



WASHINGTON SUBURBAN SANITARY COMMISSION

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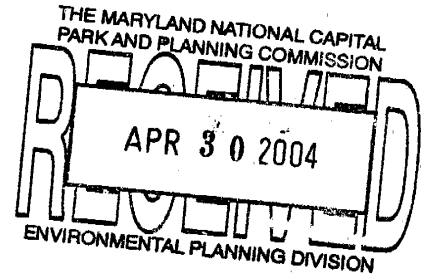
Attachment D

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April 27, 2004



Mr. Mark Pfeferle
Planning Coordinator
Environmental Planning
Montgomery County Department of Planning
Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

Re: WSSC Staff Comments on M-NCP&PC Request to Evaluate Alternatives to
Proposed Black Hills Park Trunk Sewer

Dear Mr. Pfeferle:

This letter is in response to your correspondence of February 27, 2004. This correspondence asked WSSC to consider alternate alignments for wastewater conveyance facilities serving the western area and Master Plan Development Stage 3 area of Clarksburg between Old Baltimore Road, Interstate 270, and Clarksburg Road (State Road 121). We can also describe this area as the named Cabin Branch development plan by Rodgers Consulting. The proposed alignment is a gravity trunk sewer traversing through Black Hill Regional Park.

M-NCP&PC staff provided WSSC with five (5) alternatives as shown on the attached charts. I consulted with WSSC staff regarding these alternatives. Rodgers Consulting staff, who are involved in the Cabin Branch development plan and the WSSC's Development Services Process (DSP), prepared basic information, in enclosures to this letter, regarding conceptual cost estimates for these alternatives. Rodgers also provided a summary table showing a side-by-side comparison of the gravity trunk sewer and the five alternatives offered.

In looking at the alternatives presented, WSSC staff has expressed some concerns. For many of these alternatives, an additional pumping station would be required which would add significant capital costs. In addition, another station would add significant

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Mark Pfeferle, Planner Coordinator
Maryland-National Capital Park & Planning Commission
WSSC Staff Comments on M-NCP&PC Request to Evaluate Alternatives to Proposed
Black Hills Park Trunk Sewer
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annual operational and maintenance costs, including increased energy consumption, which are supported by revenue from WSSC ratepayers. Some alternatives would involve significantly deep sewers -- some deeper than 30 feet below grade that would require special design and additional safety features adding to the construction cost and associated impacts. Our Sewer Design Guidelines state on page S-15, under General Vertical Alignment, that sewer pipelines over 20 feet deep "could create major problems with both construction and maintenance of the pipeline and should be avoided if possible."

Based on WSSC staff evaluation of the various alternatives offered, the alternatives would require additional capital costs, higher operation and maintenance costs, increased energy consumption, and present potential safety concerns. Therefore, WSSC staff feels strongly that CIP project S-84.46, the Black Hill Gravity Trunk Sewer, is still the preferred alternative. Although construction of this sewer may cause the loss of some trees in the park, we plan to work with the M-NCP&PC's Parks staff to minimize the impact -- as much as possible -- to the Black Hill Park. Also, concerning M-NCP&PC staff's concerns over deterioration of the gravity line over time and potential impact to local stream quality, the material WSSC uses today are far superior to those of 20 to 30 years ago. In addition, WSSC and the developer/consultant would like to work in cooperation with M-NCP&PC and MCDEP staff during design and construction of this gravity sewer to use procedures, to the extent possible, that minimize and/or mitigate any stream impacts.

If you have questions or require clarification on any of the preceding comments, please do not hesitate to contact me by telephone at 301-206-8809 or by e-mail at kdixon@wsscwater.com. Again, WSSC appreciates the opportunity to work cooperatively with M-NCP&PC in this process and look forward to assisting you and your staff as needed. Thank you for your cooperation and patience.

Sincerely,



Kenneth C. Dixon
Planning Unit Coordinator
Planning Group

KCD/

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Mark Pfeferle, Planner Coordinator
Maryland-National Capital Park & Planning Commission
WSSC Staff Comments on M-NCP&PC Request to Evaluate Alternatives to Proposed
Black Hills Park Trunk Sewer
April 27, 2004
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cc: Nazir Baig, Supervisor, Countywide Planning Division, M-NCP&PC
Mary Dolan, Environmental Planner, Countywide Planning Division, M-NCP&PC
Nellie Maskal, Community Planning, M-NCP&PC
Alan Soukup, Environmental Planning Specialist, Montgomery County
Department of Environmental Protection
Gary Unterberg, Rodgers Consulting
John Carman, Rodgers Consulting
Charles Loehr, Director, MNCPPC
Jorge Valladares Environmental Planning, MNCPPC
Herbert DeHoff, Construction Supervisor, Parks, MNCPPC
Planning Group Files SB 15.2, MC 2

TO: Ken Dixon, WSSC
FROM: Tim Stemann
SUBJ: Black Hills Regional Park Outfall Sewer
DATE: 3/8/04
CC: Gary Unterberg, RCI

Rodgers Consulting, Inc. (RCI) has performed a preliminary assessment and cost estimate for the five alternative layouts of the Black Hill Outfall Sewer Project (CIP 84.46). Our results are outlined below along with a description of the original design:

CIP 84.46: Sewage to drain through a 24-inch diameter outfall sewer along the tributary west of and parallel to Interstate 270 and south of West Old Baltimore Road. The sewer will connect with the existing 36 inch trunk sewer within Little Seneca Creek

- Requires a length of 4,150 feet of pipe.
- Requires one stream crossing and wetland impacts near the connection area.
- On park property.
- Previously approved by the U.S. Army Corps of Engineers and Maryland Department of the Environment.

Alternative 1: Pump sewage material from the Cabin Branch development and Stage IV across the stream that runs parallel to I-270, underneath I-270 and connect into the existing sewer line that runs through the Linthicum farm property, or run a parallel sewer line in this unforested stream valley.

