Questions and Answers

Following are questions and answers related to the bi-county water supply main project. Click on the question to go to the answer below. For a printable brochure about this study, click [here](#).

For a printable version of the Q&A, click [here](#).

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About the Bi-County Water Supply Main Study

1. What is the Bi-County Water Supply Main Study?

The Bi-County Water Supply Main Study refers to an important WSSC project that provides the “missing link” connecting an existing water supply main at the intersection of I-270 and Tuckerman Lane to another existing main in the area where Rock Creek crosses I-495 in Montgomery County. The new supply main – also known as the Clean Water Connection – will be approximately 5.5-miles of 84-inch diameter pipe helping transport clean drinking water from WSSC’s Potomac Water Filtration Plant (WFP) to customers in eastern Montgomery County and most of Prince George’s County. The Potomac WFP produces approximately three-quarters of the water used by WSSC’s 1.6 million customers.

The new supply main will alleviate capacity limitations from the existing 54-inch diameter main that currently delivers water to the main at Rock Creek and I-495.

Our brochure, About the Bi-County Supply Main Study provides more detail about this project; click here for a printable version.

2. Why do we need this pipeline now?

Based on current demands and projections, the need for the bi-county water supply main becomes evident by the end of this decade. The bi-county water supply main will allow WSSC to continue to meet future water supply needs and expectations of our customers, and to provide constant, reliable water for daily use and fire protection during peak use periods, droughts, and emergencies such as Hurricane Isabel. Additionally, the supply main will provide water system redundancy in the event of an emergency or a maintenance-related problem (such as a water main break).

The need for the project is discussed in more detail in the brochure About the Bi-County Supply Main Study. For a printable brochure, click here.
3. **How long will this study take?**

The study and planning phase of this project began in the fall of 2004 and should be complete in early 2006. When the planning phase is complete, WSSC will seek the concurrence of Montgomery and Prince George’s County Councils on a preferred alignment and on construction methods (i.e. open-cut or tunneling). Detailed design of the new pipeline will take 12 to 18 months and construction could take as long as three years.

4. **Why was this study area chosen?**

The study area was defined by the initial list of 15 pipeline alignments and included areas outside the alignments that could be affected by construction activities.

5. **What alternatives to this pipeline has WSSC considered?**

Several alternatives to this pipeline were evaluated under previous studies. These included pumping water from the Potomac River to WSSC’s Patuxent Water Filtration Plant (WFP) for treatment and distribution; building a new water filtration plant in Prince George’s County to draw water from the Potomac estuary (area where the tide and river current meet); and constructing a new water filtration plant in Prince George’s County to draw water from the Patuxent estuary.

These evaluations showed that the bi-county water supply main was the most beneficial and cost-effective proposal.

### Construction Scheduling

6. **What is the construction schedule? How long will construction take?**

Pending approval from the Montgomery and Prince George’s County Councils by late 2005 or early 2006 on a preferred alignment and construction method (i.e. open-cut vs. tunneling), detailed design should start in early 2006 and construction should begin in 2007 and be complete in 2010. A more detailed construction timeframe will be developed as the project moves through the design phase.

7. **Will WSSC coordinate pipeline construction with other projects in the area?**

WSSC is aware of several proposed roadway and transit projects. WSSC is working closely with state and county officials during the planning phase of the bi-county water supply main. Where appropriate and to the extend possible, WSSC will coordinate construction activities with other agencies planning work within or near the study area.

### Costs

8. **How is the project funded?**

WSSC’s philosophy for projects that are needed to meet future demands of new customers is that “growth pays for growth.” For this to happen, WSSC charges new development a system development charge (SDC). Funds collected through this charge will be applied to the project so that current WSSC customers will not be paying for construction of the bi-county water supply main.

9. **How much will the project cost?**

Preliminary cost estimates for a tunnel pipeline are $115 million to $135 million and for an open-cut pipeline are $100 million to $112 million. A more detailed analysis of costs will be available as the project progresses through the study phase and detailed design phase.
10. What’s the difference between an open-cut and tunnel pipeline? How deep is a tunnel?

An open cut pipeline involves excavation and burial of a pipeline no deeper than 20 feet underground. A working area of 75 to 100 feet in width is needed along the entire alignment to construct an 84-inch pipeline using this method.

