East Goshen Township Pipeline Task Force Meeting Agenda

Thursday, August 22, 2019 5:00 PM

- 1. Call to Order
- 2. Pledge of Allegiance
- 3. Moment of Silence
- 4. Ask if anyone is recording the meeting
- 5. Approval of Minutes
 - a. August 8, 2019
- 6. Public Comment
- 7. Chairman's Report
- 8. Reports
 - a. Legislative Update
 - b. Current Pipeline Events Impacting East Goshen
- 9. Old Business
 - a. Review Pipeline legislation Bills: 40, 257, 259, 261, 262
- 10. New Business
 - a. Consider a letter to the DEP sharing concerns regarding the direct Pipe Boring method as stated in the Exton Bypass Crossing Analysis
 - b. Discuss ABC 2020 Budget Request
 - c. Discuss Emergency Plan
- 11. Correspondence
- 12. Adjournment

PIPELINE TASK FORCE WORKSHOP MEETING

1580 PAOLI PIKE

THURSDAY, August 8, 2019

DRAFT MINUTES

Present: Chair Caroline Hughes, Members: Judi DiFonzo, Karen Miller, Christina
Morley, Gerald Sexton; David Shuey, Liaison, Township Supervisor; Rick Smith,

Members of Public in Attendance: Brian Sweet, Michele Truitt, Kay E. Whittle

Call to Order & Pledge of Allegiance

Caroline called the meeting to order at 5:00 p.m. and led the pledge of allegiance.

Moment of Silence

Township Manager

Caroline called for a moment of silence to honor our first responders and those that lost their lives for the country.

Recording

Caroline asked if anyone was recording the meeting. No one was recording.

Approval of Minutes

The minutes from July 25, 2019, were unanimously approved as amended.

Public Comment

- 1. Michele Truitt, 1430 Grand Oak Lane, stated that she appreciated the comments from the Task Force and the support from Board of Supervisors (BOS) at the last BOS meeting. She also updated that the repairs to her parents' car were almost finished. Sunoco will be paying 100% of the expenses. Michele also expressed her concern about a Township emergency plan. She stated that she is willing to be on a team to help devise an emergency plan. She continued that this could be presented to the BOS. Christina agreed that this was "an excellent idea", and referenced what happened in San Bruno, CA. Caroline stated that this could be added to an upcoming agenda.
- 2. Kay E. Whittle, 1626 E. Strasburg Road, explained that she would like to provide written comments in response to the PUC rulemaking. However, she feels that she is lacking in specific data to include. David suggested that Kay look at what has been posted on the PUC website to gather information. Caroline agreed that this process can be intimidating and that submissions can be an informal statement explaining what issues are thought to be addressed. Michele stated that she plans to submit a letter to the PUC stating that she fully supports the comments submitted from East Goshen Township.
- 3. Caroline asked Rick about the status on the CCATO comments to the PUC. Rick replied that the comments from CCATO to the PUC will be sent in a letter that also supports the County's submission.

Chairman's Report

1. Caroline stated that the main purpose of the meeting is to review the Google document containing the TF comments to the PUC in reference to the PUC Advance Notice of Proposed Rulemaking Order (ANPRO). Therefore, she will email the information she has about the loud noise from the pump station on Boot Road on Monday, 8/5, and about the two constables that were arrested.

Old Business

1 2

PUC rulemaking proposal on Safety Regulations in regards to ANPRO

- 1. The TF reviewed and discussed the comments from the TF. Caroline edited the document for submission to the PUC. Some topics that were discussed that will be included in the PUC comments were:
 - Pipeline Material
 - Depth of pipeline
 - Clearance of pipeline
 - Valve placement
 - Leak Detection
 - Risk Assessment as part of the Integrity Management Plan

2. The TF agreed that these comments, due to the PUC on 8/28/19, should be forwarded to the PUC as written and edited. Caroline made a motion to submit the comments to the Board of Supervisors to forward to the PUC. Judi seconded the motion. It unanimously passed 5-0.

Action Items for TF

The next meeting is Thursday, August 22, 2019, at 5:00 pm.

