COMMENT

4. Additional justification for the avoidance and minimization of wetland impacts as required by §105.18a regarding the selection of the 200-foot survey width, and identified opportunities outside of and along the corridor should be provided. Other pipeline projects had survey widths of up to 600 feet. Please address the environmental impact in the justification and describe the avoidance and minimization of wetland impacts within the 200-foot corridor.

RESPONSE

The proposed Pennsylvania Pipeline Project ("Project") was developed through the consideration of routing and design alternatives and implementation of the Management of Change (MOC) process, and was not limited to consideration of alternatives within the 200-foot-wide survey corridor. Specifically, the Alternatives Analysis presents that development of the initial planning route, major route alternatives, resultant Baseline Route Alternative, and follow-on minor route variations considered and adopted alternatives outside the 200-foot-wide survey corridor. As the final routing and design was developed, the 200-foot-wide survey corridor was then used to further avoid and minimize impacts to wetlands (and streams) via programmatic and site-specific narrowing and realignment of construction workspace.

Per § 105.18a(a)(3) for "Exceptional value wetlands" *[and § 105.18a(b)(3) states for "Other wetlands"]*, the Alternatives Analysis affirmatively demonstrates in writing that:

> "There is **no practicable alternative** to the proposed project **that would not involve a wetland or** that **would have less effect *[less adverse impact]* on the wetland**, and **not have other significant adverse effects *[impacts]* on the environment**. **An alternative is practicable if it is available and capable of being carried out after taking into consideration construction cost, existing technology and logistics**. An area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed to fulfill the basic purpose of the project shall be considered as a practicable *[practical]* alternative."

In compliance with the Department's alternatives regulations cited above, the end result of the above-described Project development process is a proposed Project that:

1) is "practicable" as it is "available and capable of being carried out after taking into consideration construction cost, existing technology and logistics";
2) does "not have other significant adverse effects *[impacts]* on the environment", on either a site-specific or cumulative basis; and
3) avoids ("would not involve a wetland") or minimizes ("would have less effect *[less adverse impact]* on the wetland") impacts to wetlands (and streams) to a degree that is practicable and such that remaining impacts to wetlands are temporary, minor, and not adverse.

Initial Planning Route

As presented in the Alternatives Analysis, the first step in Project development was the development of an Initial Planning Route, which was not limited in any way to a 200-foot-wide survey corridor. The initial route selected for the Project was routing to be co-located with (abut and/or overlap) the right-of-way of an existing pipeline owned and operated by SPLP. The co-location of the Project with an existing SPLP right-of-way, and ultimately also co-location of sections of the Project with other existing utility corridors, was a major means to avoid environmental impacts and impacts to sensitive resources and communities, and to minimize the site-specific and cumulative environmental impacts arising from the Project. This routing approach was used to comply with initial and ongoing advisement from the Department, guidance from the U.S. Fish and Wildlife Service, and guidance from the Governor's Pipeline Infrastructure Task Force Report, to avoid "greenfield" routing and associated site-specific and cumulative environmental impacts enumerated in the above-noted guidance documents. Of the 307-mile-long Project, 81% (248 miles) is co-located with existing utility ROWs, including71% (217 miles) co-located with SPLP ROWs, and 10% (31 miles) co-located with non-SPLP utility ROWs.

Major Route Alternatives

As presented in the Alternatives Analysis, the second step in Project development was the consideration and adoption of four Major Route Alternatives that are "practicable" and do "not have other significant adverse effects *[impacts]* on the environment". The consideration, development, and adoption of these Major Route Alternatives was not limited in any way to a 200-foot-wide survey corridor. As detailed in the Alternatives Analysis, once the right-of-way corridor for SPLP's existing pipeline was identified as the initial routing for the Project, SPLP then evaluated that routing, at a planning, desk-top level, to determine if there were any obvious constraints and impacts that would occur if the entire existing right-of-way was used for the approximately 300 mile length of the Project. This evaluation included consideration of the feasibility and practicability of the initial routing of the Project with regard to current technology, cost, and logistics. The purpose of this evaluation was to determine if there were practicable major route alternatives that avoided or reduced impacts on environmentally sensitive resources, such as large population centers, scenic areas, wildlife management areas, or cultural/historically significant resources proposed to be crossed by the Project. Any major route alternative could obviously not change the origin and delivery point of the Project. However, this evaluation involved a concerted effort to identify alternative routes that would satisfy the Project need and further minimize environmental impacts and/or improve public health and safety.