A tunnel pipeline requires constructing a shaft into solid bedrock to the desired depth. For the Clean Water Connection, WSSC is looking at a depth of 250 to 350 feet underground. A tunnel boring machine (TBM) is lowered to the bottom of this shaft and bores a tunnel through the rock. The TBM is removed from a separate shaft at each end of the pipeline and a pipe for carrying the water is installed within the newly cut tunnel.

For a printable brochure on these construction methods, click here.

11. Will the tunnel go beneath homes or businesses?

The tunnel pipeline depth will be at least 20 feet below the level of good-quality rock. This is estimated to be between 250 and 350 feet below the ground surface and will not impact any surface structures. For most of their lengths, tunnel alignments will be below public rights-of-way and parks. In short distances specific to certain alignments (T2 and T4), some tunnel segments would be below private property. It is not anticipated that any portion of the tunnel will go beneath the footprint of any homes or businesses; however, this will need to be verified during the detailed design phase.

12. What types of tunnel shafts are there?

Shafts are vertical tunnels of varying diameters for supplying equipment, personnel, and support systems to the horizontal tunnel where the pipeline is installed. There are three types of shafts: construction or working shafts, retrieval shafts, and riser shafts.

**Working shaft** – This is the main shaft on a tunnel alignment where all material from the tunnel boring operation is removed and where all pipeline materials are inserted. Once the shaft is fully excavated, sections of a tunnel boring machine (TBM) are lowered through the shaft and assembled. During tunnel excavation, the shaft is used for routing construction support utilities (such as electrical power and water), ventilation, access for construction employees, and removing excavated materials. A total disturbed area of two to three acres is required. Construction activity is nearly continuous throughout the construction period.

**Retrieval shafts** – These are smaller than working shafts but are constructed the same way and are used for removing the tunnel boring machine and to make connections to pipelines closer to the ground surface. The total disturbed area for a retrieval shaft is about one acre.

**Riser shafts** – These are small vertical tunnels used to connect a deep tunnel with a pipeline closer to the surface or to provide ventilation during tunnel construction. Provided rock and groundwater conditions are favorable, riser shafts are generally excavated from the tunnel to the pipeline near the ground, minimizing construction activities at the surface, and may not require blasting. The disturbed area is about half an acre.

13. Will any blasting be required?

Rock blasting is required for construction of working and retrieval shafts. Riser shafts may or may not require blasting. All blasting is done in accordance with all applicable laws and regulations.
with notification to all adjacent property owners. Occasionally, blasting is required through rock in constructing the deep horizontal tunnel, but this has little to no effect on the surface.

**Safety**

14. **What safety precautions will you take during construction?**

Tunnel pipeline activities are concentrated at shaft sites. Each shaft site is fenced before construction begins and is locked down during periods when no one is around. Intrusion alarms and monitors also can be used to prevent unauthorized access. All excavations is done in strict accordance with the Occupational Safety and Health Administration (OSHA) regulations.

**Alignments**

15. **Which alignments and shaft locations are under consideration?**

As of Spring, 2005, three deep-rock tunnel alignments (T1, T2, and T4) were under consideration. Open-cut pipeline alignment P1 was being studied for comparative purposes only. Click on this link to see a map of the alignment and shaft alternatives under consideration.

Shaft locations are selected based on a specific alignment, availability of land, transportation issues, and environmental and community impacts. Specific shafts under consideration are identified with the letter “S” on alignment maps Click on this link to see a map of the alignment and shaft alternatives under consideration.

**Community Impacts**

16. **What are the community impacts of tunnel and shaft construction?**

Community impacts depend on the shaft locations chosen. Tunnel construction impacts are concentrated at the shafts and can include noise, vibration, dust, truck traffic, and commuter traffic disruptions. These can be minimized with noise barriers, traffic management plans, and other measures. Between shafts, tunnel boring operations have no impact on the surface. Although some people may sense vibration from the boring machine operation, most people never notice the work is going on.

17. **What impact will this have to traffic, school bus routes, and my commute?**

WSSC will work diligently to minimize impacts caused to movement of traffic in a community because of construction. For tunnels, the extent of impact depends on the location of the working shaft. The main impact is increased truck traffic generated from construction activities. Tunnel construction requires delivery of materials for construction, temporary office trailers, pipe sections, and equipment. Most traffic is from trucks hauling away excavated material. On average, tunneling is expected to introduce two to four trucks per hour on nearby roads.

