this Consent Judgment may be agreed to by the parties without Court approval. The parties, by agreement may extend deadlines in schedules set forth in plans and submittals approved pursuant to this Consent Judgment without providing notification to the Court.

CERTIFICATION OF SUBMISSIONS

43. In all notices, documents or reports submitted pursuant to this Consent Judgment, the Defendant shall, by signature of the authorized agent of the Defendant, sign and certify each such notice, document and report as follows:

> I certify under penalty of law that this document and all attachments were prepared under my 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.

RIGHT OF ENTRY

44. The Cabinet and its authorized representatives shall have authority at all times, upon the presentation of proper credentials, to enter the premises of the Defendant to:

a. Monitor the work required by this Consent Judgment;

b. Verify any data or information submitted to the Cabinet;

c. Obtain samples from any portion of the SSS, CSS or WWTPs, with the Defendant to be provided with the opportunity to collect and analyze a split sample(s);

d. Inspect and evaluate any portions of the SSS, CSS or WWTPs;

e. Inspect and review any records required to be kept under the terms and conditions

of this Consent Judgment or any KPDES permit, the CWA and KRS Chapter 224; and

f. Otherwise assess the Defendant's compliance with state and federal environmental laws and this Consent Judgment.

The rights created by this Paragraph are in addition to, and in no way limit or otherwise affect, the authority of the Cabinet to conduct inspections, to require monitoring and to obtain information from the Defendant as authorized by law.

RECORD RETENTION

45. The Defendant shall retain, in electronic or hard copy format, all data, documents, plans, records and reports that relate to the Defendant's performance under this Consent Judgment which are in the possession, custody, or control of the Defendant or its consultants or contractors. The Defendant shall retain all such materials for five (5) years from the date of origination. Drafts of final documents, plans, records, or reports do not need to be retained. This Paragraph does not limit or affect any duty or obligation of the Defendant to maintain records or information required by any KPDES permit. At the conclusion of this retention period, the Defendant shall notify the Cabinet at least one-hundred and twenty days prior to the destruction of any such materials, and upon request by the Cabinet, the Defendant shall deliver any such materials to the Cabinet.

MISCELLANEOUS PROVISIONS

46. This Consent Judgment is entered in full and final settlement of the civil claims for violations of KRS Chapter 224 and the CWA as alleged in the complaint, but shall not affect rights or obligations not specifically addressed herein as to which the Parties specifically reserve their rights. This Consent Judgment addresses only those alleged violations specifically

described in the complaint in this action. The Cabinet has relied upon the factual representations of the Defendant. Nothing contained herein shall be construed to waive or to limit any remedy or cause of action by the Cabinet based on statutes or regulations under its jurisdiction and the Defendant reserves its defenses thereto. The Cabinet expressly reserves its right at any time to issue administrative orders and to take any other action it deems necessary, including the right to order all necessary remedial measures, assess penalties for violations, or recover all response costs incurred, and the Defendant reserves its defenses thereto.

47. This Consent Judgment shall not prevent the Cabinet from issuing, reissuing, renewing, modifying, revoking, suspending, denying, terminating, or reopening any permit to the Defendant. The Defendant reserves its defenses thereto, except that the Defendant shall not use this Consent Judgment as a defense.

48. Defendant waives its right to any hearing on the matters specifically alleged. However, failure by the Defendant to comply strictly with any or all of the terms of this Consent Judgment shall be grounds for the Cabinet to seek enforcement of this Consent Judgment in this Court and to pursue any other appropriate administrative or judicial action under KRS Chapter 224, and the regulations promulgated pursuant thereto.

49. Except as set forth herein, this Consent Judgment may not be materially amended or modified except by Court order or written agreement of the Parties entered by the Court. Any material modification of this Consent Judgment shall be effective upon entry by the Court. Non-material modifications of the obligations of the Parties which do not significantly alter the terms of this Consent Judgment may be made in writing by the Parties. If the Defendant is involuntarily divested of its existing authority or ability to comply with this Consent Judgment

due to a final court order or an act of the Kentucky General Assembly, the Defendant may seek to amend this Consent Judgment consistent with this Paragraph.

50. The Cabinet does not, by its consent to the entry of this Consent Judgment, warrant or aver in any manner that the Defendant's complete compliance with this Consent Judgment will result in compliance with the provisions of KRS Chapter 224 and the regulations promulgated pursuant thereto. Notwithstanding the Cabinet's review and approval of any plans formulated pursuant to this Consent Judgment, the Defendant shall remain solely responsible for compliance with the terms of KRS Chapter 224 and the regulations promulgated pursuant thereto, this Consent Judgment and any permit and compliance schedule requirements.

51. The provisions of this Consent Judgment shall apply to and be binding upon the Defendant. The acts or omissions of the Defendant's officers, directors, agents, and employees shall not excuse the Defendant's performance of any provisions of this Consent Judgment. The Cabinet reserves the right to seek enforcement of this Consent Judgment against the successors and assigns of the Defendant, and the Defendant reserves its defenses thereto. The Defendant shall give notice of this Consent Judgment to any purchaser, lessee or successor in interest prior to the transfer of ownership and/or operation of any part of its now-existing facility occurring prior to termination of this Consent Judgment, shall notify the Cabinet that such notice has been given, and shall follow all statutory and regulatory requirements for a transfer. Whether or not a transfer takes place, Defendant shall remain fully responsible for payment of all civil penalties and response costs and for performance of all remedial measures required by this Consent Judgment.

52. The Cabinet agrees to allow the performance of the required remedial measures and payment of civil penalties by the Defendant to satisfy the Defendant's obligations to the Cabinet generated by the alleged violations identified in the complaint.

53. The Cabinet and Defendant agree that the required remedial measures are facility-specific and designed to comply with the statutes and regulations cited herein. This Consent Judgment applies specifically and exclusively to the unique facility referenced herein and is inapplicable to any other site or facility.

54. Compliance with this Consent Judgment is not conditional on the receipt of any federal, state, or local funds.

TERMINATION

55. This Consent Judgment is subject to termination on the date that the Defendant certifies that it has met all requirements of this Consent Judgment, including, without limitation, (a) completion of any SEPs, (b) payment of all penalties and stipulated penalties due, (c) submission and approval of the NMC Compliance Demonstration, CMOM Programs Self-Assessment, recommended CMOM improvements and schedules, Sewer Overflow Response Protocol (SORP), Sanitary Sewer Overflow Plan (SSOP) if required and Long Term Control Plan (LTCP) if required. The Cabinet's determination that the Consent Judgment should be terminated shall be based on a consideration of whether all of the requirements listed above have occurred.

56. The Defendant may request that the Cabinet make a determination that this Consent Judgment be terminated. Any such request shall be in writing and shall include a certification that the requirements of this Consent Judgment have been met. The Defendant shall serve a copy of any such request on the Cabinet through the Division of Enforcement. If the

Cabinet agrees that the Defendant has met all of the requirements listed above, the Cabinet and the Defendant shall file a joint motion with the Court seeking an order terminating the Consent Judgment. If the Cabinet determines not to seek termination of the Consent Judgment because it determines that all of the requirements listed above were not met, it shall so notify the Defendant in writing. The Cabinet's notice shall summarize the basis for its decision and describe the actions necessary to achieve final compliance. If the Defendant disagrees with any such determination by the Cabinet, it shall invoke the dispute resolution procedures of this Consent Judgment before filing any motion with the Court regarding the disagreement.

ORDER

WHEREAS, the foregoing Consent Judgment is hereby entered as a Judgment of this Court this the _____ day of _____, 200_.

_____
JUDGE, FRANKLIN CIRCUIT COURT

THE UNDERSIGNED Parties enter into this Consent Judgment and submit it to the Court for entry.

FOR THE COMMONWEALTH OF KENTUCKY, ENVIRONMENTAL & PUBLIC PROTECTION CABINET:

_____
Teresa J. Hill, Secretary

_____
Brenda G. Lowe
Sharon R. Vriesenga
Office of Legal Services
Attorneys for Plaintiff

FOR THE CITY OF PIKEVILLE:

_____
Frank Justice
Mayor

_____
Russell H. Davis, Jr.
Attorney for Pikeville

COPIES TO:

Brenda Gail Lowe, Esq.
Sharon R. Vriesenga, Esq.
Office of Legal Services
Fifth Floor, Capital Plaza Tower
Pikeville, Kentucky 40601

Russell H. Davis, Jr.
Baird & Baird PSC
162 2nd Street
Pikeville, Kentucky 41502

APPENDIX B

PUBLIC HEARING

APPENDIX C

WASTELOAD ALLOCATION

STEVEN L. BESHEAR
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LEONARD K. PETERS
SECRETARY

June 3, 2011

Edwin Deyton, P.E.
Vaughn & Melton Consulting Engineers, Incorporated
1909 Ailor Avenue
Knoxville, Tennessee 37921

Re: City of Pikeville Proposed WWTP Expansion
Pikeville Wastewater Treatment Plant
KPDES No.: KY0025291
Pike County, Kentucky

Dear Mr. Deyton:

This is in response to your May 3, 2011 letter, requesting a waste load allocation (WLA) for a proposed expansion of the subject facility from 2.0 MGD to 4.0 MGD. Discharge is to remain at mile point (mp) 111.9 (National Hydrogaphy Dataset (NHD) mp 85.4) of Levisa Fork of the Big Sandy River, segment 01020. The requested WLA information will be utilized in drafting a preliminary design report.

Based on information contained on the 2008 303(d) List of impaired waters, Levisa Fork (NHD mp 65.2 to 99.9) is impaired. The impaired use listed is Primary Contact Recreation (Non-support). The pollutant of concern is Fecal Coliform. Suspected sources of pollution are: On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) and Urban Runoff/Storm Sewers. State and Federal regulations allow new or expanded discharges into impaired streams only if the discharge will improve or at least not contribute to existing impairments. Discharge from an expanded and upgraded wastewater treatment plant (WWTP), in compliance with Kentucky Pollutant Discharge Elimination System (KPDES) permit limitations and requirements, would not be considered a contributor to the existing impairment, and could thus be approved.

Considering the abovementioned information, applicable effluent limitations are provided below.

Design Capacity = 4.0 MGD / Discharge to mp 111.9 (NHD mp 85.4) of Levisa Fork

Parameter	May 1 - October 31	November 1 - April 30
BOD_5	30 mg/l	30 mg/l
Total Suspended Solids	30 mg/l	30 mg/l
Ammonia Nitrogen	20 mg/l	20 mg/l
Dissolved Oxygen	2 mg/l	2 mg/l
Total Phosphorus	Monitor, mg/l	Monitor, mg/l
Total Nitrogen	Monitor, mg/l	Monitor, mg/l
Total Residual Chlorine	0.019 mg/l	0.019 mg/l

Reliability Classification = Grade C

In addition to the above requirements, the monthly average and weekly maximum values of E. coli shall be at or below 130 colonies per 100 milliliters or 240 colonies per 100 milliliters, respectively, the year around. If a form of chlorine is proposed to disinfect the wastewater, then de-chlorination will likely be needed to achieve the chlorine residual. Additional effluent limitations and water quality standards are contained in the Division of Water Regulations.

These preliminary design effluent limitations are valid for one (1) year from the date of this letter, and are subject to change as a result of additional information which may be presented during the public notice phase of the KPDES permitting process. As such, this letter does not convey any authorization or approval to proceed with the construction or operation of the proposed WWTP. Construction and KPDES permit applications must be submitted to request such authorization or approval. Nor does this letter ensure issuance of either permit. During the review processes of these permits the Division of Water will further evaluate the viability of the project.

Should you have any questions regarding this letter, please contact me at (502) 564-8158, extension 4914 or E-mail at Courtney.Seitz@ky.gov.

Sincerely,

Courtney Seitz

Courtney Seitz, WLA Coordinator
Wet Weather Section
Surface Water Permits Branch
Division of Water

CS
c: Anshu Singh, Water Infrastructure Branch
Compliance and Technical Assistance
Branch, Hazard Section
Division of Water Files

APPENDIX D

CONSTRUCTION COST ESTIMATES,
OPERATION & MAINTENANCE COST ESTIMATES AND
CORRESPONDING PROJECT AREA EXHIBITS

APPENDIX D

CONSTRUCTION COST ESTIMATES, OPERATION & MAINTENANCE COST ESTIMATES AND CORRESPONDING PROJECT AREA EXHIBITS

COLLECTOR SEWERS

COLLECTION ALTERNATE 1 – PRESSURE SEWER SYSTEM CONSTRUCTION COST ESTIMATES

COLLECTION ALTERNATE 2 – GRAVITY SEWER SYSTEM CONSTRUCTION COST ESTIMATES

COLLECTION SYSTEM OPERATION AND MAINTENANCE COST ESTIMATES

WASTEWATER TREATMENT SYSTEMS

WWTP CONSTRUCTION COST ESTIMATES

WWTP OPERATION AND MAINTENANCE COST ESTIMATES

TABLE 1-18 SUMMARY

ALTERNATE 1 - PRESSURE SEWER SYSTEM

COST SUMMARY FOR PLANNING AREA

CONTRACT # (AREA #)	TABLE #	LOCATION DESCRIPTION	AMOUNT
1	1	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	$ 905,644.67
2	2	Expand Existing Pikeville WWTP	*SEE PLANT EST.*
3	3	Marion Branch Development - Phase 1	$ 2,743,251.00
4	4	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	$ 1,834,945.00
5	5	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	$ 1,250,091.00
6	6	Marion Branch Development - Phase 2	$ 2,607,822.67
7	7	Broad Bottom	$ 1,754,636.00
8	8	Right Fork of Island Creek / Coon Branch / Kati Street	$ 2,324,968.00
9	9	Deskins and Potter Development Sites / Coal Run Hill	$ 2,544,152.00
10	10	Marion Branch Development - Phase 3	$ 2,273,450.33
11	11	Left Fork of Island Creek / Road Fork	$ 2,193,900.00
12	12	Boldman Bottom	$ 1,005,117.67
13	13	Ratliff Creek	$ 2,746,032.00
14	14	Stonecoal Road	$ 2,636,697.00
15	15	Miscellaneous Sewer System Upgrades	$ 2,564,185.00
16	16	Hurricane Creek - Phase I - Lower	$ 3,417,437.00
17	17	Hurricane Creek - Phase 2 - Upper	$ 2,327,800.00
~~18~~	~~18~~	~~This Space has been Left Blank Intentionally~~	
SUBTOTAL CONSTRUCTION COST			**$ 35,130,129.33**
CONTINGENCY @ 15%			**$ 5,269,519.40**
NON CONSTRUCTION COSTS: RIGHT OF WAY, LEGAL SERVICES, BOND COUNCIL, ENGINEERING, DESIGN, ADMIN, INSPECTION @ 35%			**$ 12,295,545.27**
ESTIMATED PROJECT COST			**$ 52,695,194.00**

Notes:

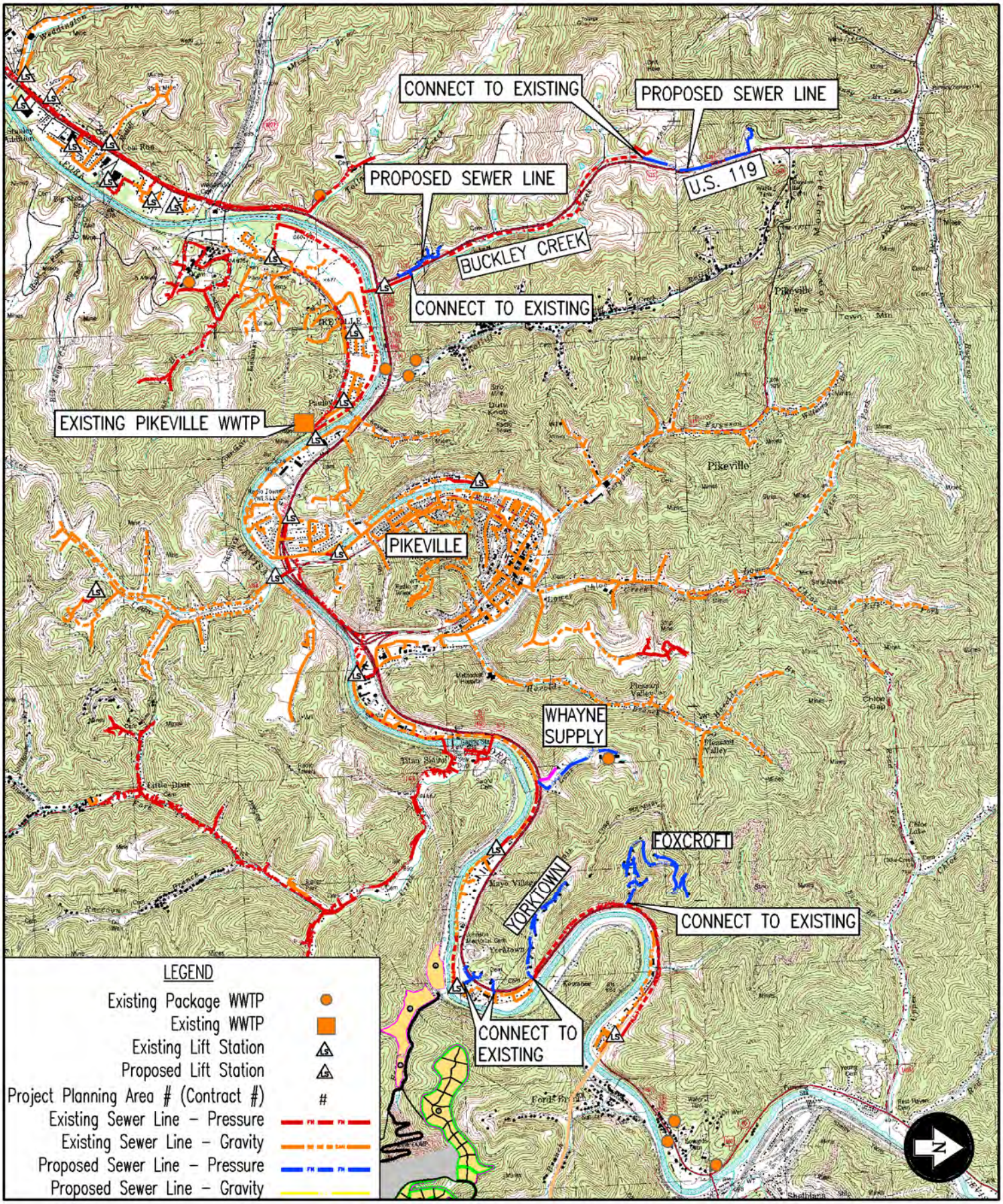
1. See Tables 1-18 for detailed opinions of probable construction cost for the above areas.