Adjournment

The meeting was adjourned at 7:20 pm.

32 Respectfully submitted,

33 Susan D'Amore

F:\Data\Shared Data\Minutes\Pipeline Task Force\2019\Pipeline TF Mins 08-08-19 DRAFT.docx

WEST WHITELAND TOWNSHIP

THURSDAY 7-18-19

7 Pm

HORIZONTAL DIRECTIONAL DRILL ANALYSIS

EXTON BYPASS CROSSING

PADEP SECTION 105 PERMIT NO.: E15-862

PA-CH-0256.0000-RR

(SPLP HDD No. S3-0400)



EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256-0000-RR (SPLP HDD No. S3-0400)

This reanalysis of the horizontal directional drill (HDD) installation of a 20-inch diameter pipeline under Exton Bypass has been completed in accordance with Condition No. 3 of the Stipulated Order issued under Environmental Hearing Board Docket No. 2017-009-L. Condition No. 3 stipulates for HDDs initiated after the temporary injunction issued by the Pennsylvania Department of Environmental Protection (PADEP) Environmental Hearing Board on July 25, 2017, a reanalysis must be performed on HDDs for which an inadvertent return (IR) occurs during the installation of one pipe (20 or 16-inch diameter) where a second pipe will thereafter be installed in the same right-of-way (ROW).

The installation of the 16-inch diameter pipeline using HDD was initiated before the temporary injunction issued by the Pennsylvania Department of Environmental Protection (PADEP) Environmental Hearing Board on July 25, 2017. The 16-inch HDD had an inadvertent return (IR) on the installation of the first pipe (16-inch) and therefore, the installation of the second pipe (20-inch) requires reanalysis.

The 20-inch pipe HDD is referred to herein as HDD S3-0400.

SPLP has completed additional geotechnical and geophysical investigations of the drilling area to assess if the HDD could be redesigned to pass through better bedrock conditions; however, the data revealed inconsistencies in rock quality and other problematic geologic factors at depths through and below the HDD design limitations. Therefore, SPLP has elected to abandon any future HDD attempts to install the pipeline through this area and has developed an alternate construction plan using a combination of open trench construction method in uplands, and a Direct Pipe bore underneath aquatic resources, U.S. 30 Exton Bypass, an abandoned Norfolk rail line, and the active Amtrak/SEPTA rail lines.

PIPE INFORMATION

20-Inoh: 0.456 wall thickness; X-65

ORIGINAL HORIZONTAL DIRECTIONAL DRILL DESIGN SUMMARY: 20-INCH

Horizontal length: 2,200 foot (ft)
Entry/Exit angle: 10-16 degrees
Maximum Depth of cover: 117 ft
Pipe design radius: 2,200 – 2,400 ft

Pipe stress allowances are an integral part of the design calculations performed for each HDD. The 20-inch HDD profile was intended to pass under public transportation infrastructure and a residential area adjacent to the existing SPLP pipeline easement, thereby avoiding surface disturbances where residences are immediately adjacent to the existing easement. The difference in elevation between the northwest HDD entry point and exit point allowed for a low angle of entry, but did result in an exit that exceeded the pipe free stress radius "breakover" allowance, which requires either ramping out the exit side ditch line before tie-in to the conventional laid pipe, or installing a custom pipe bend at the tie-in point. The entry and exit radius to the horizontal run at 2,000-2,400 ft is below pipe stress allowances and would have allowed for a clean pull through of the HDD pipe segment.

INADVERTENT RETURN DISCUSSION

During the pilot phase drilling for the S3-0400 16-inch, the first pilot drill was terminated after 909 feet of progress due to losses of returns and borehole collapse, and was abandoned by grouting. The HDD was



EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256.0000-RR-16 (SPLP HDD No. S3-0400)

redesigned and the second pilot drill experienced similar issues; however, approved LCM products were used to improve circulation until completion of the pilot.