Establishment of Baseline Route Alternative and Survey Corridor

As presented in Section 3.4 of the Alternatives Analysis, the third step in Project development was the establishment of the Baseline Route Alternative, which is comprised of the Initial Planning Route as modified by adoption of the four Major Route Alternatives. The Baseline Route Alternative achieved the objectives and need for the Project, while maximizing the use of opportunities to co-locate (abut and overlap) its right-of-way with existing SPLP right-of-way and co-locate (abut) its right-of-way with other existing utility rights-of-way, avoiding potential significant impacts on other non-wetland environmental resources, allowing for feasible pipeline construction, and reducing engineering constraints. The Baseline Route Alternative established the baseline against which additional measures to avoid and minimize wetland impacts were considered.

As presented in Section 5.0 of the Alternatives Analysis, *Establishment of Engineering and Environmental Survey Corridor*, the 200-foot-wide survey corridor was established only after establishment of the Baseline Route Alternatives. This section also provides justification for the 200-foot survey corridor width based on the purpose and need of a detailed, site-specific, survey corridor, which is to assess and confirm practicability, avoid other significant adverse effects *[impacts]* on the environment, and further avoid and minimize wetland (and stream) impacts.

Specifically, the Baseline Route Alternative established the centerline for a 200-foot-wide engineering, land use, biological, wetland, waterbody, and cultural resource survey corridor in which to investigate minor route variations and construction techniques to further minimize environmental impacts from the Project. This 200-foot-wide survey corridor was considered a reasonable width along the Baseline Route Alternative to perform detailed and site-specific field studies to develop additional improvements to the Project to minimize environmental impacts, as well as assess Project practicability with regard to current technology, cost, and logistics. This survey corridor width allows for flexibility in considering potential application of detailed, site-specific trenchless construction methods (conventional bore and horizontal directional drilling [HDD] techniques) along with minor pipeline route variations (realignments).

It is important to note 200 feet is a typical industry-standard survey corridor width, and in the case of this Project, is 2.66-times the standard width of the proposed construction right-of-way in uplands (75 feet) and 4.00-times the standard width of the proposed construction right-of-way across wetlands and streams. Therefore, this survey corridor width encompasses a substantively greater aerial extent of land than required to design, construct, and operate the Project, and (to re-emphasize) "allows for flexibility in considering potential application of detailed, site-specific trenchless construction methods…along with minor pipeline route variations."

Management of Change Process

As presented in Section 5.0 of the Alternatives Analysis, the fourth step in Project development was implementation of the Management of Change (MOC) Process. Following establishment of the Baseline Route Alternative and associated 200-foot-wide survey corridor, SPLP conducted an integrated and detailed evaluation of the Baseline Route Alternative, which was labeled the MOC Process. The MOC Process considered opportunities to change the Baseline Route Alternative to further avoid and minimize potential environmental impacts, while simultaneously considering potential construction and operational constraints presented by affected landowners, existing land uses, infrastructure obstacles, and other factors affecting use of existing technology, cost, and logistics.

The MOC Process was initiated on a site-specific basis as opportunities or constraints were raised by an Integrated Project Team. The Integrated Project Team consisted of representatives from SPLP project management, engineering, land/right-of-way, and environmental specialists. Any member of the Integrated Project Team that identified an opportunity or constraint along the Baseline Route Alternative route then raised the subject issue to the rest of the team for consideration of a minor route variation or trenchless construction method. Thus, any type of opportunity or constraint – practicability, constructability, engineering design, landowner concerns, land use, environmental impacts, or any other relevant concern – could initiate the MOC Process.