TABLE 1
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Foxcroft/Yorktown/Buckley's Creek / Whayne Supply

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 26,378.00
	Landscape Allowance	Mile	$ 1,000.00	6	$ 6,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	6	$ 12,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	500	$ 20,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	800	$ 40,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	3	$ 7,500.00
	Manhole	EA	$ 3,500.00	5	$ 18,666.67
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	6	$ 18,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	9,000	$ 117,000.00
	2" SDR11 HDPE	LF	$ 15.00	12,950	$ 194,250.00
	3" SDR11 HDPE	LF	$ 16.00	3,850	$ 61,600.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	370	$ 55,500.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 20,000.00	1	$ 20,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	33	$ 173,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	3	$ 37,500.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	2	$ 5,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 905,644.67**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Foxcroft/Yorktown/Buckley's Creek/Whayne Supply

DATE:	6/19/12
SCALE:	1" = 4000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

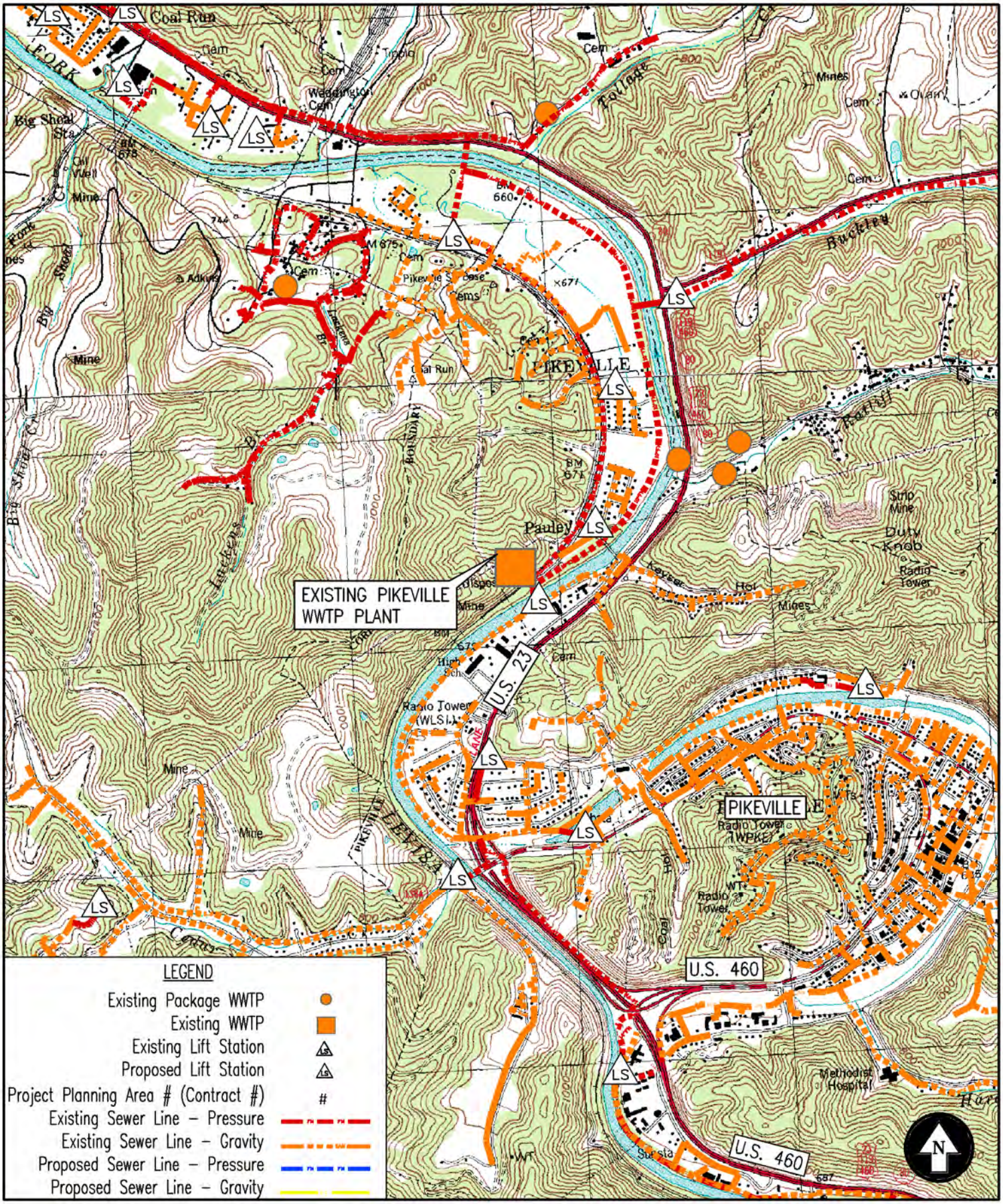
SHEET: Area 1
OF:

TABLE 2
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Expand Existing Pikeville WWTP

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ -
	Landscape Allowance	Mile	$ 1,000.00	0	$ -
	Seeding and Cleanup	Mile	$ 2,000.00	0	$ -
	Removal of Existing Septic Tank	EA	$ 1,500.00	0	$ -
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	0	$ -
	1.25" SDR11 HDPE	LF	$ 13.00	0	$ -
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ -		$ -
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 7,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 11,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	0	$ -
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ -**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Expand Existing Pikeville Waste Water Treatment Plant

DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

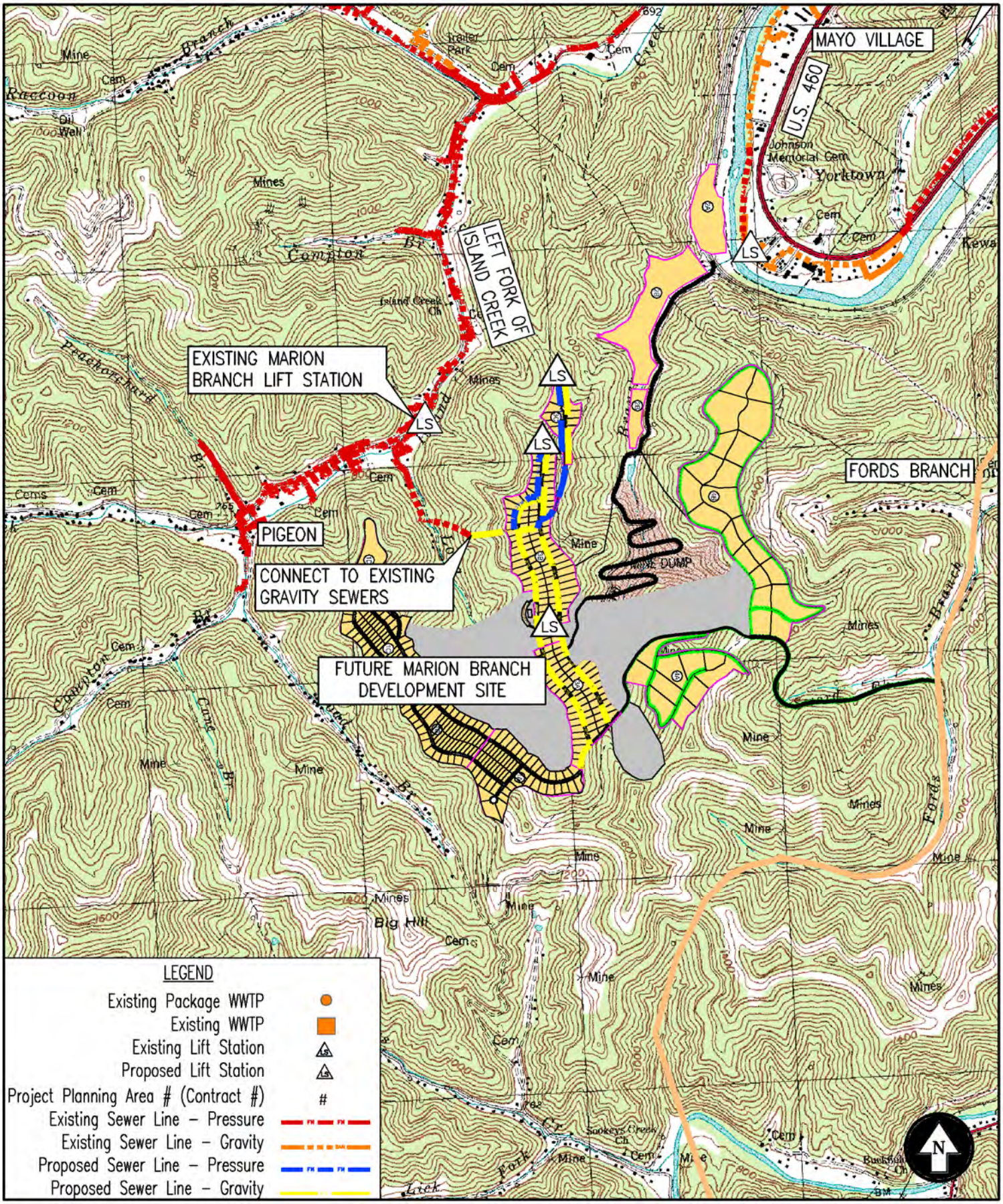
SHEET:
Area 2
OF:

TABLE 3
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Marion Branch Development - Phase 1

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 79,901.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	10,400	$ 416,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	11,500	$ 575,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	260	$ 650,000.00
	Manhole	EA	$ 3,500.00	58	$ 201,250.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	10,200	$ 132,600.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00	4,250	$ 68,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	200	$ 30,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	50	$ 262,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	1	$ 12,500.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	3	$ 7,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,743,251.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.



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CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Marion Branch Development Phase 1

DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

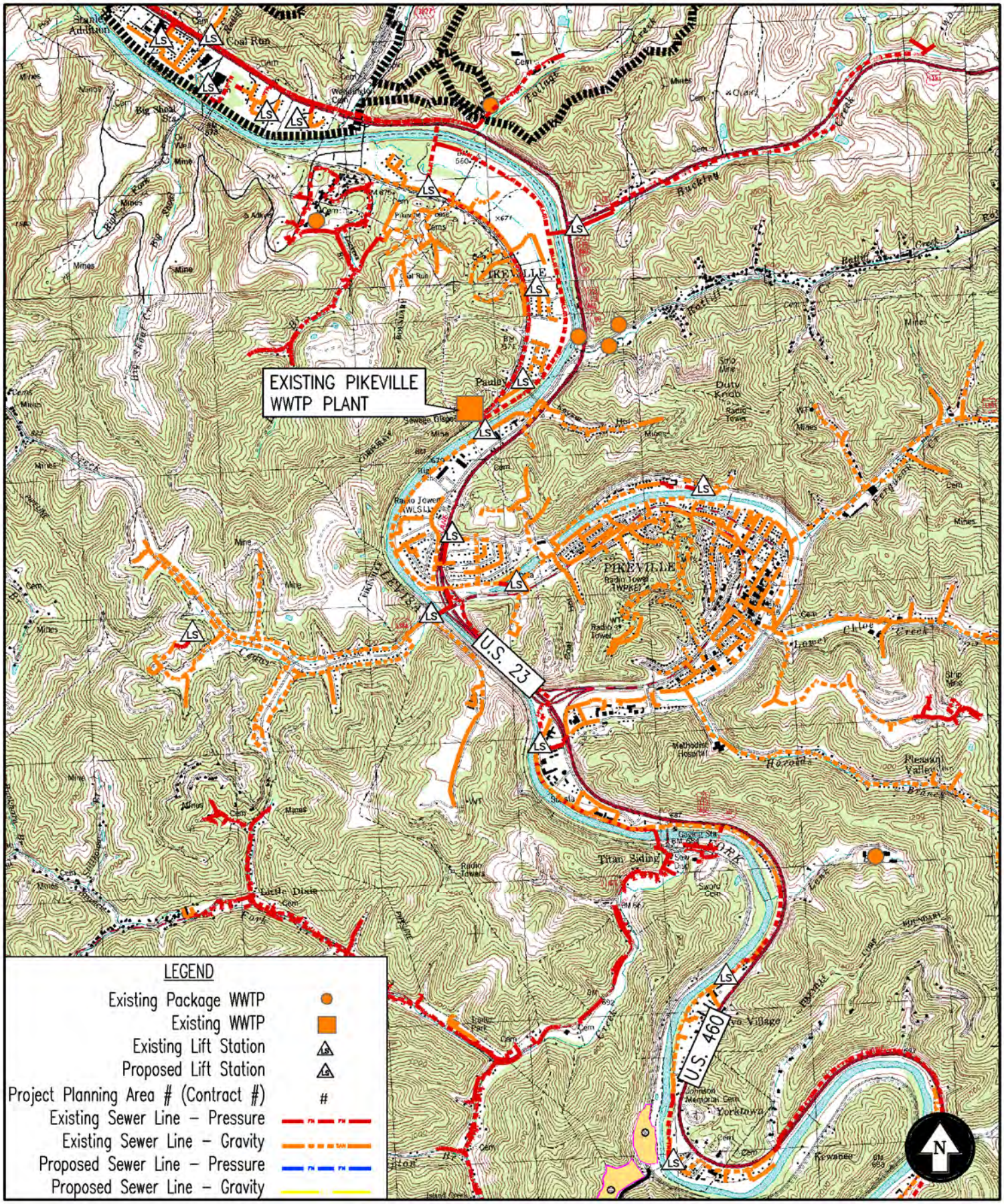
SHEET:
Area 3
OF:

TABLE 4
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 53,445.00
	Landscape Allowance	Mile	$ 1,000.00	1	$ 1,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	1	$ 2,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	0	$ -
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	1	$ 3,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	0	$ -
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00	1,000	$ 18,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00	500	$ 12,500.00
	10" SDR11 HDPE	LF	$ 38.00	500	$ 19,000.00
	16" SDR11 HDPE	LF	$ 48.00	750	$ 36,000.00
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00	300	$ 120,000.00
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00	200	$ 80,000.00
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 15,000.00	1	$ 15,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	50	$ 125,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00	1	$ 175,000.00
	600 gpm Submersible Pump Station	EA	$ 200,000.00	1	$ 200,000.00
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00	1	$ 500,000.00
	Pump Station Backup Power	EA	$ 50,000.00	2	$ 100,000.00
	ADD for Odor Control	EA	$ 35,000.00	6	$ 210,000.00
	ESTIMATED CONSTRUCTION COST				**$ 1,834,945.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Miscellaneous Lift Station Upgrades (Huffman, Walters Etc)