A 20-inch ream commenced from northwest to southeast and at approximately 940 feet from the northwest entry/exit a 50-gallon IR occurred. This IR location corresponds approximately with the projected location of the Marctic Thrust Fault zone. The IR was cleaned up and a 30-inch reamer was added behind the 20-inch reamer to improve circulation and reduce drilling fluid pressure through completion of the 20-inch ream. A 24-inch ream commenced from northwest to southeast and at 1,763 ft of progress a 500-gallon IR occurred, at the same location of the previous IR. Crews removed the bentonite drilling fluid and fenced off the area to prevent access. The next day a circular subsidence feature, initially 3 feet in diameter and 2 feet deep, was visible at the land surface, which subsequently expanded to a 9.0 ft by 9.5 ft circular area.

The cause of the IR during the reaming phase was due to a build-up of cuttings that clogged the annulus and caused the drilling fluids to migrate vertically through highly weathered and fractured bedrock to ground surface. The 24-inch reaming tool was located approximately 800 feet past the IR location and was at a higher elevation which assisted in the vertical movement of the drilling fluids.

The subsidence feature that developed was most likely caused by soil flowing downward along foliation planes within the saprolite horizon, weakened by drilling activity, into the subsurface fault zone. The Marctic Thrust Fault zone is characteristically filled with broken and weathered rock allowing this material to slowly collapse into the HDD annulus, causing subsidence at the ground surface.

Figures 1 and 2 in Attachment 2 provide a plan and cross section view of the HDD bore hole and locations of the IRs. Additional written description of the IR events during the drilling of HDD S3-0400 is provided in Section 3.0 of the Hydrogeologic Analysis Report provided in Attachment 1. SPLP utilized all the foregoing information obtained during installation of the 16-inch pipe in the assessment of construction alternatives and re-routes at this location.

GEOLOGIC AND HYDROGEOLOGIC ANALYSIS

HDD 83-0400 transects the contact between the Piedmont Lowland Section to the north and Piedmont Upland Section to the south, both of the Piedmont Physiographic Province. The Marctic Thrust Fault marks the change from lowlands to uplands. The Lowland Section is characterized by broad moderately dissected, karst valleys separated by broad low hills. The Upland Section is characterized by broad rounded hilltops.

The mapped bedrock units crossed by the HDD alignment include; mica schist and phyllite of the Octoraro Formation; the calcareous phyllite upper unit of the Conestoga Formation; and carbonaceous limestone of lower unit of the Conestoga Formation. These lithologies correspond with the latest geologic map of Chester Valley.

The revised construction plans are for 2,114 ft of open trench construction, and an 816 ft Direct Pipe bore. The Direct Pipe bore method is cased, and has a closed fluid control system. The planned bore will pass through overburden or highly weathered and weak bedrock with low RQD values. The geology at this location presents no IR or subsidence risks to the construction methods planned in replacement of the HDD.

Attachment 1 provides a discussion on the geology and results of the geotechnical investigations and a geophysical investigation performed at this location.



EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256-0000-RR (SPLP HDD No. S3-0400)

HYDROGEOLOGY, GROUND WATER, AND WELL PRODUCTION ZONES

The most basic conceptual model for groundwater flow in the area of HDD S3-0400 is to depict the uplands underlain by the Octorara Formation as the groundwater recharge zone and the lowland underlain by units of the Conestoga Formation as a groundwater discharge zone. As such, ground water is expected to move southeast to northwest at the HDD. Both formations have components of primary porosity and secondary porosity.

Primary porosity best supports the basic conceptual model of groundwater flow from recharge areas in uplands to discharge areas in lowlands. Secondary porosity created by openings in foliations, fractures and faults can impart anisotropies on the groundwater flow system altering the basic directions of groundwater flow.

Groundwater levels recorded during the geotechnical borings show groundwater depths ranging from 5.5 to 28 feet (ft) below ground surface (bgs).

A search of the Pennsylvania Groundwater Information System (PaGWIS) database produced twelve residential wells with 0.5 miles of the HDD S3-0400 alignment. Five of the wells were in the Conestoga Formation and seven of the wells are within the boundaries of the mapped Octoraro Formation. The water levels for the Conestoga Formation wells ranged from 17 to 40 ft bgs with a mean of 24 ft bgs. The water levels for the Octoraro wells ranged from 9 to 45 ft bgs with a mean of 30 ft bgs.