More specifically, in accordance with the Department's regulations, implementation of the MOC Process using the detailed, site-specific, in-field data within the 200-foot-wide survey corridor allowed:

1) Determination whether the proposed routing was technically feasible and "practicable" via collection, review, and consideration of detailed civil survey of the physical conditions and constraints of the routing, and detailed consideration, evaluation, and determination of the potential use of conventional trenching, conventional bore, and HDD construction techniques.
2) Determination whether the proposed routing avoided "other significant adverse effects [impacts] on the environment" via collection, review, and consideration of detailed environmental survey, including wetlands, waterbodies, vegetation cover type, land use, and cultural resources.
3) Identification and delineation of federally- and state-regulated wetlands (and waterbodies), including cover type classifications (PEM, PSS, PFO), for the review and consideration of measures (e.g., pipeline realignment, workspace reconfiguration, trenchless crossing techniques) to further avoid or minimize impacts on wetland (and waterbody) resources.

Minor Route Variations

In accordance with the Department's regulations, where significant or adverse impacts were identified within the 200-foot-wide survey corridor, SPLP developed, assessed, and adopted (through the MOC Process) Minor Route Variations to further avoid or minimize impacts on wetland (and waterbody) resources, with the stated conditions that such variations were technically feasible and "practicable" with regard to current technology, construction cost, and logistics, and avoided "other significant adverse effects *[impacts]* on the environment". As a result of the MOC Process, SPLP adopted 72 minor route variations, **the majority of which were located outside the 200-foot-wide survey corridor**, that: 1) were determined to be technically feasible and "practicable", and 2) avoided "other significant adverse effects *[impacts]* on the environment", and/or 3) resulted in further incremental avoidance or minimization of Project impacts on wetlands (and streams).

As presented in the Alternatives Analysis, the adoption of the subject 72 minor route variations results in significant cumulative impact avoidance and reduction to Exceptional Value (EV) Wetlands (9.33 acres), Other Wetlands (16.05 acres), PFO wetland conversion (9.26 acres), HQ/EV Waterbodies (an increase of 1,103 linear feet), and other waterbodies (6,207 linear feet).

Trenchless Construction Methods

In accordance with the Department's regulations, where significant or adverse impacts were identified within the 200-foot-wide survey corridor, SPLP developed, assessed, and adopted (through the MOC Process) a significant number of trenchless crossings (in place of conventional open cut or trenched crossings) using either conventional bore or HDD construction methods. These adopted trenchless crossings, **located within the 200-foot-wide survey corridor**, met the stated conditions that such crossings were technically feasibility and "practicable" with regard to current technology, construction cost, and logistics, and avoided "other significant adverse effects *[impacts]* on the environment".

Across the Project, SPLP adopted a total of 554 conventional bore crossings (304 on the 20-inch pipeline and 250 on the 16-inch pipeline) and a total of 237 HDD crossings (132 on the 20-inch pipeline and 105 on the 16-inch pipeline). A significant number of these trenchless crossings were specifically

designed to avoid impacts on other (non-wetland) environmental resources, and further avoid or minimize impacts to wetlands and waterbodies. As presented in the Alternatives Analysis, the adoption of these conventional bores and HDDs results in significant cumulative impact avoidance and reduction to EV Wetlands (9.78 acres), Other Wetlands (22.34 acres), PFO wetland conversion (13.24 acres), HQ and EV Waterbodies (1,656 linear feet), and other waterbodies (11,730 linear feet).