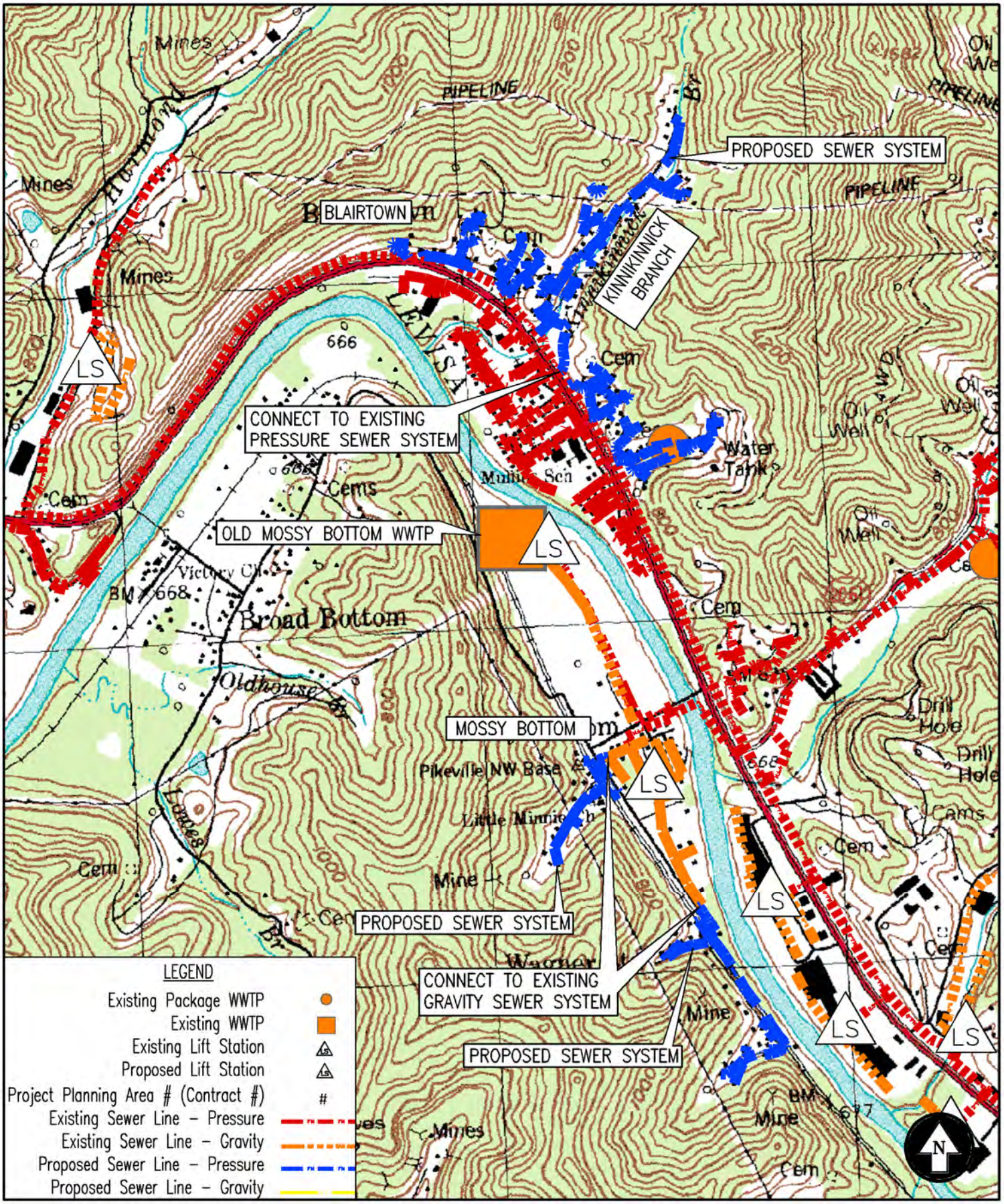
DATE:	6/19/12
SCALE:	1" = 3000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 4
OF:	

TABLE 5
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Wagner Station / Kinnikinnick / Blairtown / Mullins Hill

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 36,411.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	4	$ 6,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	4	$ 12,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	21,800	$ 283,400.00
	2" SDR11 HDPE	LF	$ 15.00	7,610	$ 114,150.00
	3" SDR11 HDPE	LF	$ 16.00	7,430	$ 118,880.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	340	$ 51,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 15,000.00	1	$ 15,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	109	$ 572,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	8	$ 20,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 1,250,091.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Wagner Station / Kinnikinnick / Blairtown / Mullins Hill

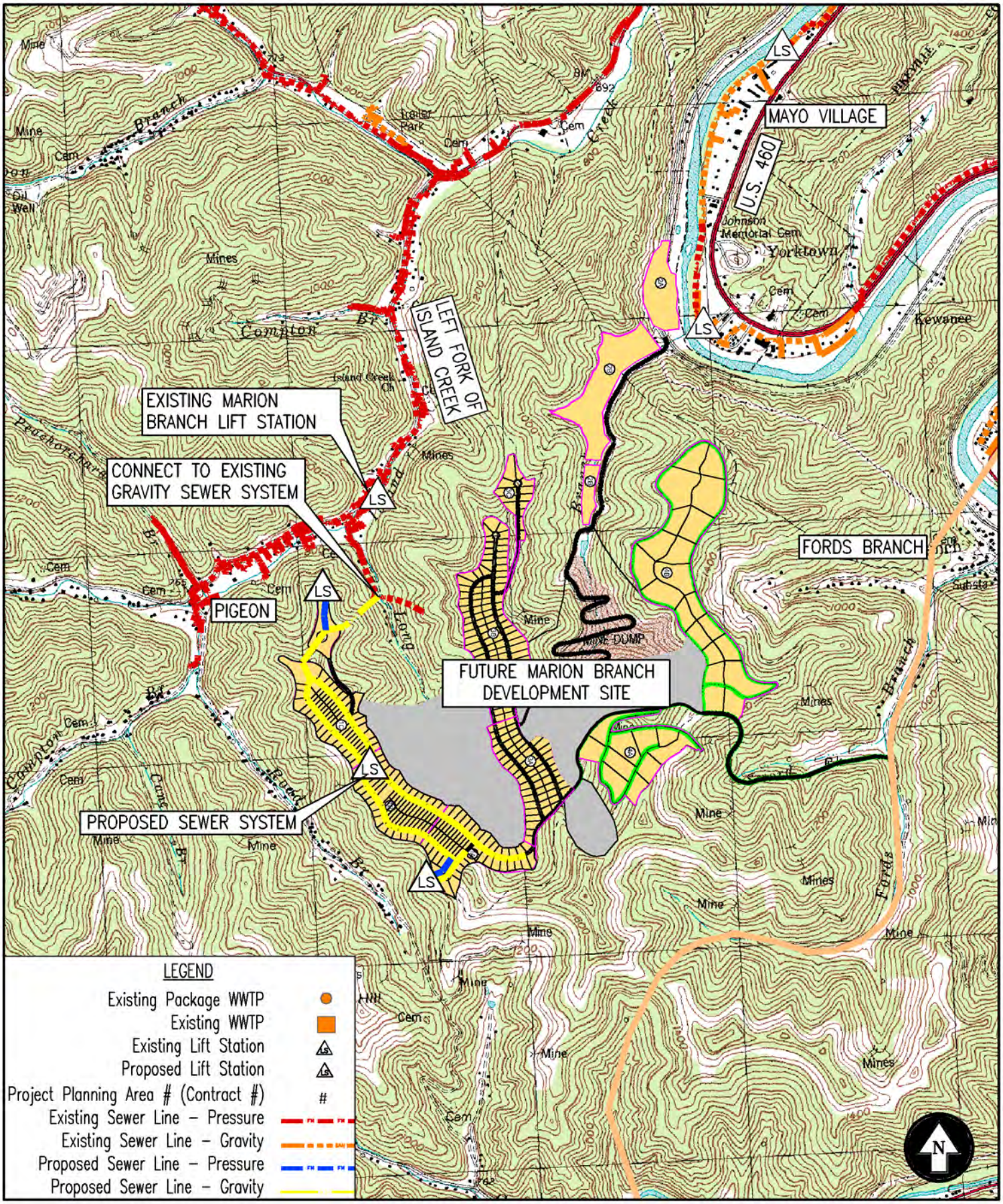
DATE:	6/19/12
SCALE:	1" = 1200'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 5
OF:	

TABLE 6
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Marion Branch Development - Phase 2

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 75,956.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	8,800	$ 352,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	12,500	$ 625,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	220	$ 550,000.00
	Manhole	EA	$ 3,500.00	83	$ 291,666.67
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	10,400	$ 135,200.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00	1,250	$ 20,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	200	$ 30,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	50	$ 262,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	2	$ 25,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	3	$ 7,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,607,822.67**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Marion Branch Development – Phase 2

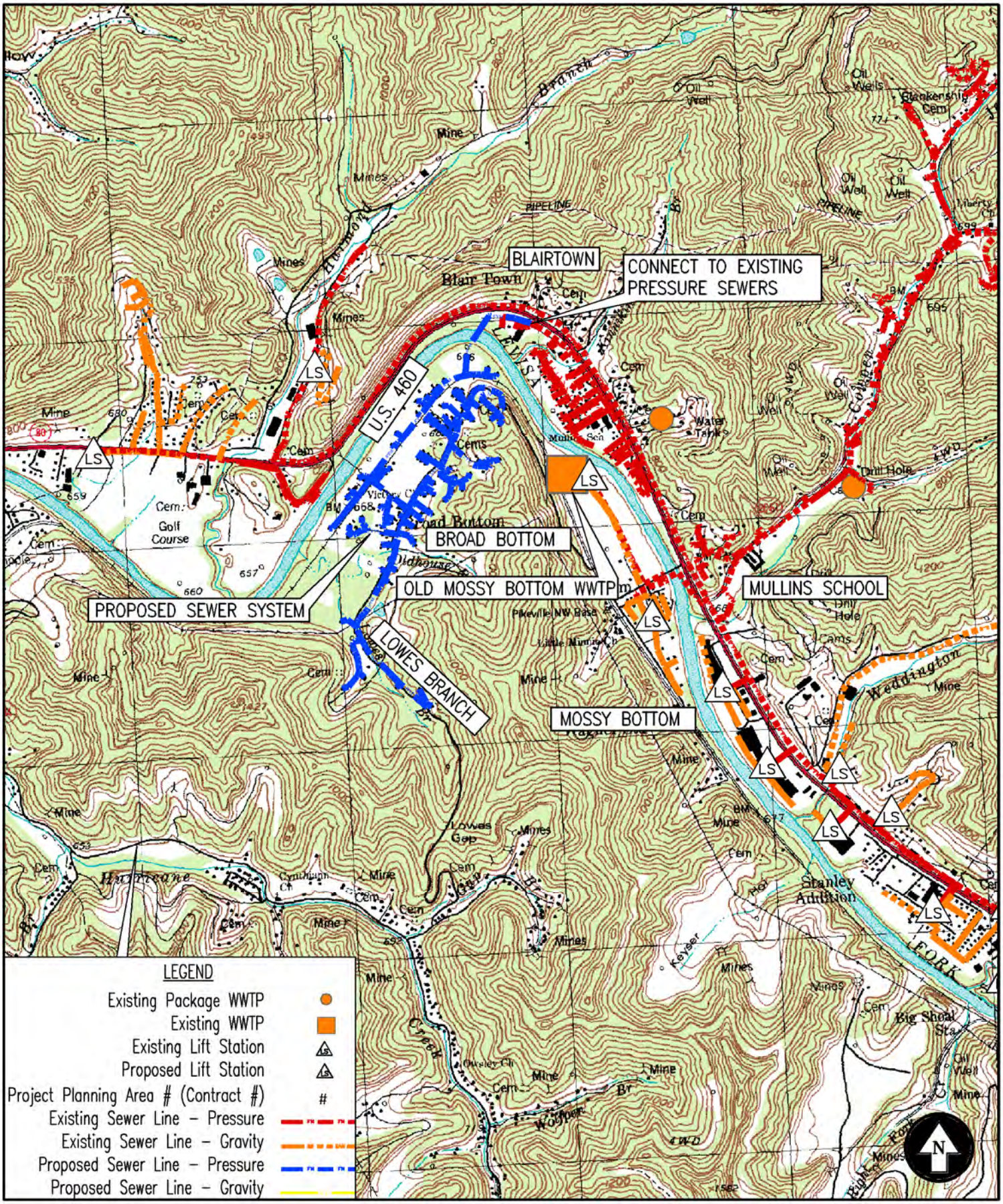
DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 6
OF:	

TABLE 7
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Broad Bottom

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 51,106.00
	Landscape Allowance	Mile	$ 1,000.00	9	$ 9,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	9	$ 18,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	4	$ 6,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	9	$ 27,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	24,000	$ 312,000.00
	2" SDR11 HDPE	LF	$ 15.00	13,100	$ 196,500.00
	3" SDR11 HDPE	LF	$ 16.00	6,150	$ 98,400.00
	4" SDR11 HDPE	LF	$ 18.00	3,285	$ 59,130.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00	300	$ 52,500.00
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	160	$ 24,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	240	$ 36,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 10,000.00	1	$ 10,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	120	$ 630,000.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	6	$ 15,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00	1	$ 125,000.00
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 1,754,636.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Broad Bottom

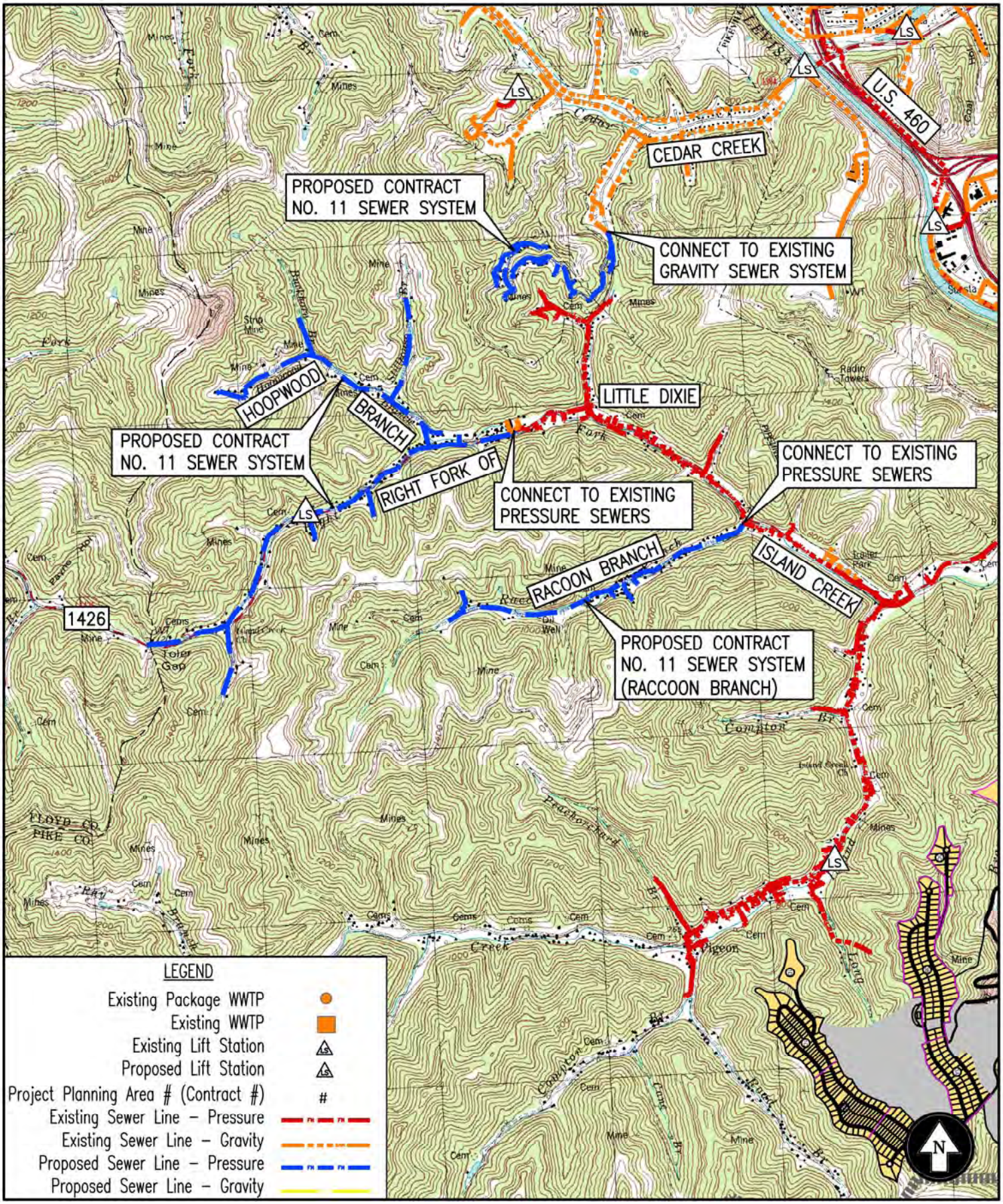
DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 7
OF:	