- Will require construction of a 9-MGD (million gallons per day) pumping station.
- Requires a greater length of pipe than the originally proposed layout.
- Will require easements from 4 different property owners (Black Hill Park, Linthicum, Pulte Homes, and the State Highway Administration).
- Will require tunneling under I-270 or laying the pipe within the Little Seneca Creek culvert under I-270.
- Connection to the existing 36" pipe will take place in a wetland area.
- Requires two stream crossings (the creek adjacent to the pump station, and of the creek on the western side of I-270).

Alternative 2: Pump sewage material from the Cabin Branch development and Stage IV across the stream that runs parallel to I-270, underneath I-270 to a new line parallel to I-270 but on the east side of the Interstate.

- Will require construction of a 9 MGD pumping station.
- Requires easements from 3 different property owners (Black Hill Regional Park, Linthicum and Pulte Homes). The area within the Linthicum Property is in a developable area, zoned I-4 and will require appropriate compensation.
- Will require tunneling under I-270 or laying the pipe within the Little Seneca Creek culvert under I-270.

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- Connection to the existing 36" pipe will take place in a wetland area.
- Requires an additional stream crossing.

Alternative 3: Transport sewage material from the Cabin Branch development and Stage IV across the stream that runs parallel to I-270 and place the sewer line between the west side of the I-270 right-of-way and east of the stream. (Some MNCPPC staff believe this may have been the preferred route for the earlier FDA project):

- Use of gravity to convey sewage across the stream will require depths of over 30 feet.
- Due to the 75-foot right-of-way for the proposed Interstate widening, the pipe will have to cross the stream at multiple points. It is most likely this will not be permitted by the U.S. Corps of Engineers, considering there are alternatives that avoid such impacts.
- The proposed pipe will have to cross the wetlands at the widest point to connect to the manhole just west of I-270, increasing the impacts greatly.

Alternative 4: Pump sewage material from the Cabin Branch development and Stage IV along a route parallel to Lake Ridge Drive and then through existing forest clearings as much as possible to connect to the existing sewer line prior to the Crystal Rock Station.

- Will require a 9 MGD pumping station with sufficient head to pump from elevation 486 up to 540 (54 feet).
- Tree clearing and disturbance along Lake Ridge Drive will be required up to 50 feet wide.
- Replacement of the existing sewer pipe from the adjacent Maintenance facility will be required.
- Additional clearing along the unforested areas south of the maintenance facility may be required, as the total width is only 30 feet, and the trench width will average 40 feet.

Alternative 5: Transport sewage material, via gravity, through the park but at the 520-foot topographical contour elevation. This is similar to the topographical contour at the intersection of Lake Ridge Drive and West Old Baltimore Road. Utilize deep sewer lines when necessary to minimize the impact to the forest and to maintain a gravity feed system. Once at the highpoint, utilize as many forest clearings and paths as possible to minimize forest loss.

- With the starting invert at 486 at elevation 500 (14-foot depth) and running a length of 3600 feet and at an elevation of 520, with a 1% slope, the depth of pipe would be at least 70 feet. Considering the necessity to lay back slopes when excavating the trench at 2:1, this could require a 280-foot wide excavation operation, which would create a forest loss much greater than that of the original option. In addition, cost for manholes would be much higher.

The attached sheets show a breakdown of the major impacts for each alternative, and the cost estimates for each scenario.

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RODGERS CONSULTING, INC.
 9260 GAITHER ROAD
 GAITHERSBURG, MD 20877
 (301) 948-4700 FREDERICK (301) 253-6609

SANITARY SEWER OUTFALL
 CIP 84.46
 ALTERNATIVE ANALYSIS

Impact	CIP 84.46	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Linear Feet - Force Main	0	1300	1350	0	2400	0
Pump Station	NO	YES	YES	NO	YES	NO
270 Tunnel	NO	2	2	NO	NO	NO
Easement Properties	1	4	3	1	1	1
Trench Widths (ft +/-)	40	40	40	UP TO 140	40	240+
Deep Sewer	NO	NO	NO	YES - 35+ FT	NO	YES - 60+ FT
Permitability with MDE/USCOE	HIGH	LOW	MEDIUM	VERY LOW	HIGH	HIGH
Stream Crossings	1	3	3	6	1	1
100-Year Floodplain	NO	YES	YES	YES	NO	NO
Wetlands Impact	1	4	3	3	0	0
Wetlands Impact (sf)	6400	33600	5800	22500	0	0
Stream Valley	YES	YES	NO	YES	NO	NO
Forest	YES	NO	YES	YES	YES	YES
Parklands	YES	YES	YES	YES	YES	YES
Linear Feet - Gravity	4150	4200	2800	3400	2600	4500
Cost*	\$903,438	\$3,823,875	\$3,415,163	\$1,451,250	\$3,175,000	\$3,108,125

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CONCEPTUAL COST ESTIMATE

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SHEET 2 OF 7

BY: TJS DATE: 3-16-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN
 CHKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	Little Seneca Creek Alignment				
	24-Inch Sewer Main	LF	4150	\$145.00	\$601,750.00
	Standard Manholes	EA	20	\$4,000.00	\$80,000.00
	Extra Depth Manholes	EA	2	\$8,000.00	\$16,000.00
	Wetland Mitigation	AC	0.5	\$50,000.00	\$25,000.00
	Subtotal				\$722,750.00
	Contingencies (25%)				\$180,687.50
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$903,437.50

NOTES

1. THIS COST ESTIMATE WAS COMPILED BY AN ENGINEER, NOT A COST ESTIMATOR OR CONSTRUCTION CONTRACTOR. THE ACCURACY OF ENGINEERING ESTIMATES CANNOT BE GUARANTEED.
2. THIS COST ESTIMATE WAS PREPARED FOR A COMPARISON ANALYSIS AND IS BASED ON OVERALL COSTS FOR SIMILAR PROJECTS.
3. NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