Programmatic Impact Avoidance and Reduction Measures

In parallel with the MOC Process and early in the planning process, SPLP undertook substantive programmatic measures to programmatically avoid and reduce environmental impacts, including impacts at all wetland and waterbody crossings. Specifically, SPLP evaluated and adopted the following programmatic wetland and waterbody impact avoidance and reduction measures:

- Measures to Avoid and Reduce Areal Extent of Wetland and Waterbody Impact:
    - Maximized the co-location (abut and overlap) of the Project construction and operation workspace with the existing SPLP pipeline right-of-way.
    - Where the Project diverges from the existing SPLP pipeline right-of-way, maximized the co-location (abut) of the Project construction and operation workspace with the other existing utility rights-of-way.
    - Narrowed the width of the construction right-of-way from 100 feet to 75 feet along the entire pipeline alignment.
    - Further narrowed the width of the construction right-of-way from 75 feet to 50 feet at all wetland and waterbody crossings, except in a limited number of cases where site-specific conditions required the use of a wider construction right-of-way.
- Measures to Avoid and Reduce Construction and Operation Impact:
    - Use of dry, open trench installation methods at all the remaining (i.e., non-trenchless) open trench wetland and waterbody crossings.
    - Use of wetland and waterbody crossing best management practices, as detailed in (Attachment 11: Enclosure E, Part 4) – Impact Avoidance, Minimization, and Mitigation Procedures; and Attachment 12 – Erosion & Sedimentation Control Plan.
    - As set forth in the Project Impact analyses (Attachment 11: Enclosure D, and Enclosure E, Part 2), implementation of the Project as proposed, including the proposed best management practices presented in the Impact Avoidance, Minimization, and Mitigation Procedures and Erosion & Sedimentation Control Plan, would result temporary and minor impacts to wetlands and associated wetland functions and values (with the exception of PFO cover type conversion). The resultant impacts are not considered significant or adverse, and thus do not require compensatory mitigation.
    - As set forth in the Compensatory Mitigation Plan (Attachment 11: Enclosure F), the remaining unavoidable adverse impacts resulting in PFO cover type conversion (reduced to 0.405 acres Project-wide) would be adequately mitigated via compensatory mitigation.
    - As set forth in the Antidegradation Analysis (Attachment 11: Enclosure E, Part 5), the Project as proposed would comply with State antidegradation requirements contained in Chapters 93, 95 and 102 (relating to water quality standards; wastewater treatment requirements; and erosion and sediment control) and the Clean Water Act (CWA) (33 U.S.C.A. § § 1251—1376).

- As set forth in the Cumulative Impacts Assessment (Attachment 11: Enclosure E, Part 6), the Project as proposed, and in consideration of other projects, would not cause cumulative impacts that result in the impairment of the Commonwealth's EV wetland resources or a major impairment of the Commonwealth's other wetland resources.

Adoption of the above programmatic wetland and waterbody impact avoidance and reduction measures resulted in a cumulative quantitative and qualitative reduction in Project impacts on EV Wetlands, Other Wetlands, PFO wetland conversion, HQ and EV Streams, and other (non-HQ/EV) streams (see Section 5.4). Adoption of these measures demonstrate substantive site-specific and cumulative impact avoidance and minimization to the environment, including wetland and waterbodies.

Remaining Impacts to the Environmental, Wetland, (and Stream) Resources

In compliance with the Department's regulations cited above, the end result of the above-described Project development process is a proposed Project that:

1) is "practicable" as it is "available and capable of being carried out after taking into consideration construction cost, existing technology and logistics";
2) does "not have other significant adverse effects *[impacts]* on the environment", on either a site-specific or cumulative basis; and
3) avoids ("would not involve a wetland") or minimizes ("would have less effect *[less adverse impact]* on the wetland") impacts to wetlands (and streams) to a degree that is practicable and such that remaining impacts to wetlands are temporary, minor, and not adverse.

