

May 20, 2008

MEMORANDUM

TO: Katherine Nelson, Countywide Planning Division

FROM: Andy Frank, Park Development Division (PDD)

RAF

SUBJECT: WSSC Bi-County Water Tunnel Project
Coordination of Work on M-NCPPC Property

Recommendation: Approval subject to issuance of a Park Permit for construction. This permit shall include:

- limits of disturbance and tree protection measures
- site restoration, long-term site access, and reforestation
- requirements for future stream restoration
- conditions related to WSSC obtaining appropriate permits from other agencies

PDD staff has received design plans provided by WSSC for the above-referenced project and reviewed them in regard to impacts to parkland. We have also met with WSSC staff and their design team in the field to examine ways to minimize impacts of construction and restore the sites afterwards. The impacted parks includes approximately 1.2 acres within Tilden Woods Stream Valley Park (Park Facility Code (PFC) #P63)) and 0.5 acres within Rock Creek Stream Valley Unit #2 (PFC #P46). All work within M-NCPPC property will be subject to a Technical Review of the detailed design and issuance of a Park Permit for construction.

The Stoneybrook Drive Shaft (S-4) site is located within a grassed area at the corner of Beach Drive and Stoneybrook Drive in the vicinity of some existing WSSC infrastructure. Primary access to the work site will be from Stoneybrook with only limited access to Beach Drive, with appropriate traffic warning signage. There are a few existing trees that will be impacted by the construction, which will be compensated for as part of the site restoration following construction. In general, the Parks Department does not have any objections to the proposed use of this site for this project.

The Tuckerman Lane Shaft (S-1) site is located within the predominantly forested floodplain and Stream Valley Buffer for Old Farm Creek along Tuckerman Lane just east of I-270. The primary access (heavy equipment) route will be from Tuckerman Lane via a temporary bridge across the creek, and the secondary access (light equipment) will be via the existing gravel road from Old Club Road. This arrangement was proposed

primarily to minimize impacts on the adjacent residents north of the site, and the bridge location was determined in the field based on discussion with WSSC and Parks personnel.

The Tuckerman site is in an environmentally sensitive area, but was selected by WSSC due to locations of existing infrastructure and greater potential community impacts associated with alternative sites. Therefore, Parks Department staff has been working with WSSC on ways to minimize the impacts of construction and ensure appropriate restoration. We have held multiple productive field meetings with WSSC, and they have been receptive to our efforts to limit impacts on the natural resources surrounding the site. We will continue to work with WSSC on issues related to the limits of disturbance, tree protection measures, site restoration, and reforestation through the Technical Review and Park Permit process. The Parks Department has also requested additional information from WSSC related to any potential blasting that might be required to construct the tunnel shafts due to the depth and geology of each area. The Parks Department will include conditions of the Park Permit requiring WSSC to comply with all federal, state, and local requirements for blasting and provide appropriate notifications and safeguards for adjacent infrastructure and properties.

WSSC has also agreed to undertake a stream restoration project along Old Farm Creek that will improve conditions within this degraded stream reach, which will be designed and constructed under a separate Technical Review and Park Permit process. Last week, Parks staff conducted a fieldwalk with WSSC staff and their design team to identify appropriate limits for the stream restoration based on access and stream conditions. There was general agreement at the meeting to conduct this restoration along approximately 1,800 linear feet of Old Farm Creek upstream of the I-270 culvert, including the confluence with the unmanned tributary from Tuckerman Lane. Parks staff will continue to work with WSSC to define this project and develop a concept design.

Overall, the Parks Department recognizes the need for WSSC to access these particular park sites to complete this important public project. We feel that WSSC has made efforts to limit impacts to parkland, and has been cooperative in addressing our input on reducing impacts and restoring the sites following construction. We expect to address all outstanding design issues with WSSC related to our Technical Review process shortly following Mandatory Review process.



MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

May 22, 2008

Gregory Osband, RLA
12750 Twinbrook Parkway
Rockville, MD 20852-1700

Re: Forest Conservation Plan
Project Name: Bi-County Water Tunnel
Plan Number: MR08003-WSSC-1

Dear Mr. Osband:

Environmental Planning recommends the Montgomery County Planning Board to approve the forest conservation plan submitted to M-NCPPC on May 22, 2008 for the above mentioned site plan with the following conditions:

1. Provide a combined Forest Conservation Worksheet which reflects the total net tract area, existing forest and forest cleared from all of the shaft sites.
2. Revise LOD and/or provide supplemental tree protection measures to appropriately preserve trees #1, 2, 4 & 7 (sheet FC-02).
3. Include a detail for tree armoring.
4. Depict property lines with a heavier line weight or clarify property boundaries by other graphic means.
5. Modify hatching patterns to correctly depict areas of forest clearing.
6. Remove reference to forest conservation exemption (sheet FC-02, note 1).
7. Remove reference to snow fence under tree protection notes (sheet FC-02 item5.ii.)

Sincerely,

Marco Fuster, Senior Planner
Environmental Planning
Countywide Planning Division
M-NCPPC

Cc: File

MR08003-WSSC-1

(4)

Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel Project
WSSC Contract No. BL9972A94
Updated 4-16-08

This summary has been prepared to facilitate the review of the WSSC Mandatory Referral Submittal to the Maryland-National Capital Park and Planning Commission, Montgomery County, for the Bi-County Tunnel project. The numbered items below correspond with the paragraph numbers in Section III, Submission Requirements contained in the *Uniform Standards for Mandatory Referral Review*, March 25, 2004 update. Throughout this summary, reference is made to the contract drawings. These referenced are designed to highlight specific drawings that address certain topics of interest.

1. Written Narrative

Project Need

The Washington Suburban Sanitary Commission is responsible to provide safe drinking water to nearly 1.8 million residents of Montgomery and Prince George's County. As part of that responsibility, WSSC is constantly evaluating system need and planning for future growth. One of the projects needed to meet these growing demands is the Bi-County Tunnel project. The bi-county tunnel will be a new 84" diameter water main connecting two existing 96" water mains in Montgomery County. The new water main is necessary to meet increased demands in Prince George's County and will address projected low pressure problems in some portions of Montgomery County during peak demand periods. According to WSSC projections, the first sign that this project is necessary will be low water pressure at higher elevations in the Wheaton area. Under peak demand conditions, this condition could surface between now and 2011. The bi-county tunnel project will address these concerns by providing enough conveyance capacity to meet those projected demands without impacting system pressures.

The project is funded through the WSSC CIP as project W-127.01. The estimated construction cost for the project is \$130 million.

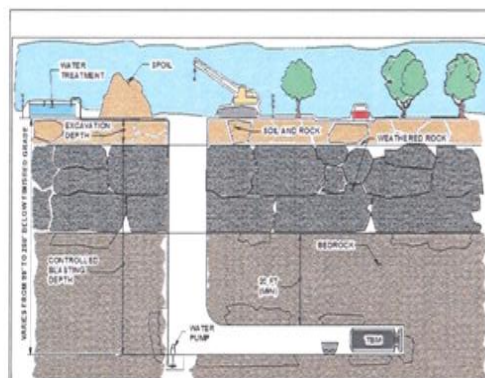
Project Location

The bi-county will connect an existing 96" diameter water main within a portion of Cabin John Regional Park near where Tuckerman Lane crosses beneath I-270 in Rockville with another 96" main located within Rock Creek Park at the intersection of Beach and Stoneybrook Drives in Kensington. The alignment will follow I-270 and the outer loop of the beltway as shown in the attached satellite map.

Tunnel Construction

Tunnel construction involves horizontally drilling 10 to 12 foot diameter hole from one point to another in solid bedrock between 90 and 200 feet below ground. A steel liner will be installed inside the bored tunnel and the annular space between the steel liner and the tunnel wall will be filled with grout. The entire project will take four years to construct.