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RODGERS CONSULTING, INC.
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CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 3 OF 7

BY: TJS DATE: 3-16-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

CHKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 1

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	Little Seneca Creek Eastern Trib				
	Pump Station*				\$1,955,000.00
	12 to 15-Inch Force Main**	LF	1300	\$65.00	\$84,500.00
	24-Inch Sewer Main	LF	4200	\$145.00	\$609,000.00
	Standard Manholes	EA	21	\$4,000.00	\$84,000.00
	Wetland Mitigation	AC	2	\$50,000.00	\$100,000.00
	Subtotal				\$2,832,500.00
	Contingencies (25%)				\$708,125.00
	Obtain Right-of-Way (10%)				\$283,250.00
	TOTAL				\$3,823,875.00

NOTES

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3. NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

* Cost estimated as 15% greater than the cost of the 5 MGD wastewater pump station at King Farm (approx \$1,700,000).

** Estimate may change dependent on final sizing.

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CONCEPTUAL COST ESTIMATE

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 SHEET 4 OF 7

BY: TJS DATE: 3-16-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

CHKD: DATE: JOB NO. : 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 2

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	East of I-270 Alignment				
	Pump Station*				\$1,955,000.00
	12 to 15-Inch Force Main**	LF	1350	\$65.00	\$87,750.00
	24-Inch Sewer Main	LF	2800	\$145.00	\$406,000.00
	Standard Manholes	EA	14	\$4,000.00	\$56,000.00
	Wetland Mitigation	AC	0.5	\$50,000.00	\$25,000.00
	Subtotal				\$2,529,750.00
	Contingencies (25%)				\$632,437.50
	Obtain Right-of-Way (10%)				\$252,975.00
	TOTAL				\$3,415,162.50

NOTES

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3. NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

* Cost estimated as 15% greater than the cost of the 5 MGD wastewater pump station at King Farm (approx \$1,700,000).

** Estimate may change dependent on final sizing.

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CONCEPTUAL COST ESTIMATE

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 SHEET 5 OF 7

BY: TJS DATE: 3-16-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

CHKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 3

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	West of I-270, East of Tributary Alignment				
	24-Inch Sewer Main	LF	3400	\$145.00	\$493,000.00
	Standard Manholes	EA	7	\$4,000.00	\$28,000.00
	Extra Depth Manholes	EA	10	\$8,000.00	\$80,000.00
	Wetland Mitigation	AC	1.5	\$50,000.00	\$75,000.00
	Forest Mitigation	AC	7	\$15,000.00	\$105,000.00
	Deep Excavation Cost*	LF	1900	\$200.00	\$380,000.00
	Subtotal				\$1,161,000.00
	Contingencies (25%)				\$290,250.00
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$1,451,250.00

- NOTES**
1. THIS COST ESTIMATE WAS COMPILED BY AN ENGINEER, NOT A COST ESTIMATOR OR CONSTRUCTION CONTRACTOR. THE ACCURACY OF ENGINEERING ESTIMATES CANNOT BE GUARANTEED.
 2. THIS COST ESTIMATE WAS PREPARED FOR A COMPARISON ANALYSIS AND IS BASED ON OVERALL COSTS FOR SIMILAR PROJECTS.
 3. NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

* Extra deep excavation cost estimated. Deep excavation is not permitted by WSSC and is likely not a viable solution. If this alternative proceeds, the costs would require evaluation by a contractor.

CONCEPTUAL COST ESTIMATE

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 SHEET 6 OF 7

BY: TJS DATE: 3-16-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

CHKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 4

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	Lake Ridge Drive Alignment				
	Pump Station*				\$1,955,000.00
	12 to 15-Inch Force Main**	LF	2400	\$65.00	\$156,000.00
	24-Inch Sewer Main	LF	2600	\$145.00	\$377,000.00
	Standard Manholes	EA	13	\$4,000.00	\$52,000.00
	Subtotal				\$2,540,000.00
	Contingencies (25%)				\$635,000.00
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$3,175,000.00

NOTES

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3. NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

* Cost estimated as 15% greater than the cost of the 5 MGD wastewater pump station at King Farm (approx \$1,700,000).

** Estimate may change dependent on final sizing.

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CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 7 OF 7

BY: TJS DATE: 3-16-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN
 CHKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 5

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	520 Contour Alignment				
	24-Inch Sewer Main	LF	4500	\$145.00	\$652,500.00
	Extra Depth Manholes	EA	23	\$8,000.00	\$184,000.00
	Deep Excavation Cost	LF	4500	\$300.00	\$1,350,000.00
	Forest Mitigation	AC	20	\$15,000.00	\$300,000.00
	Subtotal				\$2,486,500.00
	Contingencies (25%)				\$621,625.00
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$3,108,125.00

- NOTES**
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 2. THIS COST ESTIMATE WAS PREPARED FOR A COMPARISON ANALYSIS AND IS BASED ON OVERALL COSTS FOR SIMILAR PROJECTS.
 3. NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

Extra deep excavation cost estimated. Deep excavation is not permitted by WSSC and is likely not a viable solution. If this alternative proceeds, the costs would require evaluation by a contractor.