TABLE 8
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Right Fork of Island Creek / Coon Branch / Kati Street

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 67,718.00
	Landscape Allowance	Mile	$ 1,000.00	14	$ 14,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	14	$ 28,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	6	$ 9,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	14	$ 42,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	37,600	$ 488,800.00
	2" SDR11 HDPE	LF	$ 15.00	17,000	$ 255,000.00
	3" SDR11 HDPE	LF	$ 16.00	15,500	$ 248,000.00
	4" SDR11 HDPE	LF	$ 18.00	1,775	$ 31,950.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	300	$ 45,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	40	$ 6,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 2,500.00	1	$ 2,500.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	188	$ 987,000.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	10	$ 25,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 2,324,968.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.
LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Right Fork of Island Creek / Coon Branch / Kati Street

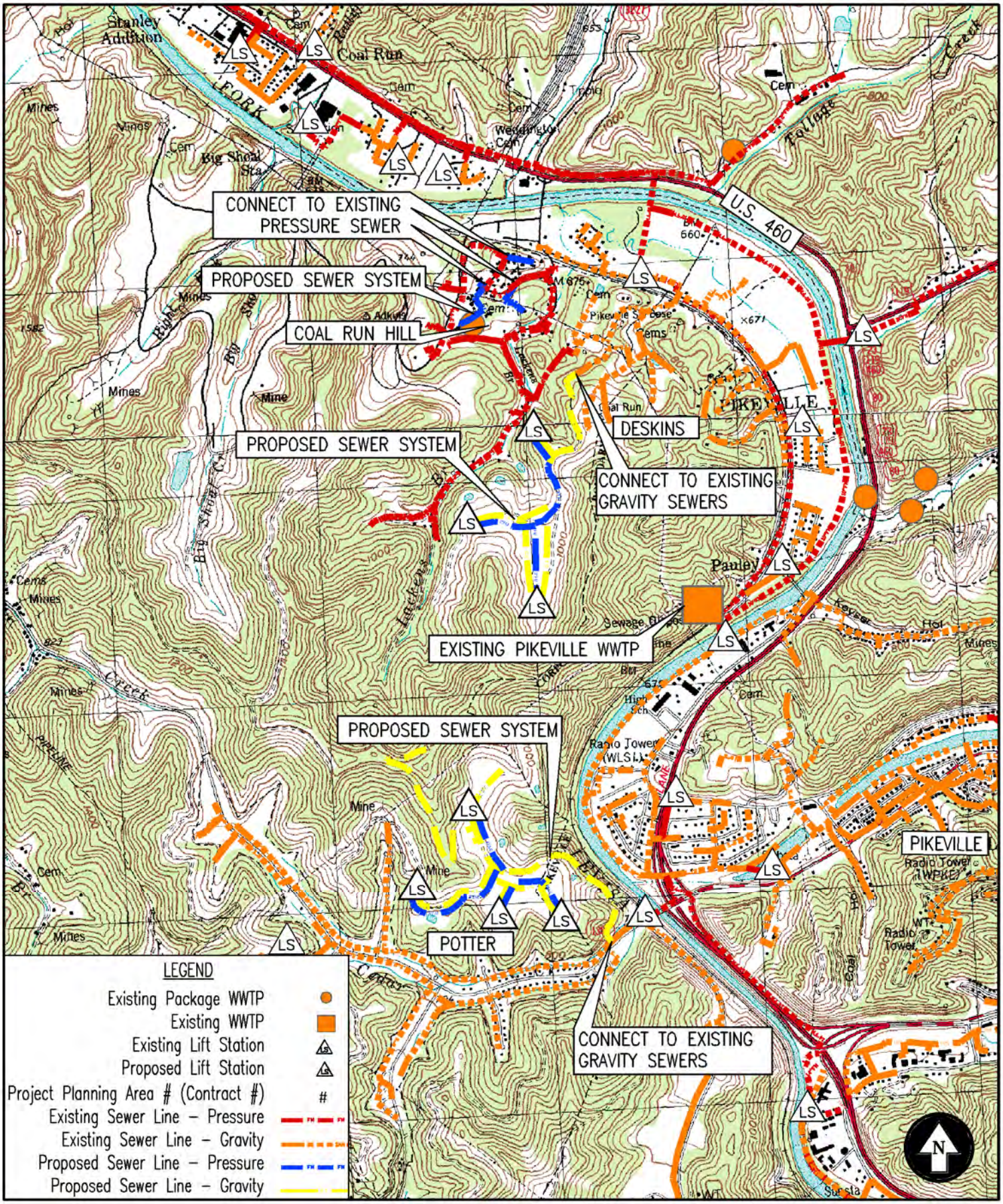
DATE:	5/15/12
SCALE:	1" = 2500'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 8
OF:	

TABLE 9
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Deskins and Potter Development Sites / Coal Run Hill

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 74,102.00
	Landscape Allowance	Mile	$ 1,000.00	9	$ 9,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	9	$ 18,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	2,400	$ 96,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	18,750	$ 937,500.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	60	$ 150,000.00
	Manhole	EA	$ 3,500.00	125	$ 437,500.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	5	$ 15,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	12,600	$ 163,800.00
	2" SDR11 HDPE	LF	$ 15.00	3,250	$ 48,750.00
	3" SDR11 HDPE	LF	$ 16.00	7,500	$ 120,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	56	$ 294,000.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	4	$ 50,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	3	$ 75,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 2,544,152.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.
LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Deskins and Potter Development Sites / Coal Run Hill

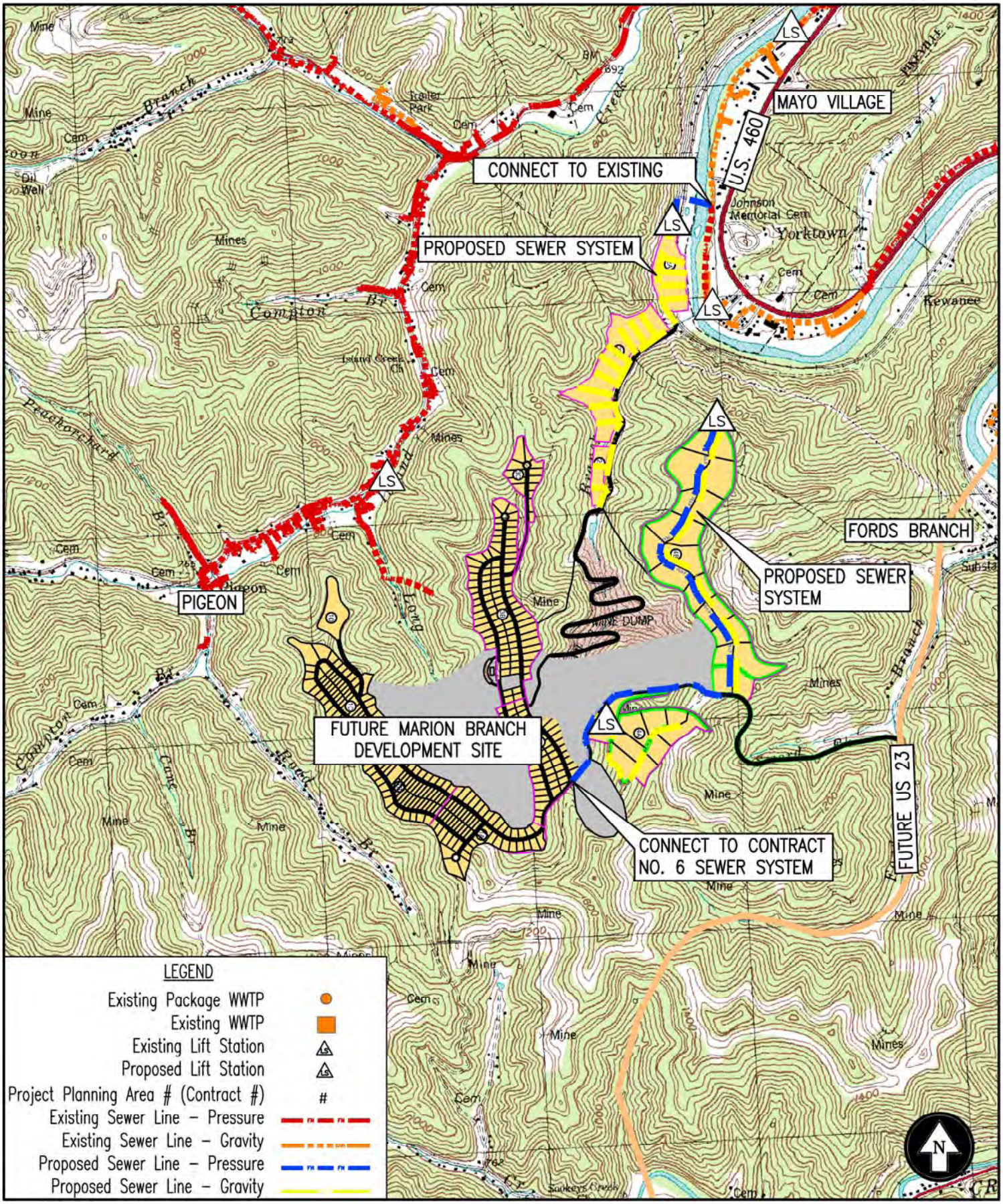
DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 9
OF:	

TABLE 10
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Marion Branch Development - Phase 3

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 66,217.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	2,720	$ 108,800.00
	8" diameter SDR 35 PVC	LF	$ 50.00	19,000	$ 950,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	68	$ 170,000.00
	Manhole	EA	$ 3,500.00	127	$ 443,333.33
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	2,200	$ 28,600.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00	10,000	$ 180,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	10	$ 52,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	1	$ 25,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	1	$ 2,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,273,450.33**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Marion Branch Development Phase 3

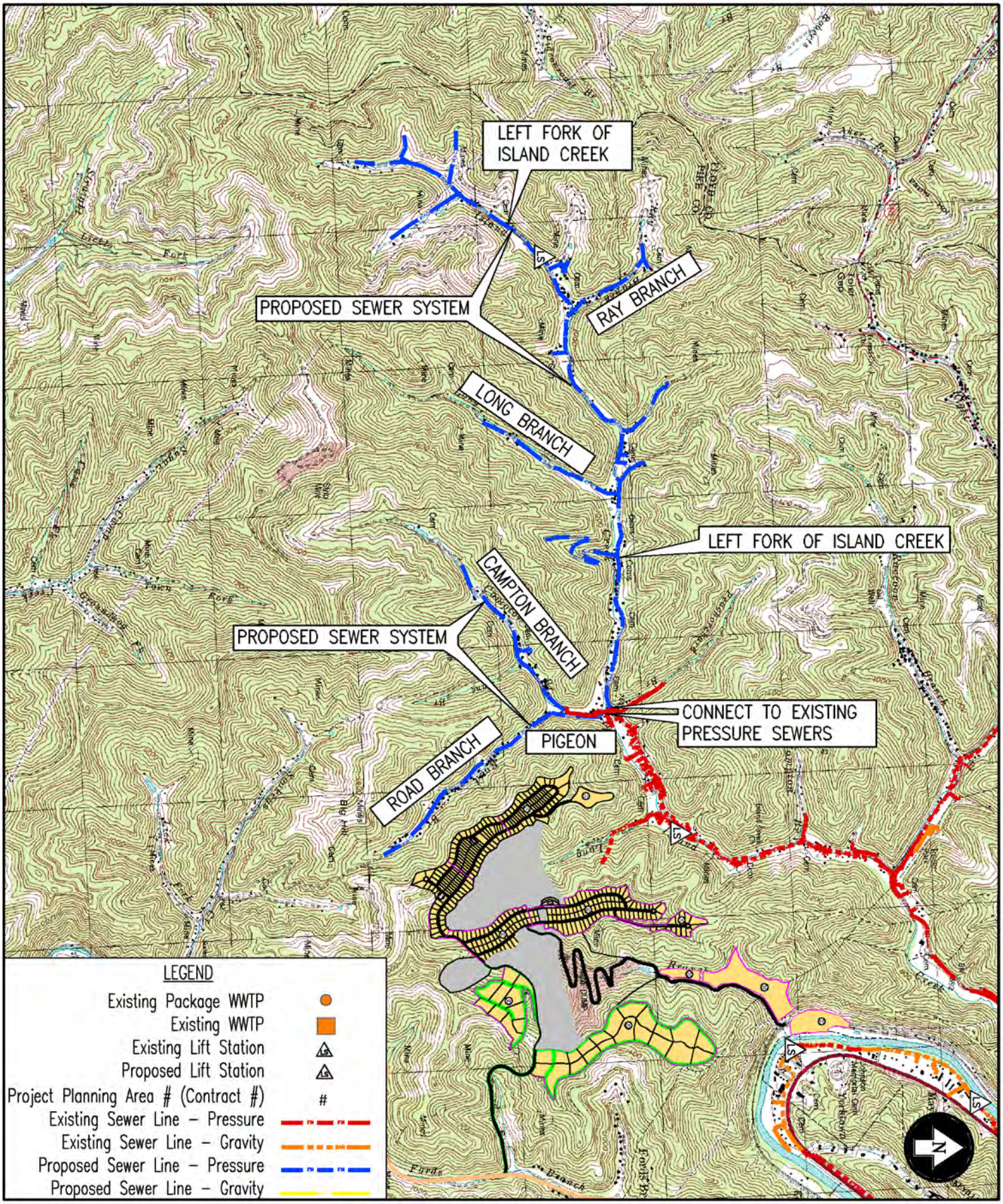
DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 10
OF:	

TABLE 11
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Left Fork of Island Creek / Road Fork

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 63,900.00
	Landscape Allowance	Mile	$ 1,000.00	15	$ 15,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	15	$ 30,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	5	$ 7,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	15	$ 45,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	30,200	$ 392,600.00
	2" SDR11 HDPE	LF	$ 15.00	21,500	$ 322,500.00
	3" SDR11 HDPE	LF	$ 16.00	21,500	$ 344,000.00
	4" SDR11 HDPE	LF	$ 18.00	3,800	$ 68,400.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	300	$ 45,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	150	$ 787,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	1	$ 12,500.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	8	$ 20,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 2,193,900.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.
LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Left Fork of Island Creek / Road Fork

DATE:	6/19/12
SCALE:	1" = 3000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