In order to construct the tunnel, three tunnel shafts are needed. A tunnel shaft is a 20 to 30 foot diameter hole constructed through excavation and controlled blasting to the tunnel depth. A tunnel boring machine (TBM) is lowered into



Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

the shaft and a hole is bored from one shaft to another. Three tunnel shafts are proposed for the bi-county tunnel project. The primary working shaft is shaft S3. This shaft is located on the property of the State Highway Administration (SHA) just north of the ramp from the outer loop of the beltway to Connecticut Avenue. The property is all previously disturbed and provides easy access for truck traffic off of the Connecticut Avenue Ramp. This site is isolated from residents by the beltway and unimproved sections of Rock Creek Park. Since all tunnel spoil materials (muck) will be removed from this location and nearly all tunnel liner will be installed, its proximity to the interstate makes it an ideal location for a primary working shaft.

The other two shafts are located on park property at each end of the alignment. These shafts are necessary to both remove the TBM and to provide a means of connecting the new tunnel with the existing water mains. When completed, the installations will include concrete valves and vaults with slabs located at just above grade as well as some corrosion monitoring devices. WSSC has worked with the parks to address concerns and minimize impacts associated with work on park property. The table below summarizes the activity at each shaft location.

Tunnel Shaft Summary Table			
	Tuckerman Shaft (S1)	Connecticut Ave. Shaft (S3)	Stoneybrook Shaft (S4)
Purpose / major activities	<ul style="list-style-type: none"> • Remove Tunnel Boring Machine (TBM) • Ventilation • Liner Installation • Grouting • Cement Mortar Lining (CML) • Connection to Ex. 96" Main 	<ul style="list-style-type: none"> • Primary working shaft • Construction Trailers • Install TBM • Muck Removal • Liner Installation • Grouting • CML Installation 	<ul style="list-style-type: none"> • Remove TBM • Grouting • May include liner installation • Ventilation • CML Installation • Connect to Ex. 96" Main
Diameter	25 feet	30 feet	20 feet
Depth	140 feet	155 feet	115 feet
Disturbed Area	1.68 Ac (73,137 s.f.)	6 Ac (261,393 s.f.)	0.76 Ac (33,034 s.f.)
Property Ownership	M-NCPPC, Cabin John Regional Park	MD SHA	M-NCPPC, Rock Creek Park. Temporary Easement from the Mormon Temple
Work Time	Periodic throughout contract	Constant throughout 4 year construction contract	Periodic throughout contract
Shaft Construction	Controlled Blasting	Controlled Blasting	Controlled Blasting
Contract Drawing Showing Final Restoration	SR-01	SR-02, SR-03, and SR-04	SR-04



Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

Park Impacts at Shafts S1 and S4

We have met with the Parks Department in the field at Shafts S1 and S4 on several occasions. The disturbance and restoration at Shaft S4 (Stoneybrook) has not been controversial. Parks only concern has been that Beach Drive not be used for construction traffic beyond the area in the immediate vicinity of the shaft. This restriction has been incorporated into the contract documents. The work area at this shaft site is extremely tight. During design we requested a temporary construction strip from the adjacent property owner, the Church of Jesus Christ of Latter-day Saints (LDS Church). The LDS Church has denied us the temporary use of a small corner of their property which is currently devoid of trees. Upon evaluation of the site, we have determined that, although it will take additional construction time, it is possible to construct this portion of the project within very tight limits. The primary community impact of not having the additional land from the LDS Church is that delivery and material removal will result in longer traffic disruptions on Beach and Stoneybrook Drives as it will be necessary to stop traffic in order for truck and other equipment to back into the site.

As requested in meetings with Park personnel, we have shown the existing grass area to be restored with a number of tree plantings (see drawing SR-04). Please note that the reforestation plan in this area has been modified from earlier submittals to reflect the fact that we do not have access to the LDS church property. As a result, we will not be planting trees on the LDS Church property as previously proposed in the forest conservation plan.