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WASHINGTON SUBURBAN SANITARY COMMISSION

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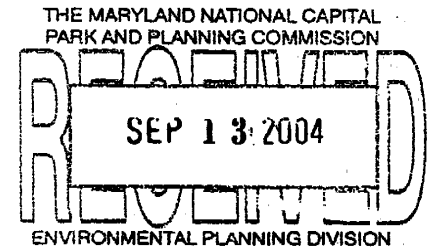
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September 3, 2004

Mr. Mark Pfeferle
Planning Coordinator
Environmental Planning
Montgomery County Department of Planning
Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910



RE: WSSC Staff Response to M-NCP&PC on Alternatives to Proposed
Black Hills Park Trunk Sewer

Dear Mr. Pfeferle:

This letter is in response to your correspondence dated June 28, 2004, answering WSSC and Rodgers Consulting, Inc. (RCI) staff comments from April 24, on alternate alignments offered by M-NCP&PC staff to the proposed gravity sewer alignment. The proposed gravity sewer alignment traverses Black Hill Regional Park and will serve the Cabin Branch development and, conceptually, stage four properties in western Clarksburg. Rodgers Consulting, Inc. (RCI) and WSSC staff reviewed your letter outlining your concerns and questions about the alternative analysis for wastewater conveyance from the Cabin Branch development project.

WSSC has, with coordination and input from other agencies including M-NCPPC, conducted a thorough investigation of numerous planning options for the Black Hill Sewer outfall. The original planned outfall was part of the Clarksburg Master Plan of June 1994. WSSC identified that development on the western side of I-270 in the Clarksburg area would require a connection to the existing 36-inch trunk sewer in Little Seneca Creek. The Montgomery County Council included this preliminary alignment, within the approved WSSC Capital Improvement Program (CIP), under project number 84.46, beginning in Fiscal Year 2002.

The responses to M-NCPPC staff comments are outlined below:

Comment 1

Environmental Planning does not see the need to locate the sewer line (S-84.47) in the stream valley buffer on the Cabin Branch development.

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Response 1

As previously noted, and with all due respect to M-NCP&PC's opposing view, alternative 47A (the gravity sewer through Black Hill Park) is the WSSC-preferred alternative to provide sanitary sewer service to the Cabin Branch development. This has been stated previously in the Facility Plan (*Clarksburg Stage 3 and 4 Area Facility Plan: Public Outreach Draft*), which has been updated to further clarify this point. It will also be reflected as the selected alternative, which will be included in the final draft of the Facility Plan. The main factors for the choice of 47A are outlined below:

- Alternative 47A was placed at the lowest point possible in order to serve the entirety of the Cabin Branch site and areas west of I-270. WSSC staff identified this gravity sewer and the conceptual alignment in its Capital Improvement Program (CIP) document after the adoption of the Clarksburg Master Plan. WSSC staff considers this sewer as the "backbone" of the western Clarksburg sewer system.
- For Alternative 47B to serve the site by gravity, it is necessary that the sewer have an outfall at approximate elevation 486.5 feet. If placed within the roadway (Street W – Elevation 520) the depth would be 33.5 feet, which is beyond the depth allowed by our standards, as indicated in our previous correspondence. If this alternative were constructed, the sewer would require significant safety features for construction and future access, which would add significant costs and major repairs, when the need arises, would require a difficult, expensive and a lengthy process.
- The location of 47A reduces the amount of flow to the proposed wastewater pumping station south of West Old Baltimore Road (CIP project number S-84.60, the Cabin Branch Wastewater Pumping Station). By reducing the flow, the pumping station can be located outside of the Black Hill Regional Park and stream valley, to a site on private property, thus reducing environmental impacts to the Black Hill Regional Park.
- The impacts for alignment 47A will be minimized and mitigated. The WSSC will continue work in cooperation with M-NCPPC, as in previous efforts, to ensure that any impacts to the forested area and the Black Hill Regional Park is minimized.
- The previous cost estimate for 47A was about \$3,400 less than that for 47B. However, the cost for constructing deep sewers was not originally included by RCI in the Facility Plan, as they were not preferred by WSSC as standard design. The extra depth sewer could cost approximately \$200 per linear foot or more, totaling an additional \$750,000 to \$1,000,000 in costs for the overall project. In addition,

Mark Pfeferle, Planner Coordinator
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significant impact to nearby wetlands and woodlands may occur in order to install the extra depth sewer. Excavation for the sewer may require a 60 to 70-foot right-of-way. Again, let me reiterate that our WSSC Sewer Design Guidelines state sewer pipelines over 20 feet deep "could create major problems with both construction and maintenance of the pipeline and should be avoided if possible."

Comment 2

It would be advantageous to indicate the floodplain, stream valley, forest, and parkland impacts in acres.

Response 2

The impacts for floodplain, stream valley, forest, and parklands are shown in acres on the attached table (Sanitary Sewer Outfall – Alternatives Analysis) provided by Rodgers Consulting.

Comment 3

The cost comparisons in the April 27 submission are not consistent, and do not include costs for reforestation.

Response 3

Rodgers staff revised cost comparisons for the five alternatives to ensure they are consistent with M-NCP&PC concern to reforestation costs.

Comment 4

Alternatives 1 and 2 indicate the need to get an easement from Pulte Homes. The stream valley buffer will be conveyed to M-NCP&PC in the near term and therefore an easement from Pulte Homes is not necessary.

Response 4

Construction of Alternatives 1 or 2 would require easements from multiple property owners, including Pulte Homes. The sewer lines would most likely be constructed before stream valley areas were conveyed to M-NCPPC. In the case of the Linthicum East Property, there is no current plan for the property, so the stream valley would not be conveyed for the near future. Easements from SHA would be required within the proposed mitigation areas in the stream valley.

Comment 5

It is unclear why the forest clearing needs to be as large along Lake Ridge Drive as indicated for Alternative 4. It is not clear why a forest clearing, larger than the clearing shown on the CIP forest conservation plan is necessary.