The revised construction plans are for 2,114 ft of open trench construction, and an 816 ft Direct Pipe bore. The Direct Pipe bore method is cased, and has a closed fluid control system. The planned bore will pass through overburden or highly weathered and weak bedrock with low RQD values. The hydrogeology at this location presents no IR or subsidence risks to the construction methods planned in replacement of the HDD.

Attachment 1 provides a discussion on the hydrogeology and results of the geotechnical investigation performed at this location.

ADJACENT FEATURES ANALYSIS

This HDD location is located on the southeast of the Town of Exton, West Whiteland Township, in Chester County, Pennsylvania. The HDD alignment crosses under U.S. 30 Exton Bypass; two (2) wetlands; an abandoned Norfolk rail line and active Amtrak/SEPTA rail line, and Lynetree Drive. This HDD location is set within urban residential developments for the majority of its length.

The pipeline route follows an existing SPLP utility easement with one or more existing pipelines for the entire length of the HDD alignment.

Aquatic resources along the HDD alignment include wetlands W-K18, and W-K21.

SPLP's public outreach conducted in October of 2017 resulted in no private water wells being identified within 450 ft of the HDD alignment. A water well map is provided as Figure 5 in the Hydrogeologic Reevaluation Report provided in Attachment 1. Landowner responses and available information indicates the properties adjacent to the HDD alignment are served by public water.

SPLP will transmit a copy of this HDD analysis to all landowners having a property line within 450 ft of any direction of this HDD location.



EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256.0000-RR-16 (SPLP HDD No. S3-0400)

ALTERNATIVES ANALYSIS

As required by the Order, the reanalysis of HDD S3-0400 includes an evaluation of open cut alternatives and a re-route analysis. As part of the PADEP Chapter 105 permit process for the Mariner II East Project, SPLP developed and submitted for review a project-wide Alternatives Analysis. During the development and siting of the Project, SPLP considered several different routings, locations, and designs to determine whether there was a practicable alternative to the proposed impact. SPLP performed this determination through a sequential review of routes and design techniques, which concluded with an alternative that has the least environmental impacts, taking into consideration cost, existing technology, and logistics. The baseline route provided for the pipeline construction was to cross every wetland and stream on the project by open cut construction procedures.

Re-Route Analysis

The pipeline route as currently permitted follows an existing SPLP easement through urban development southeast of the Town of Exton. The general route of the Mariner II project in this area of the state is from northwest to the southeast.

There is an existing Texas Eastern Pipeline easement 700 ft to the southwest of the SPLP easement. This easement originates in near vicinity to the SPLP, north of Exton Bypass, then proceeds through larger areas of wetlands and a stream which are not present on the SPLP easement. This easement is set within the same geologic setting; crosses under the same transportation infrastructure; crosses through the same residential area as the SPLP easement, and ultimately this easement proceeds in a southern direction deviating away from the general direction of the Mariner Pipeline project. Therefore, this alternative route presents no advantages over the existing SPLP easement.

There are no existing utility corridors to the east-northeast that provide a practical alternative route. Any alternate route considered to the east-northeast would require the clearing of a new "greenfield" corridor through existing woodlands, increase the number of stream crossings, and possibly encroach on additional private residences before it could rejoin the current route.

In summary, due to the urban setting surrounding the overall route of the Mariner II pipelines in this area, there is no alternative route that could avoid conflicts with existing development. Since SPLP possesses no prior rights for multiple utility lines in any nearby existing corridor, nor any new corridor that could be developed, SPLP anticipates significant legal action would be necessary to acquire a new easement.

Open-cut Analysis

In this area of the Mariner II Pipeline project, the use of an HDD construction method was selected to be employed in many instances due to the infrastructure and amount of residential and commercial development adjacent to and encroaching upon the existing SPLP easement, since the HDD method generally avoids direct disturbance of lands between the points of entry and exit. However, as previously discussed, SPLP performed additional geologic investigations and has determined from this data that a revised HDD design will not be able to avoid the subsurface geologic conditions that resulted in the problems that occurred during installation of the 16-inch pipeline.