As presented in the Alternatives Analysis, implementation of the MOC Process and adoption of the associated measures results in significant cumulative impact avoidance and reduction from the Baseline Route Alternative to the Proposed Route Alternative, including to:

- EV Wetlands – Compared to the Baseline Route Alternative (32.1 acres), implementation of the above measures reduced impacts (by 20.9 acres, a 65.1 percent reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (11.2 acres of temporary impacts);
- Other Wetlands – Compared to the Baseline Route Alternative (86.8 acres), implementation of the above measures reduced impacts (by 61.3 acres, a 70.6 percent reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (25.5 acres of temporary impacts);
- Total Wetlands – Compared to the Baseline Route Alternative (118.9 acres), implementation of the above measures reduced impacts (by 82.2 acres, a 69.1 percent reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (36.7 acres of temporary impacts);
- PFO Wetlands – Compared to the Baseline Route Alternative (35.2 acres), implementation of the above measures reduced impacts (by 33.7 acres, a 95.7 percent reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (1.6 acres), only 0.405 acre (across 19 wetlands) of which results in PFO wetland cover type conversion;
- HQ and EV Waterbodies – Compared to the Baseline Route Alternative (35,031 linear feet), implementation of the above measures reduced impacts (by 20,622 linear feet, a 58.9 percent

reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (14,409 linear feet);

- Other (Non-HQ and EV) Waterbodies – Compared to the Baseline Route Alternative (89,539 linear feet), implementation of the above measures reduced impacts (by 50,817 linear feet, a 56.8 percent reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (38,722 linear feet); and
- Total Waterbodies – Compared to the Baseline Route Alternative (124,570 linear feet), implementation of the above measures reduced impacts (by 71,439 linear feet, a 57.3 percent reduction), resulting in significant cumulative reduction in impacts associated with the Proposed Route Alternative (53,131 linear feet).

COMMENT

5. 8.b.v – SPLP's primary reason regarding avoidance/minimization is co-locating within the existing ROW. In the Trenchless Feasibility Assessment, they define alternative routing for each wetland crossing, but then dismiss the alternative due to costs and logistics under one of the criteria of 105.18.a. Your alternatives analysis [Item 11, Enclosure E, Part 4 provides route alternatives to avoid wetland crossings but does not meet the requirements of 105.14(b)(7) justifying why route, or design alternatives cannot be used to avoid or minimize the adverse environmental impact. Your alternatives analysis does not demonstrate with reliable or convincing evidence that other less impacting alternatives are practicable in accordance with 105.18a(b)(3). You should further assess which wetland crossings of EV wetlands, can be avoided through trenchless technologies, and/or re-routing around the wetland. Include in this assessment the impacts of adjacent wetlands and waters and identify PNDI issues within the potential re-route. Provide an expanded alternative analysis which addresses these issues. [105.13(d)(1)(viii)]. Refer also to 105.18a(a)(3) or 105.18a(b)(3) for a definition of "practicable alternatives."

RESPONSE

The Alternatives Analysis does not state the "primary reason regarding avoidance/minimization is co-locating within the existing ROW". The Alternatives Analyses (see Response No. 4) presents a step-wise and incremental approach to Project development to avoid and minimize impacts to the environment and wetlands to the maximum extent practicable. In compliance with the Department's alternatives regulations, the end result of the above-described Project development process is a proposed Project that:

4) is "practicable" as it is "available and capable of being carried out after taking into consideration construction cost, existing technology and logistics";
5) does "not have other significant adverse effects *[impacts]* on the environment", on either a site-specific or cumulative basis; and
6) avoids ("would not involve a wetland") or minimizes ("would have less effect *[less adverse impact]* on the wetland") impacts to wetlands (and streams) to a degree that is practicable and such that remaining impacts to wetlands are temporary, minor, and not adverse (with the minor exception of 0.405 acre of PFO wetland cover type conversion that will be mitigated).