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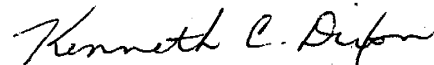
Mark Pfeferle, Planner Coordinator
Maryland-National Capital Park & Planning Commission
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Response 5

Rodgers staff assumed that the forest clearing of 50 feet along Lake Ridge Drive as a preliminary estimate. As no construction within Lake Ridge Drive is assumed, clearing would be required on one side of Lake Ridge Drive. If the line were placed within Lake Ridge Drive, this would incur additional costs not currently included in the cost estimates. The clearing for the CIP line has been determined in coordination with a detailed survey of the area, along with several walkovers and meetings at the site. The 50-foot clearing represents a "worst case" scenario. If the clearing were minimized, it would still have little impact on the high overall cost of Alternative 4, as a pump station would be required for this alignment.

If you have questions or require clarification on any of the preceding comments, please do not hesitate to contact me by telephone at 301-206-8809 or by e-mail at kdixon@wsscwater.com. Again, the WSSC appreciates the opportunity to work cooperatively with M-NCP&PC in this process and look forward to assisting you and your staff as needed. Thank you for your cooperation and patience.

Sincerely,



Kenneth C. Dixon
Planning Unit Coordinator
Planning Group

cc: Nazir Baig, Supervisor, Countywide Planning Division, M-NCP&PC
Mary Dolan, Environmental Planner, Countywide Planning Division,
M-NCP&PC
Nellie Maskal, Community Planning, M-NCP&PC
Alan Soukup, Environmental Planning Specialist, Montgomery County
Department of Environmental Protection
Gary Unterberg, Rodgers Consulting
John Carman, Rodgers Consulting
Charles Loehr, Director, MNCPPC
Jorge Valladares Environmental Planning, MNCPPC
Herbert DeHoff, Construction Supervisor, Parks, MNCPPC

RODGE CONSULTING, INC.
 9260 GAITHER ROAD
 GAITHERSBURG, MD 20877
 (301) 948-4700 FREDERICK (301) 253-6609

SANITARY SEWER OUTFALL
 CIP 84.46
 ALTERNATIVE ANALYSIS

DATE: 3-16-04
 REV: 7-22-04

Impact	CIP 84.46	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Linear Feet - Force Main	0	1300	1350	0	2400	0
Pump Station	NO	YES	YES	NO	YES	NO
270 Tunnel	NO	2	2	NO	NO	NO
Easement Properties	1	4	3	1	1	1
Trench Widths (ft +/-)	40	40	40	UP TO 140	40	240+
Deep Sewer	NO	NO	NO	YES - 35+ FT	NO	YES - 60+ FT
Permitability with MDE/USCOE	HIGH	LOW	MEDIUM	VERY LOW	HIGH	HIGH
Stream Crossings	1	3	3	6	1	1
100-Year Floodplain	0	4.37	0.903	1.74	0	0
Wetlands Impact	1	4	3	3	0	0
Wetlands Impact (sf)	6400	33600	5800	22500	0	0
Stream Valley Impact (ac)	4.72	4.56	1.00	2.96	0	0
Forest Impact (ac)	4.72	0	2.72	3.61	2.94	4.23
Parklands Impact (ac)	4.76	0.17	0.23	3.96	4.71	5.15
Linear Feet - Gravity	4150	4200	2800	3400	2600	4500
Cost*	\$1,081,563	\$3,823,875	\$3,609,038	\$1,456,875	\$3,374,125	\$2,892,500

RODGERS CONSULTING, INC.
 9260 GAITHER ROAD
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CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 2 OF 7

TJS DATE: 3-16-04 REV: 7-22-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN
 KD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1

TEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	Little Seneca Creek Alignment				
	24-Inch Sewer Main	LF	4150	\$145.00	\$601,750.00
	Standard Manholes	EA	20	\$4,000.00	\$80,000.00
	Extra Depth Manholes	EA	2	\$8,000.00	\$16,000.00
	Wetland Mitigation	AC	0.5	\$50,000.00	\$25,000.00
	Forest Mitigation	AC	9.5	\$15,000.00	\$142,500.00
	Subtotal				\$865,250.00
	Contingencies (25%)				\$216,312.50
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$1,081,562.50

NOTES
 THIS COST ESTIMATE WAS COMPILED BY AN ENGINEER, NOT A COST ESTIMATOR OR CONSTRUCTION CONTRACTOR. THE ACCURACY OF ENGINEERING ESTIMATES CANNOT BE GUARANTEED.
 THIS COST ESTIMATE WAS PREPARED FOR A COMPARISON ANALYSIS AND IS BASED ON OVERALL COSTS FOR SIMILAR PROJECTS.
 NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

RODGERS CONSULTING, INC.
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 GAITHERSBURG, MD 20877
 (301) 948-4700 FREDERICK (301) 253-6609

CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 3 OF 7

TJS DATE: 3-16-04 REV: 7-22-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN
 IKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 1

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	Little Seneca Creek Eastern Trib				
	Pump Station*				\$1,955,000.00
	12 to 15-Inch Force Main**	LF	1300	\$65.00	\$84,500.00
	24-Inch Sewer Main	LF	4200	\$145.00	\$609,000.00
	Standard Manholes	EA	21	\$4,000.00	\$84,000.00
	Wetland Mitigation	AC	2	\$50,000.00	\$100,000.00
	Forest Mitigation	AC		\$15,000.00	
	Subtotal				\$2,832,500.00
	Contingencies (25%)				\$708,125.00
	Obtain Right-of-Way (10%)				\$283,250.00
	TOTAL				\$3,823,875.00

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Cost estimated as 15% greater than the cost of the 5 MGD wastewater pump station at King Farm (approx \$1,700,000).
 Estimate may change dependent on final sizing.