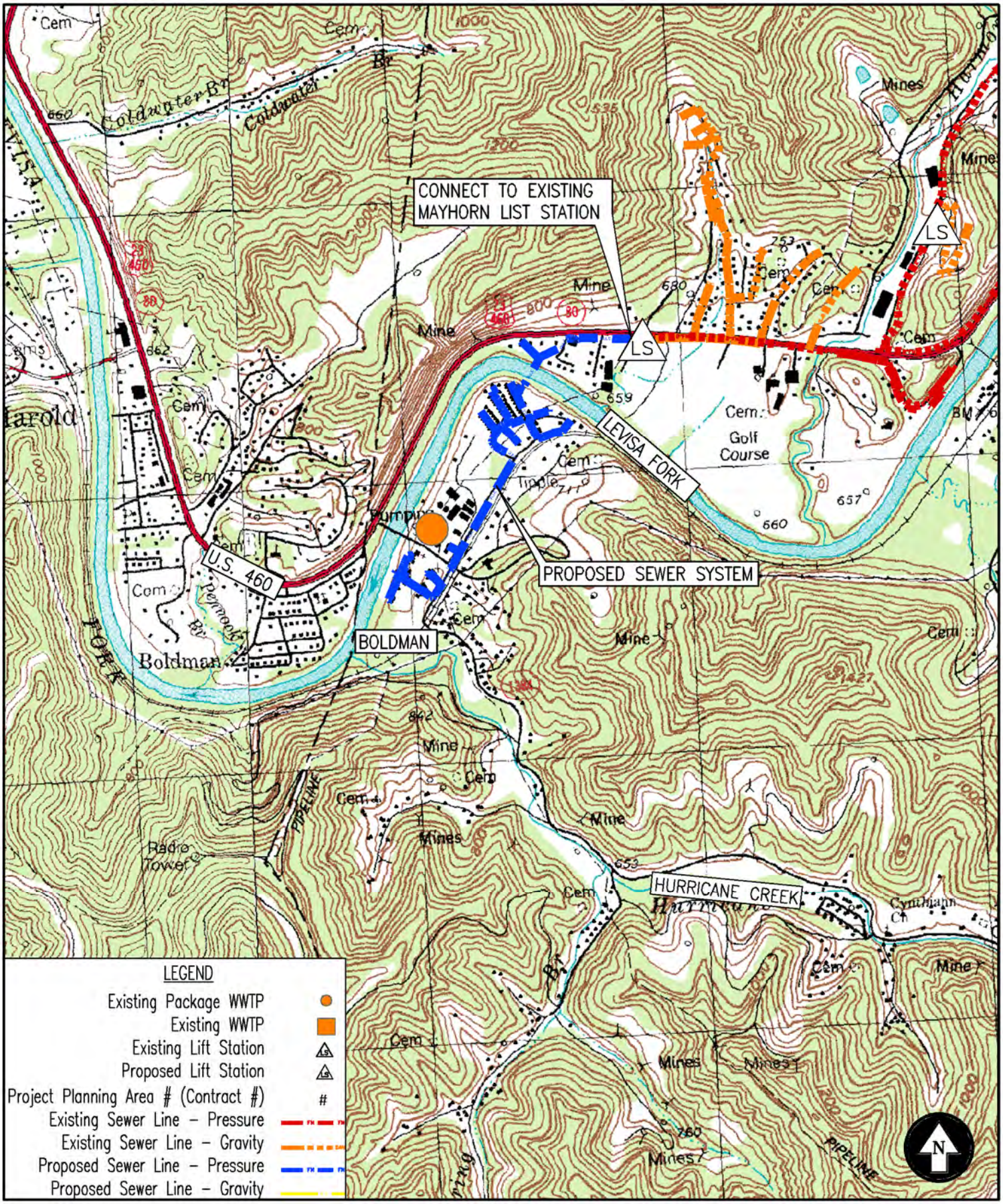
SHEET:
Area 11
OF:

TABLE 12
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Boldman Bottom

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 29,276.00
	Landscape Allowance	Mile	$ 1,000.00	4	$ 4,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	4	$ 8,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	3,825	$ 153,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	2,000	$ 100,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	51	$ 127,500.00
	Manhole	EA	$ 3,500.00	13	$ 46,666.67
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	5,200	$ 67,600.00
	2" SDR11 HDPE	LF	$ 15.00	2,075	$ 31,125.00
	3" SDR11 HDPE	LF	$ 16.00	5,200	$ 83,200.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00	300	$ 45,000.00
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	120	$ 18,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 10,000.00	1	$ 10,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	25	$ 131,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	1	$ 25,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	2	$ 5,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 1,005,117.67**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Boldman Bottom

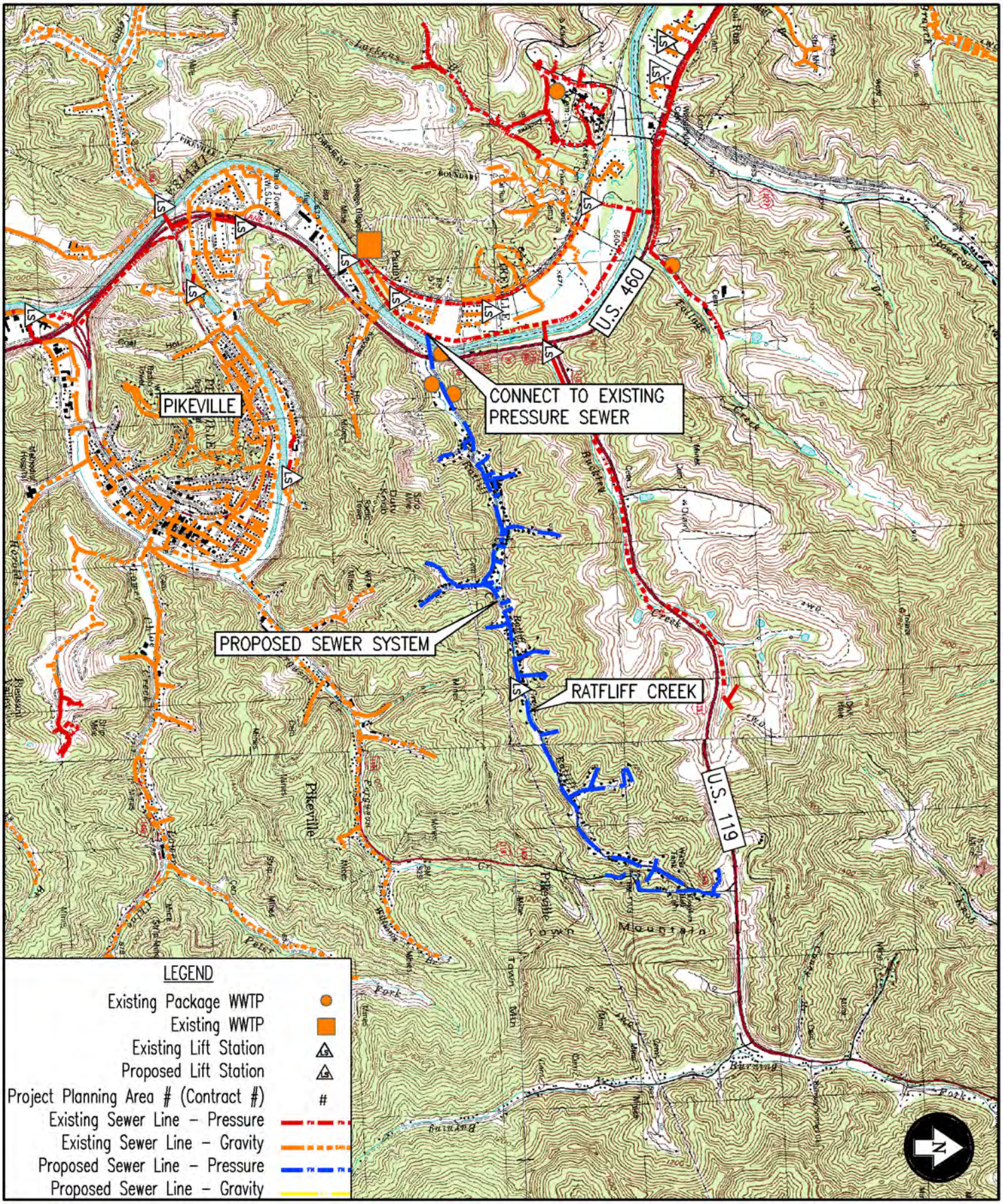
DATE:	6/19/12
SCALE:	1" = 1500'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 12
OF:	

TABLE 13
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Ratliff Creek

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 79,982.00
	Landscape Allowance	Mile	$ 1,000.00	16	$ 16,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	16	$ 32,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	7	$ 10,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	16	$ 48,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	45,200	$ 587,600.00
	2" SDR11 HDPE	LF	$ 15.00	14,750	$ 221,250.00
	3" SDR11 HDPE	LF	$ 16.00	14,000	$ 224,000.00
	4" SDR11 HDPE	LF	$ 18.00	6,400	$ 115,200.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	250	$ 37,500.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	226	$ 1,186,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	15	$ 37,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,746,032.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

6/19/12
Pike County, Kentucky

Pikeville 201 Facilities Plan
Ratliff Creek

DATE:	6/19/12
SCALE:	1" = 3000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

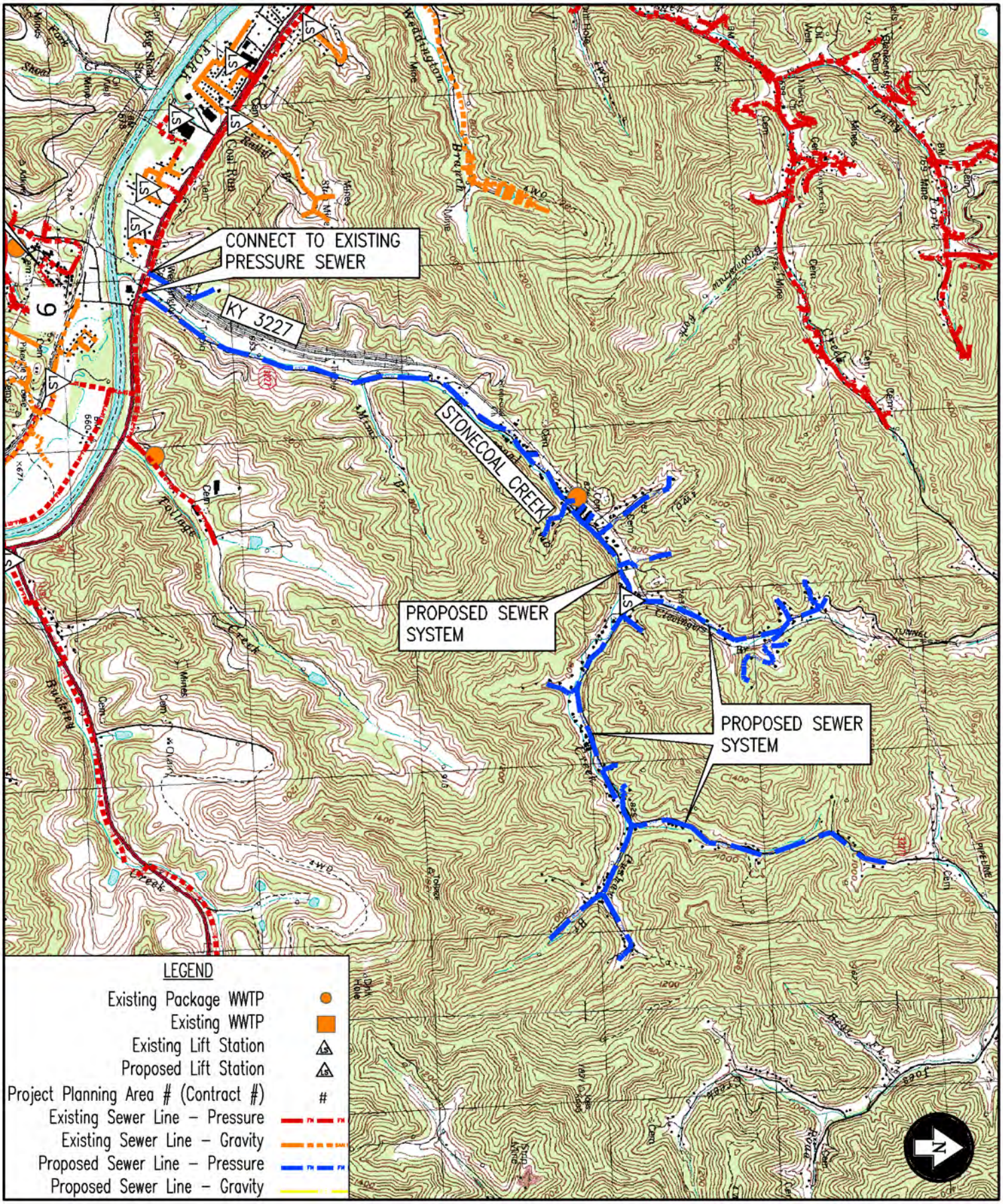
SHEET: Area 13
OF:

TABLE 14
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Stonecoal Road

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 76,797.00
	Landscape Allowance	Mile	$ 1,000.00	16	$ 16,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	16	$ 32,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	6	$ 9,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	16	$ 48,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	38,000	$ 494,000.00
	2" SDR11 HDPE	LF	$ 15.00	19,500	$ 292,500.00
	3" SDR11 HDPE	LF	$ 16.00	13,500	$ 216,000.00
	4" SDR11 HDPE	LF	$ 18.00	10,550	$ 189,900.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	500	$ 75,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	190	$ 997,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	10	$ 25,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,636,697.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Stonecoal Road

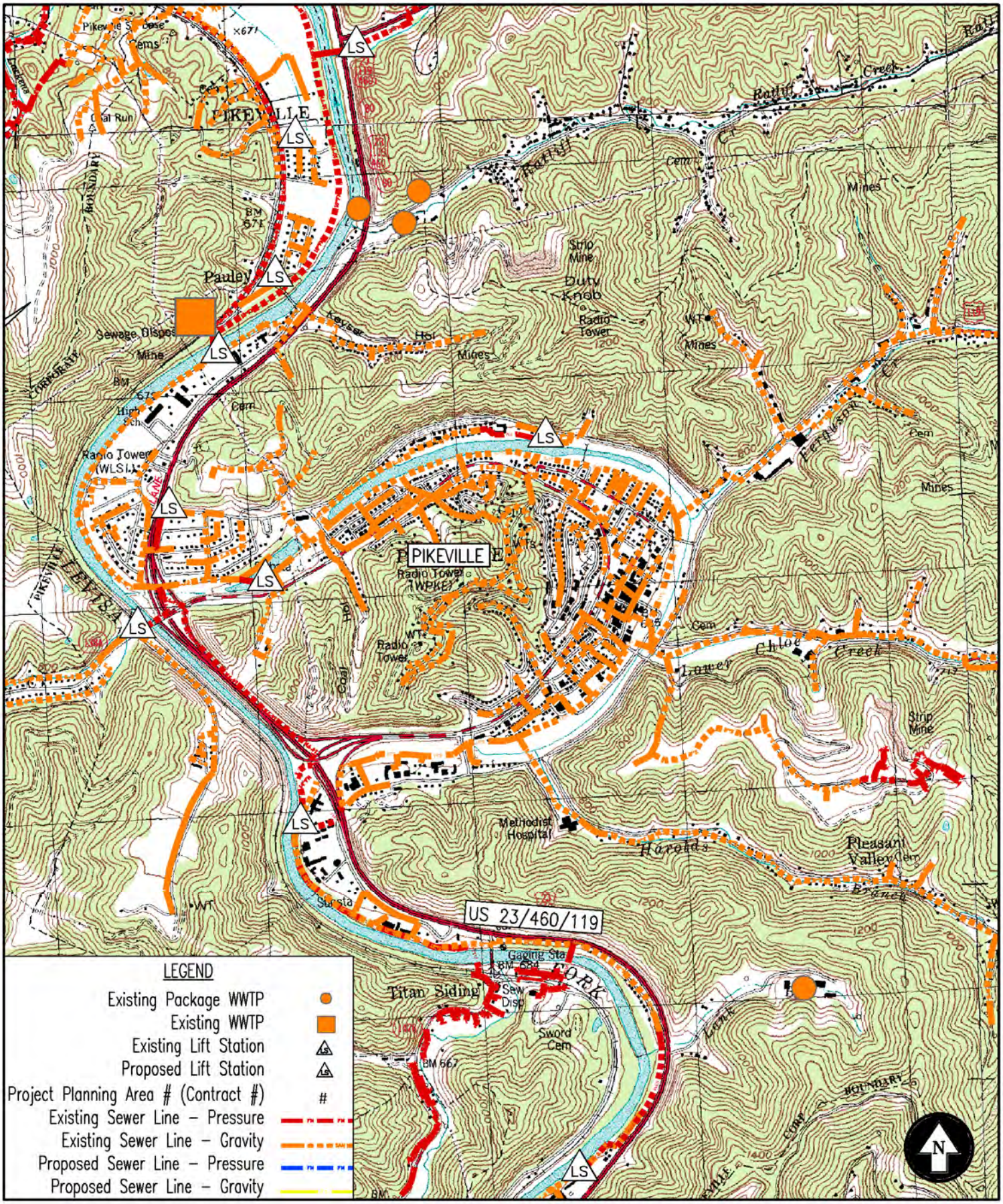
DATE:	6/19/12
SCALE:	1" = 2500'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410
SHEET:	Area 14
OF:	

TABLE 15
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Miscellaneous Sewer System Upgrades

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 74,685.00
	Landscape Allowance	Mile	$ 1,000.00	2	$ 2,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	2	$ 4,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	0	$ -
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	2	$ 6,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	0	$ -
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00	2,500	$ 55,000.00
	8" SDR11 HDPE	LF	$ 25.00	2,500	$ 62,500.00
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00	2,500	$ 120,000.00
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	200	$ 500,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	2	$ 150,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	2	$ 180,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00	1	$ 175,000.00
	600 gpm Submersible Pump Station	EA	$ 200,000.00	1	$ 200,000.00
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00	1	$ 500,000.00
	Pump Station Backup Power	EA	$ 50,000.00	5	$ 250,000.00
	ADD for Odor Control	EA	$ 35,000.00	5	$ 175,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,564,185.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.