Furthermore, as previously noted, per § 105.18a(a)(3) for "Exceptional value wetlands" *[and § 105.18a(b)(3) states for "Other wetlands"]*, an **alternative must be "practicable"**, and "**An alternative is practicable if it is…capable of being carried out after taking into consideration construction cost, existing technology and logistics…**". Therefore, elimination of the use of trenchless construction techniques as a practicable alternative based solely on the justification of construction cost, or existing technology, or logistics (and/or any combination of these factors) is a valid determination in accordance with the Department's regulations. However, as demonstrated in the Alternatives Analysis, many of the dismissed alternatives were dismissed for a combination of factors, and did not rely on just one reason. Additionally, once determined to be not practicable, an alternative cannot be selected as the proposed alternative, and therefore is eliminated from further analysis.

In response to the Department's Technical Deficiency letter requests, SPLP added to the Alternatives Analysis a Trenchless Construction Feasibility Assessment (TCFA) and a Wetland-specific Practicable Alternatives Analysis (WSPAA), which are embodied in the MOC Process.

The TCFA addresses all "Crossing Areas" of wetlands (and associated streams within a given Crossing Area) where trenchless construction techniques are not proposed, and assesses the technical feasibility of such techniques along the proposed pipeline alignment (within the 200-foot-wide survey corridor). The TCFA demonstrates in writing that further avoidance or minimization of wetland (and associated stream) impacts by conventional bore or HDD technology was not selected due to (depending on the Crossing Area): 1) these methods being not technically feasible (based on current technology and/or logistics); or 2) if potentially technically feasible, provided a construction cost estimate for the subject trenchless construction technique. In the WPSAA, each Crossing Area is also assessed based on (and refers to) the results of the TCFA. The WPSAA demonstrates in writing that further avoidance or minimization of wetland (and associated stream) impacts by conventional bore or HDD technology was not selected due to (depending on the Crossing Area) these methods being: 1) not technically feasible (based on current technology and/or logistics), and/or 2) not practicable (based on current technology, logistics, and/or construction cost). As a result, the adoption of trenchless construction techniques at the subject Crossing Areas was not selected, and thus eliminated from further consideration as not practicable.

The WSPAA also addresses all Crossing Areas of wetlands (and associated streams within a given Crossing Area) where trenchless construction techniques are not proposed, and assesses the shortest potential minor route variation (that which deviates the shortest distance necessary from the proposed alignment to avoid delineated wetlands within the survey corridor, and thus is located either partially within or entirely outside the 200-foot-wide survey corridor) that potentially further avoids or minimizes wetland (and associated stream) impacts.

As demonstrated in writing in Section 5.0, *Consideration of Impacts Beyond Survey Corridor,* of the Alternatives Analysis, and in the WSPAA, minor route variations at the subject Crossing Areas were not selected **due to a combination of factors** (depending on the Crossing Area), including:

- Where an MOC-developed minor route variation was adopted, increased site-specific impacts to wetlands (or streams), and/or
- Where a minor route variation was not developed during the MOC Process, no confirmed reduced impacts on wetlands (or streams), and
- Regardless of whether potential further wetland impact avoidance or minimization is confirmed:
    - **Increased permanent, site-specific impacts to numerous other (non-wetland) environmental resources**, including (and/or):
        - Per one of the Top Recommendations of the Governor's Pipeline Infrastructure Task Force Report to co-locate pipelines with existing utility rights-of-way – existing development, communities, land availability, land encumbrance, land fragmentation, county comprehensive plans, etc.
        - Per the Department's regulations – all of the above, as well as natural resources, forest land, forest fragmentation, wildlife, migratory birds, etc.
    - Contribution to **significant permanent cumulative impacts** to other (non-wetland) environmental resources (see list above), and

- Suboptimal pipeline construction, suboptimal pipeline operation, and increased construction cost.

As a result, the adoption of minor route variations at the subject Crossing Areas was not selected due to a combination of factors, including: 1) the increased, permanent, and significant site-specific and/or cumulative impacts on numerous other (wetland and/or non-wetland) environmental resources, and 2) the resultant suboptimal pipeline construction, suboptimal pipeline operation, and increased construction cost.