Traffic plans, which must be approved by state, county, and other appropriate agencies, address details such as detours, alternative routes, and lane closures. One open-cut alignment alternative, P1, would require closure of Beach Drive during part of the construction period. No permanent street closures or traffic disruptions are anticipated from construction of this pipeline.

18. **What impact will tunneling have on houses and other structures?**

Blasting rock at shaft sites and as needed in the tunnel can cause ground vibrations detected by people nearby. Rock characteristics determine how quickly these are dispersed with distance from the blast, but it is unlikely that the vibrations would be felt more than 1,000 feet away. Otherwise
there would be no surface impact along the alignment above the deep tunnel. Citizens who live or work nearby will be given advance notice of shaft and tunnel work being conducted.

19. What impact will construction have on recreational use of Cabin John and Rock Creek Parks?

Cabin John Park – Tunnel construction is not expected to impede recreational use of Cabin John Park.

Rock Creek Park – Tunnel construction could impede use of Rock Creek Park in some areas. Specifically, biking, hiking (Rock Creek Trail), and traffic along Beach Drive could be affected because of increased traffic and construction site use. However, measures such as re-routing the biking and hiking paths and traffic planning could minimize the areas inaccessible for recreational uses in this park during construction. No significant long-term recreational impacts are anticipated.

Environmental Impacts

20. What are the environmental impacts of tunnel construction?

Any environmental impacts depend on the alignment and shaft sites chosen. In tunnel construction, streams, wetlands, and floodplains generally are not affected. Any impacts would take place at shaft locations, where the entire shaft area must be cleared during construction. Care is taken to control erosion and prevent sediment from entering streams. Once construction is complete, shaft areas are restored with native vegetation.

21. Will any trees in construction areas need to be cut down?

Some trees would be cut to accommodate pipeline construction. The number of trees lost depends on the method of construction. Since open-cut causes the largest surface disturbance, this method would cause the greatest loss of trees. Conversely, the tunneling method would cause the least loss of trees because trees are cut only at shaft locations, at access paths to the shafts from roads, and in some cases, for paths between the riser shafts and existing and proposed pipelines.

22. In tunnel construction, are there surface impacts other than at tunnel shafts?

Disturbed surface areas, excluding shaft locations, include construction staging areas, access paths to shafts from roads, and paths for connecting the proposed pipeline to the existing 96-inch and 30-inch pipelines. In addition, periodic soil borings are taken along a selected alignment. These consist of two- to four-inch diameter holes drilled into the bedrock and then capped in accordance with state regulations. In addition, corrosion protection and monitoring devices will be installed at easily accessible locations along the tunnel alignment.

23. How will disturbed areas be restored after construction?

All areas are restored to their original condition as much as possible. Mature trees are replaced with small trees of a native species. At tunnel shafts, concrete covers are constructed, and along the pipeline, small concrete vaults are installed for valves. If needed, access roads for maintenance are retained but are located near existing roadways or other accessible points where possible.

Communication and Decision Process

24. How will a decision on the final alignment be made?

WSSC recognizes the need for extensive community input during all phases of this project – especially during alignment and construction method selection.
Our multifaceted outreach campaign includes public meetings, neighborhood briefings, brochures, a project hotline (301-206-8184), a web site (www.wsscw.com), quarterly customer bill inserts, fact sheet, and media communications to inform and update officials, customers, and other stakeholders about the project.

Additionally, we have formed a Citizens Advisory Committee, composed of about 30 citizens from within the study area (including residents from Grosvenor Place), to provide insight and feedback into the alignments and construction methods under review (i.e. open cut vs. tunneling). After the planning phase is completed in late 2005 or early 2006, WSSC will seek concurrence from the Montgomery and Prince George’s County Councils on a preferred alignment and construction method.

### 25. What are the criteria being considered in the alignment decision process?

Following are criteria developed for considering a best alignment and/or shaft sites for the new water main. These criteria are being weighed along with technical and other information.

**Main Criteria and Detailed Subcriteria for Alignment Decision Process**

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### 26. How can I be involved and how do I keep up to date on the project?

Call our Clean Water Connection hotline at 301-206-8184.
Attend public information meetings. We are hosting a series of these meetings throughout the course of the project to inform and update officials, customers, and other stakeholders. See our website for dates and locations: www.wsscwater.com and click on “projects.”

Get on our email list. We provide updates via email and in mailings at key points in the project. Email communications@wsscwater.com to be added to our list.