LEGEND

- Existing Package WWTP
- Existing WWTP
- Existing Lift Station (LS)
- Proposed Lift Station (LS)
- Project Planning Area # (Contract #) (#)
- Existing Sewer Line – Pressure
- Existing Sewer Line – Gravity
- Proposed Sewer Line – Pressure
- Proposed Sewer Line – Gravity

SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Miscellaneous Sewer Upgrades

DATE:	6/19/12
SCALE:	1" = 2000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

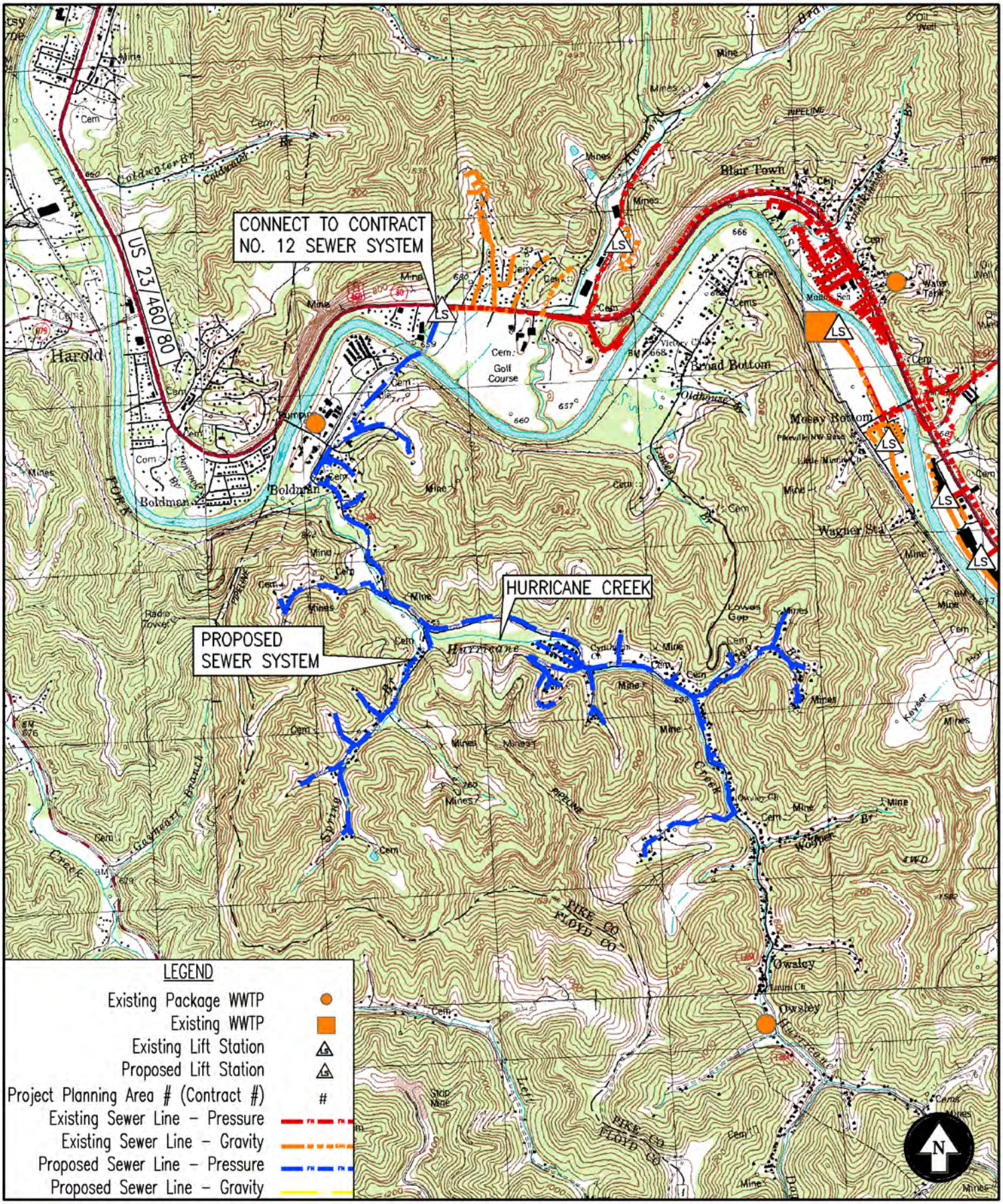
SHEET:
Area 15
OF:

TABLE 16
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Hurricane Creek - Phase I - Lower

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 99,537.00
	Landscape Allowance	Mile	$ 1,000.00	18	$ 18,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	18	$ 36,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	8	$ 12,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	18	$ 54,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	48,200	$ 626,600.00
	2" SDR11 HDPE	LF	$ 15.00	12,850	$ 192,750.00
	3" SDR11 HDPE	LF	$ 16.00	16,000	$ 256,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,600	$ 46,800.00
	6" SDR11 HDPE	LF	$ 22.00	15,000	$ 330,000.00
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00	300	$ 60,000.00
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	60	$ 9,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	60	$ 9,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00	400	$ 70,000.00
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 35,000.00	1	$ 35,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	241	$ 1,265,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	15	$ 37,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00	1	$ 175,000.00
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 3,417,437.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Hurricane Creek – Phase I – Lower

DATE:	6/19/12
SCALE:	1" = 2500'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

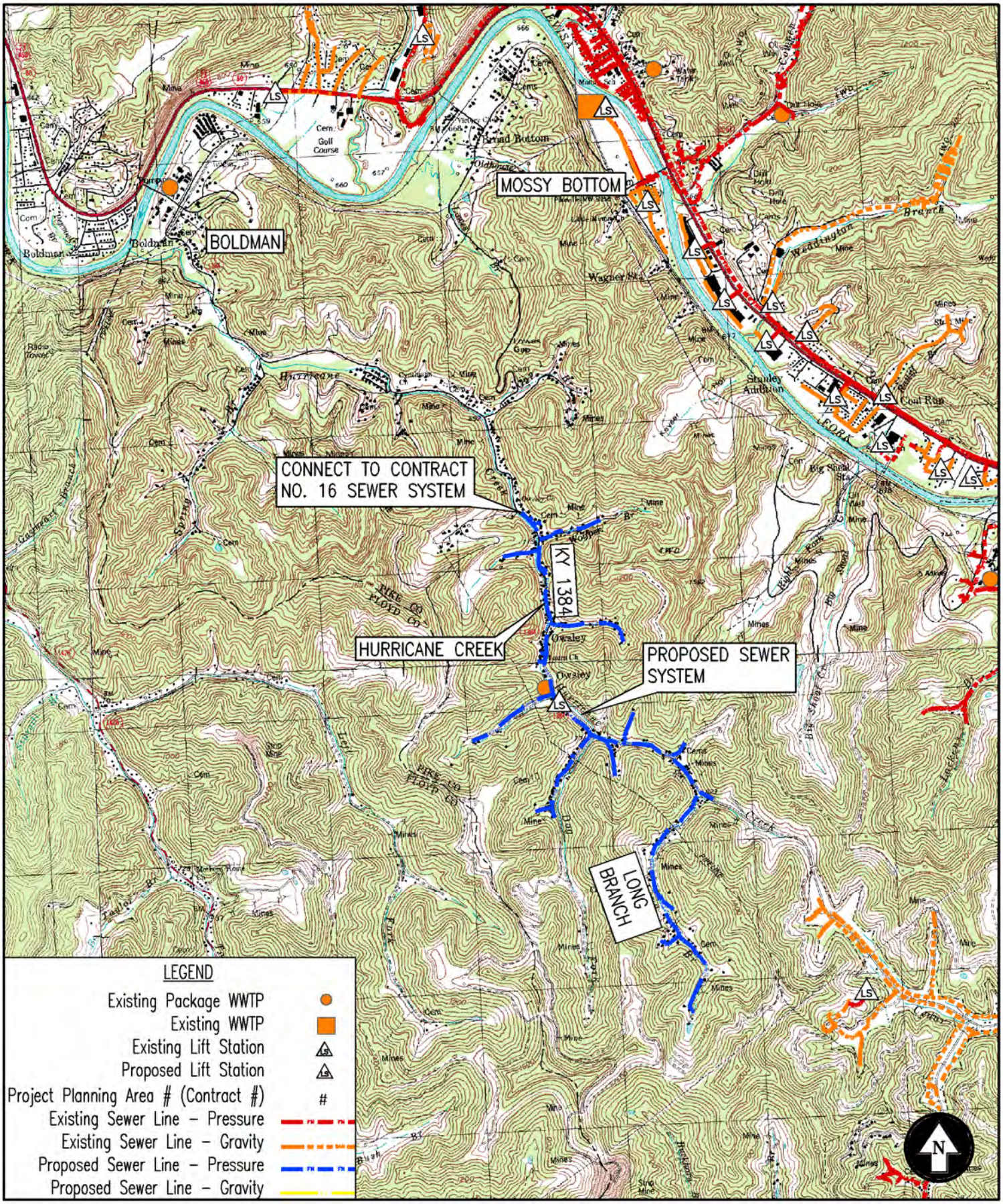
SHEET:
Area 16
OF:

TABLE 17
OPINION OF PROBABLE CONSTRUCTION COST FOR
PRESSURE SEWER COLLECTION AND CONVEYANCE SYSTEM
Hurricane Creek - Phase 2 - Upper

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 67,800.00
	Landscape Allowance	Mile	$ 1,000.00	13	$ 13,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	13	$ 26,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	6	$ 9,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	13	$ 39,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	37,200	$ 483,600.00
	2" SDR11 HDPE	LF	$ 15.00	13,000	$ 195,000.00
	3" SDR11 HDPE	LF	$ 16.00	9,400	$ 150,400.00
	4" SDR11 HDPE	LF	$ 18.00	6,250	$ 112,500.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00	200	$ 30,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	186	$ 976,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	10	$ 25,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,327,800.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.



SUMMIT ENGINEERING, INC.

LEXINGTON, KY
PIKEVILLE, KY
HAZARD, KY
CHARLESTON, WV
LOGAN, WV
GRUNDY, VA

Pikeville Sewer Entity
Pike County, Kentucky

Pikeville 201 Facilities Plan
Hurricane Creek – Phase 2 – Upper

DATE:	6/19/12
SCALE:	1" = 3000'
DRAWN BY:	BCK
CHECKED:	BF
PROJECT NO:	12-410

SHEET: Area 17
OF:

TABLE 19-36 SUMMARY

ALTERNATE 2 - GRAVITY SEWER SYSTEM

COST SUMMARY FOR PLANNING AREA

CONTRACT # (AREA #)	TABLE #	LOCATION DESCRIPTION	AMOUNT
1	19	Foxcroft/Yorktown/Buckley's Creek / Whayne Supply	$ 2,085,647.00
2	20	Expand Existing Pikeville WWTP	*SEE PLANT EST.*
3	21	Marion Branch Development - Phase 1	$ 2,743,251.00
4	22	Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)	$ 1,845,245.00
5	23	Wagner Station / Kinnikinnick / Blairtown / Mullins Hill	$ 1,707,586.00
6	24	Marion Branch Development - Phase 2	$ 2,607,822.67
7	25	Broad Bottom	$ 4,397,958.50
8	26	Right Fork of Island Creek / Coon Branch / Kati Street	$ 5,603,522.50
9	27	Deskins and Potter Development Sites / Coal Run Hill	$ 2,544,152.00
10	28	Marion Branch Development - Phase 3	$ 2,273,450.33
11	29	Left Fork of Island Creek / Road Fork	$ 4,838,508.00
12	30	Boldman Bottom	$ 1,597,285.50
13	31	Ratliff Creek	$ 6,256,360.00
14	32	Stonecoal Road	$ 6,458,909.00
15	33	Miscellaneous Sewer System Upgrades	$ 2,564,185.00
16	34	Hurricane Creek - Phase I - Lower	$ 7,729,672.00
17	35	Hurricane Creek - Phase 2 - Upper	$ 5,271,154.00
18	36	~~This Space has been Left Blank Intentionally~~	
SUBTOTAL CONSTRUCTION COST			**$ 55,695,810.50**
CONTINGENCY @ 15%			**$ 8,354,371.58**
NON CONSTRUCTION COSTS: RIGHT OF WAY, LEGAL SERVICES, BOND COUNCIL, ENGINEERING, DESIGN, ADMIN, INSPECTION @ 35%			**$ 25,063,114.73**
ESTIMATED PROJECT COST			**$ 89,113,296.80**

Notes:

1. Gravity Sewer Alternates Assume an Additional 10% for Right of Way Acquisitions.
2. See Tables 19-36 for detailed opinions of probable construction cost for the above areas.

TABLE 19
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Foxcroft/Yorktown/Buckley's Creek / Whayne Supply

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 60,747.00
	Landscape Allowance	Mile	$ 1,000.00	6	$ 6,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	6	$ 12,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	9,500	$ 380,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	17,600	$ 880,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	39	$ 97,500.00
	Manhole	EA	$ 3,500.00	88	$ 308,000.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	1	$ 3,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	800	$ 10,400.00
	2" SDR11 HDPE	LF	$ 15.00	2,500	$ 37,500.00
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	370	$ 74,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 50,000.00	1	$ 50,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	2	$ 25,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	2	$ 50,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00		$ -
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 2,085,647.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 20
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Expand Existing Pikeville WWTP

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ -
	Landscape Allowance	Mile	$ 1,000.00	0	$ -
	Seeding and Cleanup	Mile	$ 2,000.00	0	$ -
	Removal of Existing Septic Tank	EA	$ 1,500.00	0	$ -
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	0	$ -
	1.25" SDR11 HDPE	LF	$ 13.00	0	$ -
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ -		$ -
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 7,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00		$ -
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ -**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 21
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Marion Branch Development - Phase 1

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 79,901.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	10,400	$ 416,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	11,500	$ 575,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	260	$ 650,000.00
	Manhole	EA	$ 3,500.00	58	$ 201,250.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	10,200	$ 132,600.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00	4,250	$ 68,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	200	$ 30,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	50	$ 262,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	1	$ 12,500.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	3	$ 7,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,743,251.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 22
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Miscellaneous Lift Station Upgrades (Huffman, Walters, Etc)

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 53,745.00
	Landscape Allowance	Mile	$ 1,000.00	1	$ 1,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	1	$ 2,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	0	$ -
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	1	$ 3,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	0	$ -
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00	1,000	$ 18,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00	500	$ 12,500.00
	10" SDR11 HDPE	LF	$ 38.00	500	$ 19,000.00
	16" SDR11 HDPE	LF	$ 48.00	750	$ 36,000.00
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00	300	$ 120,000.00
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00	200	$ 80,000.00
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	50	$ 125,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00	1	$ 175,000.00
	600 gpm Submersible Pump Station	EA	$ 200,000.00	1	$ 200,000.00
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00	1	$ 500,000.00
	Pump Station Backup Power	EA	$ 50,000.00	2	$ 100,000.00
	ADD for Odor Control	EA	$ 35,000.00	6	$ 210,000.00
	ESTIMATED CONSTRUCTION COST				**$ 1,845,245.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.