At Shaft S1 (Tuckerman Lane), we have reached a consensus on access to the site from Tuckerman Lane using a temporary bridge. The bridge has been laid out to minimize environmental impacts. We have met both in the office and in the field with several members of the park staff to discuss various bridge alternatives and have come to agreement on the alignment shown in the enclosed plans. The creation of this alternate access has been welcomed by the neighborhoods to the north where there was a lot of concern about prospective construction traffic.

In addition to site access, the size of the Shaft 1 construction staging area and how close clearing would come to any houses was another issue raised at our field meetings. We have responded by reducing the footprint of the staging area as much as possible. On April 3, 2008 we met in the field with park staff to go over the proposed limits of disturbance. The enclosed plans reflect the limits laid out in the field. This is also a very tight area with just enough space beyond the bridge to allow for truck turning radius during construction and around the shaft to allow for crane placement and unloading of materials. After construction is complete, the staging area and bridge will be removed and the floodplain restored to its original contours. A 10' gravel access road to the water valve vaults is all that will remain.

Some minor modifications we hope will produce significant benefits: We will regrade the eroding channel near the existing valve vaults where drainage from an existing forested depression and a storm water outfall merge. The stormwater will be redirected into the depression, with a small section of gravel road lowered and built with coarser aggregate to act as a spillway of sorts. Currently the depression is well-drained, being dry in the growing season and seasonally ponded during most of the winter. For smaller storm events the water percolates into the soil. For larger storms, water may flow through and across the gravel road spillway. In major events the stream tops its banks and floods the entire area. Topsoil from the disturbed portions will be stockpiled off-site and then used for final regrading. We will replant with appropriate trees, shrubs and herbaceous material and, with luck, there will be enough additional stormwater trapped to create a seasonal wetland.

Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

We have met with MDE who has asked us to treat much of the area as wetland. The plans are under review by MDE for SWM and S&E. We understand the concept is acceptable and we are just fine-tuning some of the details.

Finally, the Parks Department has verbally indicated that the permit will include a requirement to undertake stream channel stabilization or restoration along this stretch of Old Farm Creek. We first discussed this at the site with Mitra Pedoeem, Joe Markovich, Gene Rose, Carol Bergmann and others. We have also met with Andy Frank at the site to begin to develop some ideas. We understand that this will be a condition of the permit and that actual construction of the stream bank restoration can be done under a separate construction contract. In this way, we will work more closely with the stream restoration contractor. Over the next month, we will continue to work with park staff to determine an appropriate scope for the restoration, either by establishing a mutually agreeable stream restoration limit or an appropriate cost upset limit for the stream bank restoration.

Corrosion Control Features

In order to provide monitoring and corrosion protection, corrosion control and monitoring devices will be installed at each shaft and at three corrosion monitoring points along the alignment. These corrosion monitoring points are shown on the Satellite Map as CM1, CM2, and CM3. At these locations, WSSC intends to drill a 6"-8" diameter hole to the tunnel and install wires from the tunnel to electrical boxes at the surface for the purpose of monitoring corrosion along the tunnel liner. Work at the corrosion monitoring points is minimal and only disturb those areas for a few weeks out of the four year construction contract. This work is shown on contract drawings CC-06, CC-14 and CC-24 of the enclosed plans. Access to each of these stations is directly from the adjacent roadway and does not involve the removal of trees. The precise location of the corrosion control devices will be field located in coordination with park staff during construction.

Community Outreach

Community outreach has been an important part of the bi-county tunnel project. In 2004 and 2005, WSSC conducted an extensive study to determine the preferred alignment and construction method. Construction of this new supply main as a deep tunnel was the alternative preferred by our Citizen's Advisory Committee (CAC) and other citizens groups we met with. One of the primary concerns of the citizen's near the Tuckerman Shaft (S-1) was the means of access to the shaft. We have worked with the Parks Department to come up with a feasible alternative to access the site from Tuckerman Lane while minimizing environmental impacts. This approach again has been well received by our CAC. In addition to the CAC, WSSC has met with Homeowners associations to present this project and discuss the impacts. WSSC will continue this outreach through the final stages of design and during the construction phase.