SPLP evaluated the select use of open cut construction of the existing permitted right-of-way and determined this would have the least impact, and most effective means, for installing the pipeline and restoring the properties where adequate space exists to employ conventional construction methods. As discussed previously, SPLP's revised construction plans are for 2,114 ft of open trench construction.

EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256-0000-RR (SPLP HDD No. 53-0400)

Use of Conventional Auger Bore

Planning for a conventional bore must account for the extent or width of the feature (road, stream, residence, etc.) being bored under, as well as the length and width of the setup-entry pit for setup and operations of the boring equipment, and the receiving pit through which the product pipeline is pulled back through after the boring machinery exits and is removed.

Based on the track record of installations during construction of this pipeline project, conventional auger bores should be limited to approximately 200 linear feet or less, varying by the underlying substrate at a proposed bore location. Conventional auger bores for the 20-inch pipeline, attempted at longer distances, have at times had alignment drift and elevation deflections which have complicated installation. Drift and deflection are safety concerns when boring adjacent to in-service pipelines and other utilities, and there is one existing in service pipeline within the existing SPLP easement and the already installed 16-inch ME II pipeline.

The length of crossing to pass under the aquatic resources; U.S. 30 Exton Bypass; the abandoned Norfolk rail line, and the active Amtrak/SEPTA rail line is beyond the capabilities of this technology. Subset conventional auger bores of the Exton Bypass and abandoned and active railroads was considered and rejected due to difficulty of accessing the alignment and resulting impacts to the public.

Use of FlexBor

SPLP contractors attempted three (3) FlexBors and partially completed two of these to replace HDDs on the Mariner Project. One FlexBor failed in the pilot phase and was replaced with a conventional bore under a highway and open-cut construction. The two partially successful FlexBors completed the pilot phases, but both had difficulties completing the reaming phase. SPLP's analysis is that this technology is not perfected for larger diameter bore attempts.

Use of Direct Pipe Bore

The Direct Pipe bore method is also known as "microtunneling". This method of pipeline installation is a remote-controlled, continuously supported pipe jacking method. During the direct pipe installation, operations are managed by an operator in an above-ground control room alongside of the installation pit. Rock and soil cutting and removal occurs by drilling fluid injection through the cutting tool during rotation at the face of the bore, and the cuttings are forced into inlet holes in the crushing cone at the tool face for circulation to a recycling plant through a closed system. The entire operating system for this method of pipeline installation, including the cutting tool drive hydraulics, fluid injection, fluid return, and operating controls are enclosed inside the 50-inch outside diameter bore pipe being installed. At the launching point/entry pit, the bore pipe is attached to a "jacking block" that hammers the bore pipe while the tool is cutting through the substrate or geology. The cutting tool face is marginally larger in diameter than the pipe it is attached to. As a result, there is minimal annulus space, which minimizes the potential for drilling fluid returns or the production of groundwater returning back to the point of entry. Once the bore pipe is installed, the 16-inch product pipeline will have spider gaskets and spacers installed to prevent coating damage and cathodic protection short circuits, and then will be pulled through the bore pipe.

SPLP evaluated the use of Direct Pipe bore to pass by difficult crossing features within the alignment of HDD S3-0400. The construction specialists who operate this boring equipment identified an 816 ft segment of this alignment to employ this method of construction; which is incorporated into SPLP's revised construction plan.



EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256,0000-RR-16 (SPLP HDD No. S3-0400)

CONCLUSION

As stated previously, SPLP has evaluated the events which occurred during the S3-0400 16-inch HDD, and performed additional geotechnical investigations and a geophysical investigation of the alignment. This data revealed inconsistencies in rock quality and other problematic geologic factors at depths through and below the HDD design limitations. Therefore, SPLP has elected to abandon any future HDD attempts to install a pipeline through this area and has developed an alternate construction plan using a combination of open trench construction method in uplands, and a Direct Pipe bore underneath aquatic resources, U.S. 30 Exton Bypass, an abandoned Norfolk rail line, and the active Amtrak/SEPTA rail lines.