TABLE 23
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Wagner Station / Kinnikinnick / Blairtown / Mullins Hill

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 49,736.00
	Landscape Allowance	Mile	$ 1,000.00	6	$ 6,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	6	$ 12,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	21,800	$ 872,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	1,540	$ 77,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	109	$ 272,500.00
	Manhole	EA	$ 3,500.00	8	$ 26,950.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	1	$ 3,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	800	$ 10,400.00
	2" SDR11 HDPE	LF	$ 15.00	2,500	$ 37,500.00
	3" SDR11 HDPE	LF	$ 16.00	1,000	$ 16,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	340	$ 68,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 100,000.00	1	$ 100,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	2	$ 25,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	2	$ 50,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	2	$ 5,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 1,707,586.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 24
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM (MUST BE PRESSURE SEWER)
Marion Branch Development - Phase 2

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 75,956.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	8,800	$ 352,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	12,500	$ 625,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	220	$ 550,000.00
	Manhole	EA	$ 3,500.00	83	$ 291,666.67
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	10,400	$ 135,200.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00	1,250	$ 20,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	200	$ 30,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	50	$ 262,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	2	$ 25,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	3	$ 7,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,607,822.67**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 25
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Broad Bottom

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 128,096.00
	Landscape Allowance	Mile	$ 1,000.00	13	$ 13,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	13	$ 26,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	24,000	$ 960,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	22,535	$ 1,126,750.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	120	$ 300,000.00
	Manhole	EA	$ 3,500.00	113	$ 394,362.50
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	4	$ 12,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	16,000	$ 208,000.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00	1,500	$ 33,000.00
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00	300	$ 60,000.00
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	400	$ 80,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	25	$ 131,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	10	$ 125,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00	1	$ 100,000.00
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00	1	$ 150,000.00
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 4,397,958.50**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 26
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Right Fork of Island Creek / Coon Branch / Kati Street

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 163,210.00
	Landscape Allowance	Mile	$ 1,000.00	17	$ 17,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	17	$ 34,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	37,600	$ 1,504,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	34,275	$ 1,713,750.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	188	$ 470,000.00
	Manhole	EA	$ 3,500.00	171	$ 599,812.50
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	8,000	$ 104,000.00
	2" SDR11 HDPE	LF	$ 15.00	5,000	$ 75,000.00
	3" SDR11 HDPE	LF	$ 16.00	1,000	$ 16,000.00
	4" SDR11 HDPE	LF	$ 18.00	1,000	$ 18,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	340	$ 68,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	25	$ 131,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	10	$ 125,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 5,603,522.50**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.

TABLE 27
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Deskins and Potter Development Sites / Coal Run Hill

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 74,102.00
	Landscape Allowance	Mile	$ 1,000.00	9	$ 9,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	9	$ 18,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	2,400	$ 96,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	18,750	$ 937,500.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	60	$ 150,000.00
	Manhole	EA	$ 3,500.00	125	$ 437,500.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	5	$ 15,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	12,600	$ 163,800.00
	2" SDR11 HDPE	LF	$ 15.00	3,250	$ 48,750.00
	3" SDR11 HDPE	LF	$ 16.00	7,500	$ 120,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	56	$ 294,000.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	4	$ 50,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	3	$ 75,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 2,544,152.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.

TABLE 28
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Marion Branch Development - Phase 3

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 66,217.00
	Landscape Allowance	Mile	$ 1,000.00	7	$ 7,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	7	$ 14,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	2,720	$ 108,800.00
	8" diameter SDR 35 PVC	LF	$ 50.00	19,000	$ 950,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	68	$ 170,000.00
	Manhole	EA	$ 3,500.00	127	$ 443,333.33
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	2,200	$ 28,600.00
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00		$ -
	4" SDR11 HDPE	LF	$ 18.00	10,000	$ 180,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	10	$ 52,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	1	$ 25,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	1	$ 2,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00		$ -
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,273,450.33**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.

TABLE 29
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Left Fork of Island Creek / Road Fork

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 140,928.00
	Landscape Allowance	Mile	$ 1,000.00	16	$ 16,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	16	$ 32,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	30,200	$ 1,208,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	26,800	$ 1,340,000.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	151	$ 377,500.00
	Manhole	EA	$ 3,500.00	134	$ 469,000.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	5	$ 15,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	13,160	$ 171,080.00
	2" SDR11 HDPE	LF	$ 15.00	5,000	$ 75,000.00
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	400	$ 80,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	20	$ 105,000.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	8	$ 100,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00	2	$ 70,000.00
	ESTIMATED CONSTRUCTION COST				**$ 4,838,508.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout. 1.25" service line is estimated separately under the 1.25" force main section.

TABLE 30
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Boldman Bottom

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 46,523.00
	Landscape Allowance	Mile	$ 1,000.00	5	$ 5,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	5	$ 10,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	1	$ 1,500.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	9,025	$ 361,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	9,275	$ 463,750.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	76	$ 190,000.00
	Manhole	EA	$ 3,500.00	46	$ 162,312.50
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	1	$ 3,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	400	$ 5,200.00
	2" SDR11 HDPE	LF	$ 15.00	1,000	$ 15,000.00
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00		$ -
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00	300	$ 45,000.00
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00	100	$ 15,000.00
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	120	$ 24,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 35,000.00	1	$ 35,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	2	$ 25,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00		$ -
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	2	$ 150,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00		$ -
	ESTIMATED CONSTRUCTION COST				**$ 1,597,285.50**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 31
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Ratliff Creek

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 182,225.00
	Landscape Allowance	Mile	$ 1,000.00	18	$ 18,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	18	$ 36,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	45,200	$ 1,808,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	35,150	$ 1,757,500.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	226	$ 565,000.00
	Manhole	EA	$ 3,500.00	176	$ 615,125.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	3	$ 9,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	770	$ 10,010.00
	2" SDR11 HDPE	LF	$ 15.00	5,000	$ 75,000.00
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	350	$ 70,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	30	$ 157,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	10	$ 125,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	8	$ 20,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00	1	$ 100,000.00
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	2	$ 100,000.00
	ADD for Odor Control	EA	$ 35,000.00	2	$ 70,000.00
	ESTIMATED CONSTRUCTION COST				**$ 6,256,360.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 32
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Stonecoal Road

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 188,124.00
	Landscape Allowance	Mile	$ 1,000.00	20	$ 20,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	20	$ 40,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	38,000	$ 1,520,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	43,550	$ 2,177,500.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	190	$ 475,000.00
	Manhole	EA	$ 3,500.00	218	$ 762,125.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	4	$ 12,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	10,570	$ 137,410.00
	2" SDR11 HDPE	LF	$ 15.00	5,000	$ 75,000.00
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	600	$ 120,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	25	$ 131,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	10	$ 125,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 6,458,909.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 33
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Miscellaneous Sewer System Upgrades

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 74,685.00
	Landscape Allowance	Mile	$ 1,000.00	2	$ 2,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	2	$ 4,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	0	$ -
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00		$ -
	8" diameter SDR 35 PVC	LF	$ 50.00		$ -
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00		$ -
	Manhole	EA	$ 3,500.00	0	$ -
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	2	$ 6,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	0	$ -
	2" SDR11 HDPE	LF	$ 15.00		$ -
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00	2,500	$ 55,000.00
	8" SDR11 HDPE	LF	$ 25.00	2,500	$ 62,500.00
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00	2,500	$ 120,000.00
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00		$ -
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 25,000.00	1	$ 25,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00		$ -
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00		$ -
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00		$ -
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	200	$ 500,000.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	2	$ 150,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	2	$ 180,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00	1	$ 175,000.00
	600 gpm Submersible Pump Station	EA	$ 200,000.00	1	$ 200,000.00
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00	1	$ 500,000.00
	Pump Station Backup Power	EA	$ 50,000.00	5	$ 250,000.00
	ADD for Odor Control	EA	$ 35,000.00	5	$ 175,000.00
	ESTIMATED CONSTRUCTION COST				**$ 2,564,185.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 34
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Hurricane Creek - Phase I - Lower

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 225,137.00
	Landscape Allowance	Mile	$ 1,000.00	25	$ 25,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	25	$ 50,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	48,200	$ 1,928,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	46,450	$ 2,322,500.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	241	$ 602,500.00
	Manhole	EA	$ 3,500.00	232	$ 812,875.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	7	$ 21,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	15,820	$ 205,660.00
	2" SDR11 HDPE	LF	$ 15.00	10,000	$ 150,000.00
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00	2,500	$ 55,000.00
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00	300	$ 60,000.00
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	520	$ 104,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	30	$ 157,500.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	10	$ 125,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00		$ -
	150 gpm Submersible Pump Station	EA	$ 100,000.00	1	$ 100,000.00
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00	1	$ 150,000.00
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00	1	$ 50,000.00
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 7,729,672.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 35
OPINION OF PROBABLE CONSTRUCTION COST FOR
GRAVITY SEWER COLLECTION AND CONVEYANCE SYSTEM
Hurricane Creek - Phase 2 - Upper

ITEM #	ITEM DESCRIPTION	UNIT	UNIT COST	QTY	AMOUNT
1	**GENERAL**				
	Mobilization/Demobilization	LS	3.00%	1	$ 153,529.00
	Landscape Allowance	Mile	$ 1,000.00	16	$ 16,000.00
	Seeding and Cleanup	Mile	$ 2,000.00	16	$ 32,000.00
	Removal of Existing Septic Tank	EA	$ 1,500.00	2	$ 3,000.00
2	**GRAVITY SEWER PIPE**				
	4" diameter SDR 35 PVC	LF	$ 40.00	37,200	$ 1,488,000.00
	8" diameter SDR 35 PVC	LF	$ 50.00	28,650	$ 1,432,500.00
	Tee Wye - Lateral Stub Out Assembly	EA	$ 2,500.00	186	$ 465,000.00
	Manhole	EA	$ 3,500.00	143	$ 501,375.00
3	**FORCE MAINS**				
	Air/Vacuum Relief Assembly	EA	$ 3,000.00	4	$ 12,000.00
	1.25" SDR11 HDPE	LF	$ 13.00	8,000	$ 104,000.00
	2" SDR11 HDPE	LF	$ 15.00	5,000	$ 75,000.00
	3" SDR11 HDPE	LF	$ 16.00	2,500	$ 40,000.00
	4" SDR11 HDPE	LF	$ 18.00	2,500	$ 45,000.00
	6" SDR11 HDPE	LF	$ 22.00		$ -
	8" SDR11 HDPE	LF	$ 25.00		$ -
	10" SDR11 HDPE	LF	$ 38.00		$ -
	16" SDR11 HDPE	LF	$ 48.00		$ -
4	**RIVER CROSSING**				
	3" River Crossing	LF	$ 150.00		$ -
	4" River Crossing	LF	$ 175.00		$ -
	6" River Crossing	LF	$ 200.00		$ -
	8" River Crossing	LF	$ 225.00		$ -
	16" River Crossing	LF	$ 400.00		$ -
5	**ENCASEMENTS**				
	Bore and Encasement for 3" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 4" Pipe	LF	$ 150.00		$ -
	Bore and Encasement for 6" Pipe	LF	$ 175.00		$ -
	Bore and Encasement for 8" Pipe	LF	$ 200.00	300	$ 60,000.00
	Bore and Encasement for 16" Pipe	LF	$ 400.00		$ -
6	**PAVEMENT REPLACEMENT**				
	Bituminous Pavement Replacement (Note 2)	LS	$ 250,000.00	1	$ 250,000.00
7	**RESIDENTIAL GRINDER PUMP STATION**				
	Simplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 5,250.00	25	$ 131,250.00
	Duplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 12,500.00	10	$ 125,000.00
	Quadplex Grinder Pump Station Complete and In Service with Pressure Sewer Lateral Assembly (Note 3)	EA	$ 25,000.00	5	$ 125,000.00
	Residential Core Grinder Pump, Suitably Stored	EA	$ 2,500.00	5	$ 12,500.00
8	**LIFT STATIONS**				
	50 gpm Submersible Pump Station	EA	$ 75,000.00	1	$ 75,000.00
	100 gpm Submersible Pump Station	EA	$ 90,000.00	1	$ 90,000.00
	150 gpm Submersible Pump Station	EA	$ 100,000.00		$ -
	200 gpm Submersible Pump Station	EA	$ 125,000.00		$ -
	250 gpm Submersible Pump Station	EA	$ 150,000.00		$ -
	400 gpm Submersible Pump Station	EA	$ 175,000.00		$ -
	600 gpm Submersible Pump Station	EA	$ 200,000.00		$ -
	1,000 gpm Submersible Pump Station	EA	$ 275,000.00		$ -
	2,500 gpm Submersible Pump Station	EA	$ 500,000.00		$ -
	Pump Station Backup Power	EA	$ 50,000.00		$ -
	ADD for Odor Control	EA	$ 35,000.00	1	$ 35,000.00
	ESTIMATED CONSTRUCTION COST				**$ 5,271,154.00**

Assumptions

1. Bore and encasement required under US and KY highways and railroads. LF price for force mains includes all valves!
2. Bituminous Pavement Replacement is over width of trench only.
3. Unit price per grinder pump includes 1 pressure sewer lateral assembly, 30 ft of 4" sewer lateral, cleanout.
   1.25" service line is estimated separately under the 1.25" force main section.

TABLE 37
PRESSURE SEWER OPERATING AND MAINTENANCE
COST OPINION
0-2 YEAR PLANNING PERIOD

ITEM	ANNUAL COST
DIRECT OPERATION AND MAINTENANCE	
Existing Pikeville Gravity Sewer Lines Total Length (LF) = 313,700 (Total Length) (1 mile/5280 lf) ($500/mile/yr) = $	$29,706
New Pressure Sewer Lines Existing Pikeville Pressure Total Length (LF) = 46,300 288,351 (Total Length) (1 mile/5280 lf) ($250/mile/yr) = $	$15,845
Pressure Sewer Grinder Pump Maintenance Assume $250 per unit per year Total # of Grinders = 39 Ex. Grinders 661	$175,000
Lift Station Repairs Assume $2,500 per year per station Existing Pikeville Total # of Stations = 2 Lift Stations = 38	$100,000
Existing Pikeville Lift Stations New Main Line Lift Stations = 2 Total Stations = 38 Total HP = 6 Total HP = 390 Electrical Power	
Total HP x .746 kW/hp x 12 hr/day x .09$/kW-hr x 365 day/yr = $	$116,306
Lift Station Odor Control (Assume 2, 1500 gallon fills per year @ $2.25/gal) Assume $6,750 per year per Unit Existing Pikeville # of Units = 6 # of Units = 4	$67,500
SUBTOTAL DIRECT OPERATION AND MAINTENANCE =	**$504,358**
Personnel Costs (66% of 2011 Audit Total) =	$49,683
Contractural Services (33% of 2011 Audit Total) =	$228,774
Depreciation (33% of 2011 Audit Total) =	$140,489
Other Debt = See Table 8C-3	$0
15% O&M CONTINGENCY	**$138,496**
TOTAL O & M COSTS	**$1,061,800**

1. Assume maximum horsepower is used when pumps are running

TABLE 38
PRESSURE SEWER OPERATING AND MAINTENANCE
COST OPINION
3-10 YEAR PLANNING PERIOD

ITEM	ANNUAL COST
DIRECT OPERATION AND MAINTENANCE	
New Pressure Sewer Lines Total Length (LF) = 144,100 (Total Length) (1 mile/5280 lf) ($250/mile/yr) = $	$6,823
Pressure Sewer Grinder Pump Maintenance Assume $250 per unit per year Total # of Grinders = 538	$134,500
Lift Station Repairs Assume $2,500 per year per station Total # of Stations = 4	$10,000
New Main Line Lift Stations = 4 Total HP = 12 Electrical Power	
Total HP x .746 kW/hp x 12 hr/day x .09$/kW-hr x 365 day/yr = $	$3,529
Lift Station Odor Control (Assume 2, 1500 gallon fills per year @ $2.25/gal) Assume $6,750 per year per Unit # of Units = 3	$20,250
SUBTOTAL DIRECT OPERATION AND MAINTENANCE =	**$175,102**
Personnel Costs =	$17,249
Contractural Services =	$79,425
Depreciation =	$48,775
Other Debt = See Table 8C-3	$0
15% O&M CONTINGENCY	**$48,083**
TOTAL O & M COSTS	**$368,633**

1. Assume maximum horsepower is used when pumps are running

2. Personnel, Contractural, and Depreciation costs were calculated by ratio of direct operating expense subtotal increase from Phase 1 to Phase 2

TABLE 39
PRESSURE SEWER OPERATING AND MAINTENANCE
COST OPINION
11-20 YEAR PLANNING PERIOD

ITEM	ANNUAL COST
DIRECT OPERATION AND MAINTENANCE	
New Pressure Sewer Lines Total Length (LF) = 253,435 (Total Length) (1 mile/5280 lf) ($250/mile/yr) = $	$12,000
Pressure Sewer Grinder Pump Maintenance Assume $250 per unit per year Total # of Grinders = 1223	$305,750
Lift Station Repairs Assume $2,500 per year per station Total # of Stations = 4	$10,000
New Main Line Lift Stations = 4 Total HP = 15 Electrical Power	
Total HP x .746 kW/hp x 12 hr/day x .09$/kW-hr x 365 day/yr = $	$4,411
Lift Station Odor Control (Assume 2, 1500 gallon fills per year @ $2.25/gal) Assume $6,750 per year per Unit # of Units = 11	$74,250
SUBTOTAL DIRECT OPERATION AND MAINTENANCE =	**$406,411**
Personnel Costs =	$40,034
Contractural Services =	$184,346
Depreciation =	$113,206
Other Debt = See Table 8C-3	$0
15% O&M CONTINGENCY	**$111,600**
TOTAL O & M COSTS	**$855,597**