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RODGERS CONSULTING, INC.
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 GAITHERSBURG, MD 20877
 (301) 948-4700 FREDERICK (301) 253-6609

CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 4 OF 7

DATE: 3-16-04 REV: 7-22-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 2

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	East of I-270 Alignment				
	Pump Station*				\$1,955,000.00
	12 to 15-Inch Force Main**	LF	1350	\$65.00	\$87,750.00
	24-Inch Sewer Main	LF	2800	\$145.00	\$406,000.00
	Standard Manholes	EA	14	\$4,000.00	\$56,000.00
	Wetland Mitigation	AC	0.5	\$50,000.00	\$25,000.00
	Forest Mitigation	AC	5.5	\$15,000.00	\$82,500.00
	Subtotal				\$2,612,250.00
	Contingencies (25%)				\$653,062.50
	Obtain Right-of-Way (10%)				\$261,225.00
	TOTAL				\$3,609,037.50

NOTES

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NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

Cost estimated as 15% greater than the cost of the 5 MGD wastewater pump station at King Farm (approx \$1,700,000). Estimate may change dependent on final sizing.

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 GAITHERSBURG, MD 20877
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CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 5 OF 7

TJS DATE: 3-16-04 REV: 7-22-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN
 KD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 3

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	West of I-270, East of Tributary Alignment				
	24-Inch Sewer Main	LF	3400	\$145.00	\$493,000.00
	Standard Manholes	EA	7	\$4,000.00	\$28,000.00
	Extra Depth Manholes	EA	10	\$8,000.00	\$80,000.00
	Wetland Mitigation	AC	1.5	\$50,000.00	\$75,000.00
	Forest Mitigation	AC	7.3	\$15,000.00	\$109,500.00
	Deep Excavation Cost	LF	1900	\$200.00	\$380,000.00
	Subtotal				\$1,165,500.00
	Contingencies (25%)				\$291,375.00
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$1,456,875.00

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Extra deep excavation cost estimated. Deep excavation is not permitted by WSSC and isy not a viable solution. If this alternative proceeds, the costs would require evaluation by a contractor.

RODGERS CONSULTING, INC.
 9260 GAITHER ROAD
 GAITHERSBURG, MD 20877
 (301) 948-4700 FREDERICK (301) 253-6609

CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 6 OF 7

TJS DATE: 3-16-04 REV: 7-22-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

IKD: DATE: JOB NO.: 782A

S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 4

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	Lake Ridge Drive Alignment				
	Pump Station*				\$1,955,000.00
	12 to 15-Inch Force Main**	LF	2400	\$65.00	\$156,000.00
	24-Inch Sewer Main	LF	2600	\$145.00	\$377,000.00
	Standard Manholes	EA	13	\$4,000.00	\$52,000.00
	Forest Mitigation	AC	5.9	\$15,000.00	\$88,500.00
	Subtotal				\$2,628,500.00
	Contingencies (25%)				\$657,125.00
	Obtain Right-of-Way (10%)				\$262,850.00
	TOTAL				\$3,374,125.00

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 Estimate may change dependent on final sizing.

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 GAITHERSBURG, MD 20877
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CONCEPTUAL COST ESTIMATE