The revised construction plan will avoid impacts to public infrastructure and natural resources, and accelerate the completion of the pipeline installation and restoration while adjacent to residential areas.

Attachment 2 contains the HDD plan and profile with the 16-inch HDD IR location data, and the plan and profile views of the direct bore discussed above.

To address the additional impacts associated with these proposed changes in construction methods, a Chapter 102 & Chapter 105 permit modification package has been submitted to the PADEP.



EXTON BYPASS CROSSING PADEP SECTION 105 PERMIT NO. E15-862 PA-CH-0256.0000-RR (SPLP HDD No. 53-0400)

FEASIBILITY DETERMINATION

Based on the information reviewed by the Geotechnical Evaluation Leader, Professional Geologists, Professional Engineers, and HDD specialists, the HDD Reevaluation Team's opinion is that the proposed alternative construction plans presented within this re-revaluation report will minimize the risk of IRs and impacts to public and private water supplies during the construction phases for this segment of the Mariner II Pipeline Project.

Pertaining to Horizontal Directional Drilling Practices and Procedures; Conventional Construction; Alternatives; and Environmental Effects

Larry J. Gremminger, CWB Geotechnical Evaluation Leader Mariner East 2 Pipeline Project

Pertaining to the practice of geology

Richard T. Wardrop, P.G.

License No. PG-000157-G

Groundwater & Environmental Services, Inc.

Lead Hydrogeologist

PROFESSIONAL TO RICHARD T. WARDROP GECLOSIST

Pertaining to the pipeline stress and geometry

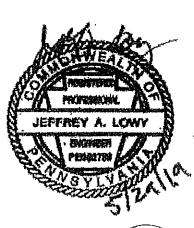
Jeffery A. Lowy, P.E. Lic. No. PE082759

Rooney Engineering, Inc.

Civil Engineer

5129/19

Date





Memo

To:

Conservancy Board, Parks & Rec Commission, Pipeline Task Force, Futurist Commission,

Sustainability Commission & Historical Commission

From: Jon Altshul

Re:

2020 Budget Request

Date:

July 11, 2019

As we enter the second half of 2019, it is time to begin thinking about the Township's budget for 2020.

To that end, if your ABC has its own budget, attached please find an Excel worksheet with individual tabs for each of your ABCs showing:

- 2019 year-to-date budgeted and actual expenditures through June.
- A blank column for the 2020 budget request.

I would be grateful if you could provide me with:

- 1) 2020 budget requests for each line item
- A justification for your 2020 budget request. This justification is particularly important for any line item for which you are requesting more budget authority in 2020 than you received in 2020. Please use a separate page if your justification can not fit in the Excel cell.

Note that the Township has many "ABC-related" expenditures. For example, the Township needs to maintain the Blacksmith Shop/Plank House. The Township also incurs legal costs related to the pipeline and consulting costs related to planning work, etc. These line items are separate from your ABC budget; however, to the extent that your ABC intends to make upcoming recommendations to the Board of Supervisors that could result in the expenditure of Township funds beyond current levels, please let me know as soon as possible!

As always, 2019 will be a tight budget year. Preliminary forecasts suggest that the Township will need to continue to deplete its general fund balance in order to achieve a balanced budget. Thus, all Township departments and ABC groups will be under pressure to identify cost savings.

When developing your budget request, remember your group's mission, goals and objectives. Then ask yourselves, what do you <u>need</u> in order to realize your objectives and what do you merely <u>want</u>? Expenditures that don't meet the "need" threshold are unlikely to receive BOS approval.

Please don't hesitate to contact me by phone or email over the summer.

As we plan to have preliminary budget materials prepared for discussions with the Board in early autumn, please return this completed worksheet to me by no later than Friday, September 27th. I will follow up with you if I have any questions.

Thank you!

PIPELINE TASK FORCE Projection

2020 Budget Request Justification