1. Assume maximum horsepower is used when pumps are running

2. Personnel, Contractural, and Depreciation costs were calculated by ratio of direct operating expense subtotal increase from Phase 1 to Phase 3

TABLE 40
4.0 MGD MEMBRANE BIOREACTOR SYSTEM WWTP
ENGINEER'S OPINION OF PROBABLE PROJECT COST

ITEM			COST
Contract 1			
Upgrade existing 2.0 MGD Extended Aeration WWTP to a 4.0 MGD MBR System WWTP complete, in place, tested and ready for service (Note 1).		$	18,111,600
Construction CCI % to Convert Construction Prices to Present @	0.00%	$	-
Subtotal (Construction Cost w/CCI)		$	18,111,600
Construction Contingencies @ 15%		$	2,716,740
Probable Construction Cost		**$**	**20,828,340**
Non Construction Costs			
Basic Engineering @	6.40%	$	1,333,014
Resident Inspection @	4.05%	$	823,048
Additional Engineering Services			
EA/HTRW - Environmental		$	10,000
Project Funding Administration Assistance		$	10,000
RD Preliminary & Final Reports		$	12,500
KIA/EPA Special Rqmts (Checklists/Ops Plan/ATA Package)		$	12,500
Treatment Plant O&M Manual		$	50,000
Aerial Mapping/Surveying		$	20,000
Right of Way Assistance - Negotiations only if Requested		$	15,000
Right of Way Assistance - Plat of Consolidation Plant Site		$	40,000
CDBG Admininistration		$	185,000
BSADD Administration Fees	2.50%	$	520,709
Right of Way			
Also see assistance items under Additional Engineering & Legal			-----
Miscellaneous R/W Easements, Etc		$	50,000
Geotechnical		$	30,000
Archaeological		$	7,500
Permits & Advertisements (Esp RR)		$	25,000
Legal - Right of Way Title Opinions, Condemnation, etc.		$	25,000
Legal - Bond / Loan Closings - Contracts Review - Etc.		$	185,000
OPINION OF PROBABLE PROJECT COST		**$**	**24,182,610**

Notes:

1. Engineer's opinion of probable construction cost of Membrane Bioreactor WWTP option was obtained from "preliminary engineering report" prepared by Vaughn and Melton (V&M). Project #51250-09

TABLE 41
4.0 MGD IFAS SYSTEM WWTP
ENGINEER'S OPINION OF PROBABLE PROJECT COST

ITEM			COST
Contract 1			
Upgrade existing 2.0 MGD Extended Aeration WWTP to a 4.0 MGD IFAS System WWTP complete, in place, tested and ready for service (Note 1).		$	15,294,000
Construction CCI % to Convert Construction Prices to Present @	0.00%	$	-
Subtotal (Construction Cost w/CCI)		$	15,294,000
Construction Contingencies @ 15%		$	2,294,100
Probable Construction Cost		**$**	**17,588,100**
Non Construction Costs			
Basic Engineering @	6.40%	$	1,125,638
Resident Inspection @	4.05%	$	691,818
Additional Engineering Services			
EA/HTRW - Environmental		$	10,000
Project Funding Administration Assistance		$	10,000
RD Preliminary & Final Reports		$	12,500
KIA/EPA Special Rqmts (Checklists/Ops Plan/ATA Package)		$	12,500
Treatment Plant O&M Manual		$	50,000
Aerial Mapping/Surveying		$	20,000
Right of Way Assistance - Negotiations only if Requested		$	15,000
Right of Way Assistance - Plat of Consolidation Plant Site		$	40,000
CDBG Admininistration		$	185,000
BSADD Administration Fees	2.50%	$	439,703
Right of Way			
Also see assistance items under Additional Engineering & Legal			-----
Miscellaneous R/W Easements, Etc		$	50,000
Geotechnical		$	30,000
Archaeological		$	7,500
Permits & Advertisements (Esp RR)		$	25,000
Legal - Right of Way Title Opinions, Condemnation, etc.		$	25,000
Legal - Bond / Loan Closings - Contracts Review - Etc.		$	185,000
OPINION OF PROBABLE PROJECT COST		**$**	**20,522,759**

Notes:

1. Engineer's opinion of probable construction cost of IFAS WWTP option was obtained from "preliminary engineering report" prepared by Vaughn and Melton (V&M). Project #51250-09

TABLE 42
4.0 MGD SBR SYSTEM WWTP
ENGINEER'S OPINION OF PROBABLE PROJECT COST

ITEM			COST
Contract 1			
Upgrade existing 2.0 MGD Extended Aeration WWTP to a 4.0 MGD SBR System WWTP complete, in place, tested and ready for service (Note 1).		$	15,797,100
Construction CCI % to Convert Construction Prices to Present @	0.00%	$	-
Subtotal (Construction Cost w/CCI)		$	15,797,100
Construction Contingencies @ 15%		$	2,369,565
Probable Construction Cost		**$**	**18,166,665**
Non Construction Costs			
Basic Engineering @	6.40%	$	1,162,667
Resident Inspection @	4.05%	$	715,250
Additional Engineering Services			
EA/HTRW - Environmental		$	10,000
Project Funding Administration Assistance		$	10,000
RD Preliminary & Final Reports		$	12,500
KIA/EPA Special Rqmts (Checklists/Ops Plan/ATA Package)		$	12,500
Treatment Plant O&M Manual		$	50,000
Aerial Mapping/Surveying		$	20,000
Right of Way Assistance - Negotiations only if Requested		$	15,000
Right of Way Assistance - Plat of Consolidation Plant Site		$	40,000
CDBG Admininistration		$	185,000
BSADD Administration Fees	2.50%	$	454,167
Right of Way			
Also see assistance items under Additional Engineering & Legal			-----
Miscellaneous R/W Easements, Etc		$	50,000
Geotechnical		$	30,000
Archaeological		$	7,500
Permits & Advertisements (Esp RR)		$	25,000
Legal - Right of Way Title Opinions, Condemnation, etc.		$	25,000
Legal - Bond / Loan Closings - Contracts Review - Etc.		$	185,000
OPINION OF PROBABLE PROJECT COST		**$**	**21,176,248**

Notes:

1. Engineer's opinion of probable construction cost of SBR WWTP option was obtained from "preliminary engineering report" prepared by Vaughn and Melton (V&M). Project #51250-09

TABLE 43
ESTIMATED OPERATION AND MAINTENANCE (O&M) COSTS
4.0 MGD MEMBRANE BIOREACTOR SYSTEM WWTP
AT FULL CAPACITY (Note 1)

#	DESCRIPTION	AMOUNT
A	Parts and Replacement	$ 300,000.00
B	Utilities	
	Power	$ 574,000.00
	All other utilities (Gas, Water, Etc.)	$ 10,000.00
C	Miscellaneous	$ 20,000.00
D	Supplies / Chemicals	$ 90,000.00
E	Sludge Handling and Disposal (1,030 Tons @ $150 / Ton)	$ 56,392.00
ANNUAL ESTIMATED O&M COST TOTAL (Note 1) =		**$ 1,050,392.00**

Notes:
1. Engineer's opinion of probable O&M cost of Membrane Bioreactor WWTP option was obtained from "preliminary engineering report" prepared by Vaughn and Melton (V&M). Project #51250-09

TABLE 44
ESTIMATED OPERATION AND MAINTENANCE (O&M) COSTS
4.0 MGD IFAS SYSTEM WWTP
AT FULL CAPACITY (Note 1)

#	DESCRIPTION	AMOUNT
A	Parts and Replacement	$ 60,000.00
B	Utilities	
	Power	$ 452,000.00
	All other utilities (Gas, Water, Etc.)	$ 10,000.00
C	Miscellaneous	$ 20,000.00
D	Supplies / Chemicals	$ 80,000.00
E	Sludge Handling and Disposal (936 Tons @ $150 / Ton)	$ 51,246.00
ANNUAL ESTIMATED O&M COST TOTAL (Note 1) =		**$ 673,246.00**

Notes:
1. Engineer's opinion of probable O&M cost of IFAS WWTP option
was obtained from "preliminary engineering report" prepared by Vaughn and Melton (V&M).
Project #51250-09

TABLE 45
ESTIMATED OPERATION AND MAINTENANCE (O&M) COSTS
4.0 MGD SBR SYSTEM WWTP
AT FULL CAPACITY (Note 1)

#	DESCRIPTION	AMOUNT
A	Parts and Replacement	$ 45,000.00
B	Utilities	
	Power	$ 590,000.00
	All other utilities (Gas, Water, Etc.)	$ 10,000.00
C	Miscellaneous	$ 20,000.00
D	Supplies / Chemicals	$ 50,000.00
E	Sludge Handling and Disposal (1,134 Tons @ $150 / Ton)	$ 62,086.00
ANNUAL ESTIMATED O&M COST TOTAL (Note 1) =		**$ 777,086.00**

Notes:
1. Engineer's opinion of probable O&M cost of SBR WWTP option
was obtained from "preliminary engineering report" prepared by Vaughn and Melton (V&M).
Project #51250-09

APPENDIX E

SEWER USE AGREEMENT

CITY OF PIKEVILLE, KY
UTILITY SERVICE AGREEMENT CONCERNING
GAS, WATER & SEWER SYSTEM FOR CUSTOMER

This Agreement Concerning Water and or Sewer System for Customer Service is entered into by and between The City of Pikeville (the "**CITY**") and _____ ("**CUSTOMER**") for sanitary sewer service to the property located at _____ ("Property").

Please Check The Box That Applies:

_____ "WATER" **_____ "SEWER"** **_____ "GAS"**

WHEREAS, the **CITY** owns, operates and maintains a natural gas, water and sanitary sewer system from which **CUSTOMER** desires to obtain sewer service; and

WHEREAS, for sewer customers the elevation and/or slope of the Property in relation to the location of the City's sanitary sewer system requires the installation of a either a gravity system or pressure sewer system commonly known as a grinder pump system ("Grinder Pump") in order to transport **CUSTOMER'S** sewage to the **CITY'S** sanitary sewer system; and

WHEREAS, the **CITY'S** gas, water and or sanitary system is regulated by the "rules and regulations" set forth by the City's Code of Ordinance under Chapter 54; and

WHEREAS, the **CITY** only allows gas, water or sewer service to a **CUSTOMER** property through the terms and conditions set forth by the execution of this agreement; and

WHEREAS, the **CUSTOMER** does desires to connect to the **CITY'S** gas, water and or sanitary sewer system to receive water and or sewer service from the **CITY**;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the **CITY** and **CUSTOMER** agree as follows:

1. As a condition to initiation and continuation of water and or sanitary sewer service to **CUSTOMER** by the **CITY**:

a. The **CUSTOMER** agrees to grant to the **CITY**, its successors and assigns, a perpetual easement in, over, through, under and upon the above described land, with the right to

erect, construct, install and lay and thereafter use, operate, inspect, repair, maintain, replace, and remove gas, water or sewer lines and appurtenant facilities, together with the right to utilize adjoining lands belonging to the user for the purpose of ingress to egress from the above described lands.

b. For Sewer Service the **CITY** shall be responsible for the maintenance of that portion of the service lateral installed by the **CITY** and the **CUSTOMER** shall be responsible for the maintenance of that portion thereof installed by the consumer on gravity systems. On pressurized system, the customer shall be responsible for that portion of sewer lateral beyond the grinder station. The **CITY** shall be responsible for the maintenance and replacement of all grinder pump equipment used in connection with its pressurized sewer system with the exception of malfunctions caused by abuse on the part of the customer, including, but not limited to, subjecting the system to excessive amounts of grease or the disposal of improper or foreign items.

c. The **CUSTOMER** hereby agrees to connect to the water and or sewer system of the **CITY**. The top-on fee of the sewer system is $_____. A State inspection fee payable to the Kentucky State Treasure of $_____ will be charged (residential) at the time of connection (all businesses must obtain permits at the Pike County Health Department).

d. The **CUSTOMER** agrees to comply with and is bound to and by the **CITY'S** Utility Rules and Regulations as listed and adopted by the Pikeville City Commission under Chapter 54 of the City's Code of Ordinances.

e. The **CITY** shall have final authority on any questions of location of any service line connection to its gas, water and or sewer system, and may shut off services to a user who allows a connection or extension to be made to such sewer lines for the purpose of supplying water and or sewer service to another user.

f. For sewer systems the **CUSTOMER** agrees that the **CITY** shall have the right to stop any discharges from the Grinder Pump in order to prevent contamination of state waters.

g. For sewer system the Customer agrees that the **CITY** and its representatives shall have the right to enter the **CUSTOMER'S** property to operate, maintain and repair water systems, gravity systems or Grinder Pump systems on behalf of the **CUSTOMER**, as well as to stop discharge from the Grinder Pump in order to prevent contamination of waterways.

2. The **CITY** and **CUSTOMER** agree that the Grinder Pump shall be regarded as an integral component of the **CITY'S** sanitary sewer system and not as a part of the home plumbing for the Property.

3. The **CUSTOMER** agrees to pay all fees and charges as set forth by the **CITY** as outlined in the **CITY'S** Rate Ordinance and Rules and Regulations and understands the **CITY'S** rates and or Rules and Regulations may be amended from time to time.

4. The **CUSTOMER** acknowledges and agrees that failure of **CUSTOMER** to pay all costs associated with the operation and maintenance of the Grinder Pump as set forth in this agreement or the **CITY'S** Rates and Rules and Regulations or failure of **CUSTOMER** to allow the **CITY**

and its representatives to enter **CUSTOMER'S** property, as set forth in Section 1.g. above, shall be grounds for the disconnection of gas, water and wastewater service to the Property.

5. This Agreement shall be performable in Pike County, Kentucky, which county shall be the exclusive place for venue for any disputes arising under the Agreement.

6. Any amendments to this Agreement must be in writing and signed by both the **CITY** and the **CUSTOMER**.

7. This Agreement is not assignable by **CUSTOMER**. Upon termination of service to the Property, any new customer desiring to receive gas, water and/or wastewater service from the **CITY** shall be required to execute their own service agreement.

8. **CUSTOMER** AGREES TO INDEMNIFY AND HOLD HARMLESS THE **CITY**, ITS OFFICERS, DIRECTORS, EMPLOYEES OR REPRESENTATIVES FROM ANY CLAIMS OR DAMAGES ASSOCIATED WITH OR ARISING FROM DESIGN, OPERATION OR MAINTENANCE OF THE GRINDER PUMP.

9. For sewer grinder systems he Grinder Pump will be powered by **CUSTOMER'S** home electrical system. In the event that power service to the Grinder Pump is disrupted, **CUSTOMER** shall be responsible for taking measures to prevent the backup of wastewater on the Property.

10. By signing this agreement **CUSTOMER** agrees that all information given below is accurate and true and understands any false information given may result in disconnection of service and any balance from the **CUSTOMER** on a previous account must be paid in full before new service can be connected.

CUSTOMER SIGNATURE:

_____ _____

CUSTOMER Signature Date Executed

APPLICATION INFORMATION REQUIRED

Name:_____ Spouse_____

Last First Middle Last First Middle

S.S.#_____ S.S.#:_____

Drivers License #:_____ Drivers License #:_____

Employer:_____ Employer:_____

Work Phone:_____ Work Phone:_____

Mailing Address:_____

Home Phone:_____ Cell Phone:_____

Service Address:_____

Rent?_____ Own?_____

Landlord's Name?_____ Address?_____

For Official Use ONLY				
Account Number:				
If deposit or service charge is required list the amount:			**$**	
For which account:	Water		Gas	

APPENDIX F

1. SIGNED RESOLUTION BY CITY OF PIKEVILLE APPROVING THE FACILITIES PLAN

RESOLUTION # 2012-013

BE IT RESOLVED that the City of Pikeville hereby adopts the Pikeville Wastewater Facility Plan dated June, 2012 as prepared by Summit Engineering, Inc. this the 25th day of June, 2012.

City of Pikeville:

Frank Justice, II
Mayor