2. General Location Map

Please see the enclosed Satellite Map for an aerial photograph of the area overlaid with the proposed alignment. Contract drawing G-01 also shows the entire alignment.

Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

3. **Site Plan**

For site plans at the various shaft locations, please see the following:

Tunnel Shaft Site Plan Drawings			
Shaft	General Site Plan	Erosion & Sediment Control	Site Restoration
Tuckerman Lane (S1)	C-04, C-17	ES-01	SR-01
Connecticut Ave. (S3)	C-13, C-14, C-21	ES-02	SR-02, SR-03, SR-04
Stoneybrook (S4)	C-15, C-22	ES-03	SR-04

4. **Utilities and Right-of-Way**

See drawings C-04 through C-15, plus the site plans for each shaft listed above.

5. **Traffic Control Plans**

Traffic and pedestrian patterns will not be impacted by the final installation. During construction, it will be necessary to implement traffic control for access to and from the construction site.

Access to Shaft S-1

Access to the site for construction traffic will be from Tuckerman Lane. A temporary bridge will be installed across old Farm Creek to provide for access to the work/staging area. Secondary access for contractor vehicles (not large trucks) will be from Old Club Court. See contract drawing SA-01 for the traffic control plan.

Access to Shaft S-3

Access to the site for construction traffic will be directly from the outer loop ramp of the beltway to Connecticut Avenue. As requested by the State Highway Administration, a new lane for truck traffic will be added to the ramp for acceleration and deceleration. Personal vehicles will be able to enter the site from an existing driveway off of Kensington Parkway. See contract drawings SA-06 for the temporary signage and access.

Access to Shaft S-4

Access to the site for construction traffic will be from Stoneybrook Drive. Because the LDS Church has denied temporary use of their property, an originally proposed "horse-shoe" area for access and loading has been deleted from the plan. Instead, it will be necessary to provide temporary, flagged closure of Stoneybrook Drive to allow construction vehicles the ability to back into the site and to make wide, two lane turns when leaving the site. Pedestrian traffic will be maintained across the new entrance off of Stoneybrook, though this walkway will also experience periodic closures. A secondary access to the site will be from Beach drive and will not be used by large construction vehicles. The signage for the access plan is shown on contract drawing SA-08 and the access locations are clearly shown on ES-03.

Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

6. Natural Resources Inventory/Forest Stand Delineation (NRI/FSD)

Conditional approval of the NRI/FSD was received on February 6, 2008. A copy of the approval is attached.

7. Special Protection Area Map – Not Applicable.

8. Preliminary Forest Conservation Plan

See Contract Drawings FC-01 through FC-04, submitted February 19, 2008.

9. Topographic Map

Topography is shown on the site plans referenced above.

10. Preliminary Stormwater Management Concept plan

Not applicable. Most of the construction is below ground and will not have a significant post-development impact on stormwater management.

11. Landscape and Lighting Plan – Not Applicable

12. Overall Concept Development Plan – Not Applicable

13. Statement of Compliance with Montgomery County's Noise Ordinance The Commission will require that the contractor comply with the Montgomery County Noise Ordinance. In compliance with the ordinance, the contractor will need to apply for waivers for specific activities such as blasting during construction of the individual shafts. Below is a copy of the applicable paragraph from our specification section 01100.

1.9 NOISE CONTROL

- A. Contractor shall not violate applicable ordinances, regulations, rules and laws pertaining to noise and air pollution in effect. Conduct operations following provisions in effect and as set forth in:
1. Rules and Regulations Governing the Control of Air Quality in the State of Maryland, COMAR 26.11., Maryland Department of the Environment.
 2. Chapter 3, Montgomery County Code, 1972, Bill No. 42-73, Air Quality Control.
 3. Rules and Regulations Governing the Control of Noise Pollution in the State of Maryland, COMAR 26.02.03, Maryland Department of the Environment.
 4. Chapter 31B, Montgomery County Code, 1972, Bill No. 64-73, Noise Control.
- B. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours and all construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work, in accordance with the above provisions.

Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

- 14. Architectural Schematic:** There is no architectural schematic, per se. There are some above ground structures that we would like to bring to your attention. The top of the tunnel will have a concrete slab that includes a vault for access and an air vent valve. For water quality purposes, the vent must be located above the 100 year floodplain. At the Tuckerman shaft, this means that the vent stack is about 11 feet tall. At the Tuckerman and Stonebrook shafts, we will have a valve vault to allow isolation of the tunnel for inspection, maintenance, and emergency purposes. The valve vaults will be 6" to 1'-0" above grade. These are shown on the structural design drawings, S-02 and S-04. The corrosion control junction boxes and remote monitoring units are electrical service boxes located on posts above grade. Unlike the tunnel shaft and valve vaults, these can easily be relocated to accommodate aesthetic considerations. To make it easier to locate the surface features from an architectural standpoint, the table below identifies which drawings have details for these features. The site plan drawings referenced above show the location on the site of each of these features.

Sections and Details of Permanent Facilities			
Location	Tunnel Cap	Valve Vault	Corrosion Control and/or Monitoring
Tuckerman Shaft (S1)	T-01	S-01, S-02	CC-04, CC-14, CC-20
Conn. Ave. Shaft (S3)	T-02		CC-05, CC-14 (No rectifier)
Stoneybrook Shaft (S4)	T-04	S-03, S-04,	CC-06, CC-14, CC-20
Corrosion Monitoring Points (CM 1, 2, and 3)			CC-13, CC-14 (No rectifier)

- 15. Traffic Impact Statement:** Not Applicable. There are no permanent changes in the traffic patterns. During construction, the greatest volume of traffic will be for removal of muck and delivery of materials at the Connecticut Avenue Shaft. This access is off of the ramp from I-495. The extra lane being added and the merge configuration will provide for smooth access to and from the ramp. This work has been coordinated with the State Highway Administration. Traffic impacts for each of the other shaft locations will be periodic throughout construction. We have estimated the peak traffic per day in the table below. Please note that these are the peak estimates that occur during the time period shown. We do not expect this volume of traffic throughout the entire construction period.

Major Construction Traffic as Trucks/Day (peak estimates)				
Construction Operation (Approx. Duration of work)	Truck Type	Tuckerman Shaft (S1)	Connecticut Ave. Shaft (S3)	Stoneybrook Shaft (S4)
Shaft Excavation (6-8 mos)	Dump Truck (10 Yd)	3	3	3
Tunnel Muck Removal (12-15 months)	Dump Truck (10 Yd)	0	50	0
Pipe Installation, Shaft & Tunnel (12-15 mos.)	Tractor Trailers	4	5	2

Mandatory Referral Submittal Summary
WSSC Bi-County Tunnel

Major Construction Traffic as Trucks/Day (peak estimates)				
Construction Operation (Approx. Duration of work)	Truck Type	Tuckerman Shaft (S1)	Connecticut Ave. Shaft (S3)	Stoneybrook Shaft (S4)
Grouting and Concrete Work (8-12 mos)	Ready-mix or Dump Trucks (10 Yd)	12	15	6
Cement Mortar Lining (2-4 months)	Ready-Mix Trucks (6 Yd)	2	3	2



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Office of the Chairman, Montgomery County Planning Board

September 14, 2005

The Honorable Thomas E. Perez
President
Montgomery County Council
100 Maryland Avenue
Rockville, Maryland 20850

RECEIVED
PROJECT DEVELOPMENT
SEP 19 2005
W.S.S.C.

Dear Mr. ^{Tom}Perez:

The Bi-County Water Supply Main (W127.01) is a proposed 96-inch water pipe starting north of I-495 east of I-270 and ending at existing pipe at about the intersection of Beach and Stoneybrook Drives. The Planning Board reviewed this project on September 8, 2005. WSSC presented main alignments and shaft locations.