DRAFT
 SHEET 7 OF 7

TJS DATE: 3-16-04 REV: 7-22-04 PROJECT: CLARKSBURG STAGES 3 & 4 AREA FACILITY PLAN

HKD: DATE: JOB NO.: 782A

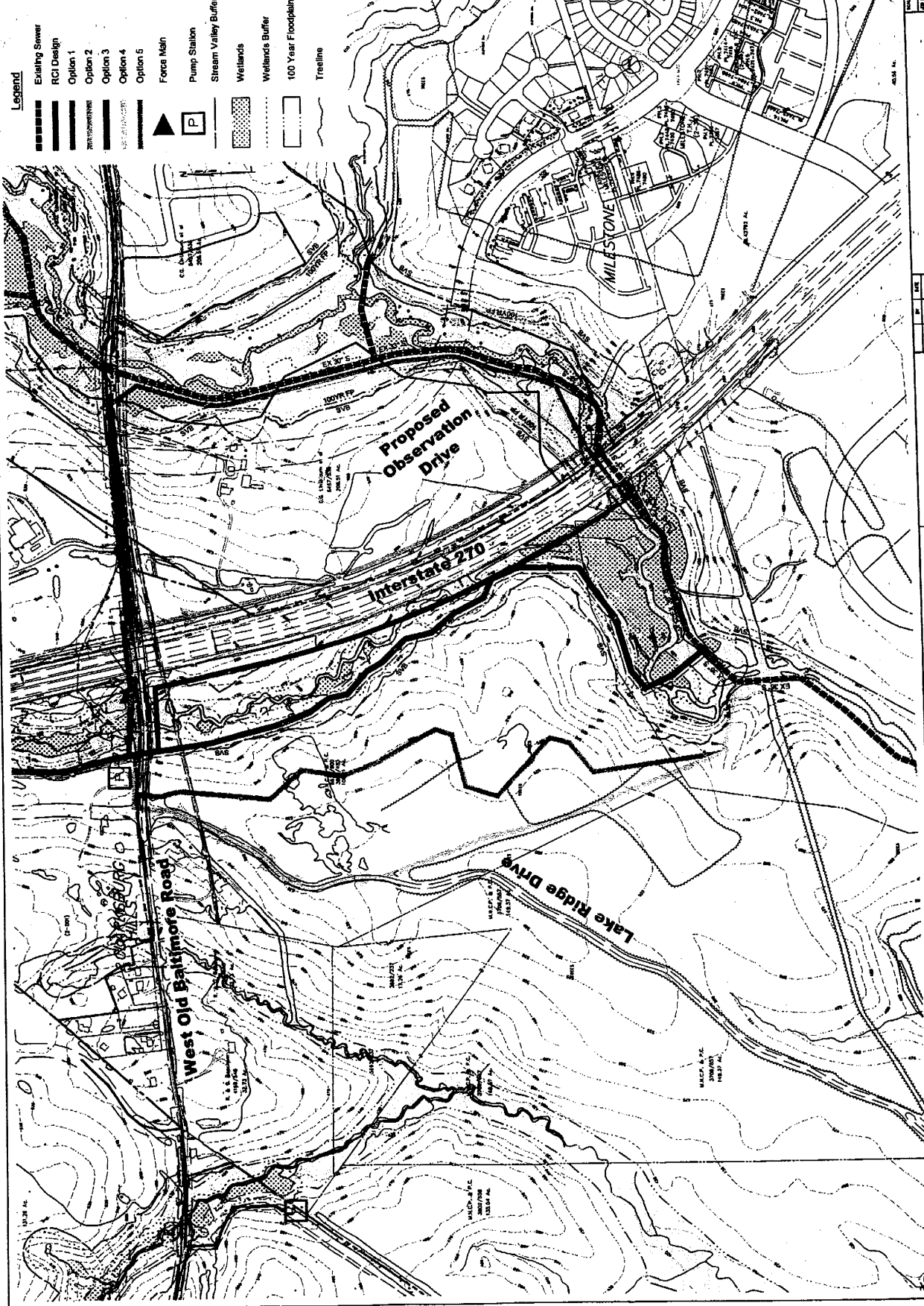
S-84.46 - CLARKSBURG TRIANGLE OUTFALL SEWER PART 1 - ALTERNATIVE 5

ITEM NO.	ITEM	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	520 Contour Alignment				
	24-Inch Sewer Main	LF	4500	\$145.00	\$652,500.00
	Extra Depth Manholes	EA	23	\$8,000.00	\$184,000.00
	Deep Excavation Cost	LF	4500	\$300.00	\$1,350,000.00
	Forest Mitigation	AC	8.5	\$15,000.00	\$127,500.00
	Subtotal				\$2,314,000.00
	Contingencies (25%)				\$578,500.00
	Obtain Right-of-Way (10%)				N/A
	TOTAL				\$2,892,500.00

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 NO COST FOR RELOCATION OF EXISTING UTILITIES WAS INCLUDED.

Extra deep excavation cost estimated. Deep excavation is not permitted by WSSC and is not a viable solution. If this alternative proceeds, the costs would require evaluation by a contractor.

PRELIMINARY NOT FOR CONSTRUCTION



- Legend**
- Existing Sewer
 - RCI Design
 - Option 1
 - Option 2
 - Option 3
 - Option 4
 - Option 5
 - Force Main
 - Pump Station
 - Stream Valley Buffer
 - Wetlands
 - Wetlands Buffer
 - 100 Year Floodplain
 - Tree Line

<p>CABIN BRANCH Consulting Engineers 10000 Old Baltimore Road Baltimore, MD 21244 Telephone: (410) 524-1000 Fax: (410) 524-1001 Website: www.cabinbranch.com</p>		<p>DATE: 10/15/04 BY: [Signature] CHECKED: [Signature] APPROVED: [Signature]</p>
<p>SEWER OUTFALL OPTIONS</p>		<p>DATE: [] BY: [] CHECKED: [] APPROVED: []</p>
<p>PROJECT NO. [] SHEET NO. []</p>		<p>DATE: [] BY: [] CHECKED: [] APPROVED: []</p>

D-24



WASHINGTON SUBURBAN SANITARY COMMISSION

14501 Sweitzer Lane • Laurel, Maryland 20707-5902

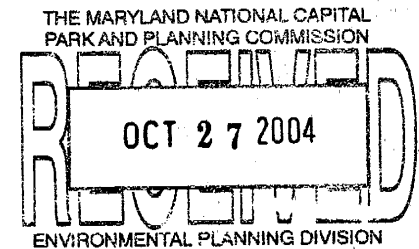
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October 25, 2004

Mr. Mark Pfeferle
Planning Coordinator
Environmental Planning
Montgomery County Department of Planning
Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910



RE: WSSC Response Number 3 -- Alignment and Alternatives for Proposed
Black Hills Park Trunk Sewer

Dear Mr. Pfeferle:

This letter is in response to your electronic mail (e-mail) correspondence dated October 7, 2004, concerning continuing dialogue between your staff, WSSC staff, and the Cabin Branch development consultant, Rodgers Consulting, Inc., on the proposed gravity sewer alignment traversing Black Hill Regional Park in western Clarksburg. Rodgers Consulting, Inc. (RCI) and WSSC staff reviewed your letter outlining your concerns and questions about this alignment and alternatives for wastewater conveyance from the Cabin Branch development project. We have listed the responses to your questions as outlined below:

Comment 1

Has the public outreach document for Clarksburg Stage 3 and 4 Area Facility Plan been updated and finalized? The last version of the document that we have is the April 2003 revision. Can we get the most recent copy? If it has not been finalized, when will it be finalized?

Response 1

The Facility Plan has not been updated since the April 2003 revision. The selected alternatives for the Stage 3 and 4 Area will be chosen in the near future and a final version of the Facility Plan should be available in early November. The Final Facility Plan will include all of the recent documentation and cost estimates.

Comment 2

The facility plan that we have shows a \$3,000 price difference between options 47A and 47B. Your most recent response indicates that Rodgers did not include extra depth sewers, which could be as long as 5,000 linear feet (\$1M / \$200 per linear foot) or \$1 million more than shown. The Conceptual Cost Estimate in the April 2003 document indicates extra depth manholes for both Alternatives 47A and 47B;

Mark Pfeferle, Planner Coordinator
Maryland-National Capital Park & Planning Commission
WSSC Staff Response Number 3 -- Alignment and Alternatives to Proposed Black Hills Park
Trunk Sewer
October 25, 2004
Page 2

does this also mean that extra depth sewers are needed for 47A? (This may be just a misunderstanding on my part on when and where extra depth manholes are used).

Response 2

No, the extra depth sewer manholes refer to the deep manholes between 16 and 20 feet of depth that were assumed might be necessary in certain spots along both sewer alternatives. The cost for extra depth sewer line is separate, and would only be incurred by necessity for alternative 47B, as the actual depth of the pipeline would be greater than 20 feet.

Comment 3

When estimating the depth of the sewer for option 47B are you using grading and street elevations provided by Rodgers or using new street profiles and elevations provided by the new engineering firm working for the developer? The new engineering firm has indicated significant grading changes throughout the site and less cutting and filling occurring and we are wondering if this has an impact on the sewer depths.

Response 3

The stream valley and West Old Baltimore Road grades have not changed. Although the new engineering firm has made some changes to the grading along the streets within the site, the ultimate point at which option 47B leaves the site remains at existing grade 30+ feet above the stream valley, and sewage cannot gravity feed to this point without extra deep sewers. This was confirmed at an October 13, 2004 meeting with Rodgers Consulting, Inc. (RCI), Loiederman Soltesz Associates, Inc. (LSA), and WSSC.

Comment 4

Your recent response indicates just under \$2M for the construction of pumping station (based on the 5MGD facility at King Farm plus 15%). How large of a pumping station would be necessary to pump the sewer material instead of using gravity and does the cost estimate provided include all the contingencies and redundancies necessary? Is a 5-MGD facility sufficiently sized and appropriate for this development?

Response 4

A 9-MGD pumping station would be necessary to provide service for the area. The 15% was an estimate to increase the size from 5 MGD to 9 MGD. The actual costs of contingencies and redundancies would have to be further analyzed.

Comment 5

Does going from pump station to pump station provide any technical problems? Has WSSC done this anywhere else in the County or PG County?

Response 5

WSSC has employed pump station in series in a few applications in the WSSD (for example the Freedom Hill Wastewater Pumping Station and Force Main send wastewater to a nearby gravity line, which transmits flows to the Wexford Wastewater Pumping Station and Force Main in Germantown). However, using such a technique -- specifically with the proposed stations being in close proximity -- presents potential impacts locally from increased odor mitigation and increased corrosion in the downstream gravity collection system. In addition, overflows could occur at the stations in the event of a major power outage due to a significant weather event, such as was experienced at several WSSC wastewater pumping stations during Hurricane Isabel last Fall (2003). When feasible, WSSC provides redundant power sources (either by an on-site generator or via dual power feed) to its wastewater pumping stations in order to prevent or mitigate potential overflows. However, WSSC staff and RCI agree that the existing gravity sewer alternative through Black Hill Park is the most efficient in terms of cost, reliability, operation, and maintenance.

Comment 6

What would be the approximate/estimated annual O&M cost for operating a pump station at this location?

Response 6

WSSC Operation and maintenance costs from fiscal year 2000 to fiscal year 2004 averaged approximately \$121,000/FY for a wastewater pumping station nearby (in this case, the Little Seneca Creek WWPS, 4.4 mgd capacity). The total combined direct and overhead costs include WSSC manpower, electricity, supplies, and materials required in the operation and upkeep of this existing facility.

Comment 7

Does WSSC have policies on the width of the workspace necessary when dealing when constructing sewer lines through steep slopes and areas with shallow soil to bedrock? If so what is the policy on workspaces? Can we assume a workspace/clearing of 80 feet in these steep places? The most recent response assumes a clearing of 50 feet for the alternative along Lake Ridge Drive, which is less than shown for the CIP route. I am curious as to why the forest clearing area/work space area is greater for the Lake Ridge alternative than for the stream valley route, which is on steep slopes?

Response 7

The width necessary for construction would depend on the situation and the depth of the actual pipe. The clearing for the CIP line been determined in coordination with a detailed survey of the area, along with several walkovers and meetings at the site, and has been minimized in accordance with the surveyed information.

Mark Pfeferrle, Planner Coordinator
Maryland-National Capital Park & Planning Commission
WSSC Staff Response Number 3 -- Alignment and Alternatives to Proposed Black Hills Park
Trunk Sewer
October 25, 2004
Page 4

Comment 8

Does the cost estimate for the CIP route include costs for cutting/blasting through the rock to get to the preferred depth? Have studies been done to determine if the rock material is consolidated or unconsolidated and whether or not blasting is necessary.

Response 8

Costs for rock are not included in any of the scenarios. Typically any adjustments for rock are done at a later point in the process before construction. The installation of the sewer line needs to meet WSSC standards in accordance with the existing soil conditions at the time of construction.

Comment 9

WSSC Design Guidelines, Page C-5, state that, under table 18, 45-foot right-of-way and 20-foot width construction strips are required minimums for 15 to 24-inch diameter sewers. Does this minimum have any flexibility?

Response 9

In a discussion with a construction estimator in our Technical Services Group, he stated that at minimum, a 50-foot total width could be employed but the caveat being that the sewer installed would be at normal depth (8 to 10 feet). If the sewer is deeper in the ground, a wider area for a right-of-way and the construction strip will be required for access.

If you have questions or require clarification on any of the preceding comments, please do not hesitate to contact me by telephone at 301-206-8809 or by e-mail at kdixon@wsscwater.com. Again, the WSSC appreciates the opportunity to work cooperatively with M-NCP&PC in this process and look forward to assisting you and your staff as needed. Thank you for your cooperation and patience.

Sincerely,



Kenneth C. Dixon
Planning Unit Coordinator
Planning Group

Mark Pfeferrle, Planner Coordinator
Maryland-National Capital Park & Planning Commission
WSSC Staff Response Number 3 -- Alignment and Alternatives to Proposed Black Hills Park
Trunk Sewer
October 25, 2004
Page 5

cc: Nazir Baig, Supervisor, Countywide Planning Division, M-NCP&PC
Mary Dolan, Environmental Planner, Countywide Planning Division, M-NCP&PC
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