We believe that the preferred tunnel alignment called T1 represents the least impact to the park system and neighboring community. Even though a tunnel option has been selected, there will be unavoidable impacts at shaft locations and along as yet to be identified haul routes. It is our understanding that this alignment was also unanimously recommended by the WSSC Policy Review Group for this project. The Board conceptually agreed with the alignment T1, for the Bi-County tunnel.

During the discussion Mr. Mitchell, the project manager for WSSC, informed the Board that this project would be subject of a future Mandatory Referral. Although WSSC has a Citizen Advisory Committee to coordinate this project, we want to assure that all neighbors are well informed. We will make sure that notice is given to neighbors and community associations as required by the mandatory review procedures.

Sincerely,

Derick P. Berlage
Chairman

DPB:NB:ss

- cc: ✓ John Mitchell, WSSC
- Donald Lake, DEP
- Keith Levchenko, Montgomery County Council
- Nazir Baig, M-NCPPC

Delivering Safe Water

Safe drinking water is one of the most important public health issues in any society. The men and women of the Washington Suburban Sanitary Commission (WSSC) are proud of their efforts to produce safe, clean water that continually meets or surpasses strict federal US Environmental Protection Agency (EPA) standards.



Equally important is delivering a constant, reliable supply of water to WSSC customers through a comprehensive, interconnected distribution system. As part of this mission, WSSC has launched the Bi-County Water Tunnel project, designed to deliver water from WSSC's Potomac Water Filtration Plant (WFP) to customers in Montgomery and Prince George's Counties. The Potomac WFP produces about three-quarters of the water used by WSSC's 1.8 million customers.

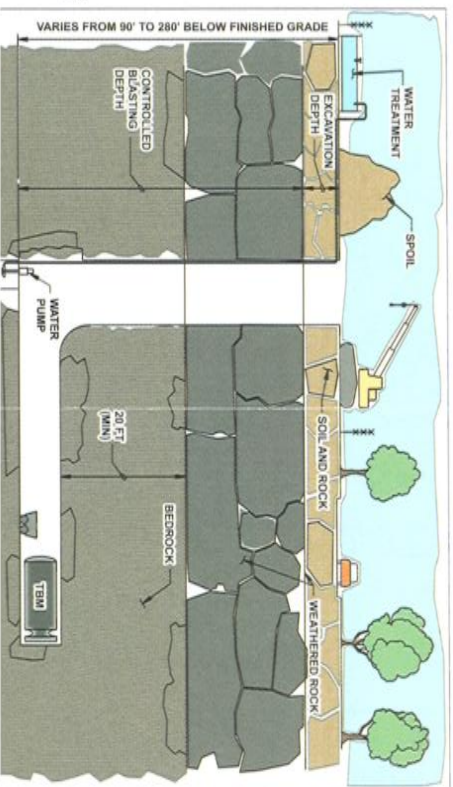
The Bi-County Water Tunnel

The water tunnel is a large, 5.3-mile, 84-inch diameter water supply main to be constructed from I-270 and Tuckerman Lane to Beach and Stonebrook Drives in Montgomery County, MD. To minimize community and environmental impacts, the proposed water main will be constructed using a deep rock tunnel instead of a traditional cut-and-cover method.

Delivering Enough Water

The need for the project was first identified in the late 1960s. Since then, WSSC and county planning agencies have been monitoring water system performance, water pressure, demand, and growth patterns to determine the appropriate time to implement this project.

Based on current demands and projections, WSSC's Bi-County Water Tunnel will be needed by the end of 2011.



Minimizing Impacts

Short-term impacts of not completing this project include low water pressure – below 30 pounds per square inch (psi) – and loss of water storage under peak summer demands. This can affect firefighting and emergency supplies, and can result in decreased performance when multiple plumbing fixtures are used at the same time.

Longer-term impacts can include systemwide mandatory water restrictions during periods of high demand, droughts, and weather-related emergencies.

During the project's design and construction, impacts on the environment and community will be mitigated or eliminated. For example, safety will be a paramount concern, disturbed land will be returned as far as possible to its original condition, and truck traffic will be controlled.

Making The Clean Water Connection

A detailed alignment study for this water main was started in 2004. The study looked at 15 alignment and construction method alternatives and refined those alternatives until a recommended alternative was developed. During the study phase, WSSC formed a Citizen's Advisory Committee (CAC) to help evaluate various alternatives. A deep tunnel pipeline and an open-cut pipeline were considered. The open-cut method would involve digging a trench into the ground into which the pipeline would be placed and re-covered.

The results of the study indicated clearly that tunneling was the preferred method because it would

minimize community, historical, and environmental impacts, be easier to maintain, and would not cost much more than other methods. The preferred alignment was selected to minimize the impact on private property and the community as a whole. The recommendation to construct the tunnel



Reliable water at dependable pressure is critical for addressing emergencies.

beneath the existing WSSC right-of-way along I-270, then tunnel beneath Rock Creek Park along the I-495 corridor was presented to and approved by both the Montgomery and Prince George's County Councils in early 2006.

Constructing A Deep Rock Tunnel

Tunnel construction involves horizontally drilling a hole from one point to another in solid bedrock between 100 and 250 feet below ground, installing pipe, within that hole, then securing the pipe in place with cement grout. To build the tunnel, several shafts are needed to provide access from the ground surface to the tunnel elevation below. The majority of impacts are confined to the shaft locations (see map).

Shaft S3 will be accessible from the I-495 outer loop ramp to Connecticut Avenue and has been selected as the main working shaft. This means that at this location, almost all tunneled materials will be removed and the vast majority of pipe materials will be inserted. The other shafts will be used for limited pipe installation, shaft construction, ventilation, grouting the pipeline in place, and connecting the new tunnel water main to existing surface pipelines.

Staying on Schedule

WSSC is aware that any large construction project can be disruptive. Therefore, we are committed to making sure this project stays on schedule and that the community is kept informed as it proceeds. After a 20-month design and permitting period, construction is expected to start in mid-2008, taking about four years to complete in 2012.

Getting Involved

WSSC has recognized the need for community outreach and involvement during all phases of the project. Since 2004, the community outreach team has met periodically with citizens, and it formed a Citizen's Advisory Committee (CAC) to provide input and a link to the community. WSSC also has developed a website with information about the project, including background and plans, and several informational brochures.

If you would like to get involved with the CAC, have questions, or would like WSSC to discuss this project to your citizen's association, please contact us using the information below.

For More Information...

- Call WSSC's Office of Communications and Community Relations at 301-206-8100.
- Visit our Web site at www.wsscwater.com. Click on the WSSC Bi-County Water Tunnel logo on the left side of the home page. You can also access the page from the "Projects" section of the Web site.

- Attend public information meetings. We hold public meetings or give presentations at community meetings. Citizens may join the Citizen's Advisory Committee. Contact us at the Web site above.

- Tunnel construction minimizes community and environmental impacts.

- Surface activities are controlled at three shaft locations:

1. Tuckerman Lane at I-270 (shaft S1)
2. Connecticut Avenue and I-495 Cloverleaf (primary working shaft S3)
3. Stonybrook Drive and Beach Drive at I-495 (shaft S4)

The Bi-County Water Tunnel will . . .

- Allow WSSC to continue to meet future water needs and expectations of our customers.
- Allow WSSC to provide constant, reliable water for daily use and fire protection during peak periods, droughts, and emergencies.
- Alleviate capacity limitations from an existing 54-inch diameter main that delivers water from the Potomac Water Filtration Plant to the water main at Rock Creek and I-495.
- Involve citizens, customers, and interested stakeholders during the design and construction phases.

About the



14501 Sweitzer Lane, Laurel, Maryland 20707
www.wsscwater.com ■ 301-206-8100

