

**Module S4**  
Mitigation Plan

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## MODULE S4 MITIGATION PLAN

### **S4.A            Individual Impact Areas and the Project as a Whole**

#### **S4.A.1 Identify and Describe Any Measures Take That Resulted in Avoiding Resource Impacts**

The Practicable Alternatives Analysis is located in Module S3.F. When the preferred route was selected, slight adjustments were made to the route in order to avoid resources. A list of the avoided resources is located in Table S3.F.2 located in Module S3.F.2.

#### **S4.A.2 Identify and Describe Any Measures Take that Resulted in Minimizing Unavoidable Resource Impacts**

Once the preferred route was selected and adjustments were made to avoid additional resources, there were still resources remaining that were going to be impacted. To mitigate for those, the LOD was reduced from 100 feet to 75 feet. Table S3.F.3 located in Module S3.F.3 lists these resources.

### **S4.B            Individual Impact Areas and the Project as a Whole**

#### **S4.B.1 Identify and describe any repair, rehabilitation, or restorative actions taken to rectify an impacted resource.**

Please refer to Requirement M for the Erosion and Sediment Control Plan drawings for visual representations of actions taken to rectify an impacted resource.

##### **S4.B.1(i) Provide specific details and plans outlining how impacted resources will be repaired.**

Reducing the ROW to only a 75-foot width of disturbance at resource crossings helps to minimize the amount of repair needed at each crossing.

Wetland topsoil layers will be segregated from trenched materials and other cleared topsoil. The wetland soils will then be replaced during ROW restoration. Additionally, resource impacts will be limited to being constructed within 48 hours and will follow the restoration plans identified in the erosion and sediment control plan details (Requirement M).

##### **S4.B.1(ii) Provide specific details and plans outlining how impacted resources will be rehabilitated.**

SPLC is restoring impacted resources to their pre-construction conditions. This in itself may result in resources becoming better quality than they were prior to construction; however, SPLC is not specifically setting out to rehabilitate any resources during post-construction restoration.

##### **S4.B.1(iii) Provide specific details and plans outlining how impacted resources will be restored.**

Wetland areas will be seeded with annual rye and mulched to allow for the wetland seed stock to reestablish. Lime, fertilizer, and erosion control blanketing will not be used in wetlands so as to not inhibit the regrowth of hydrophytic vegetation. Stream banks will be revegetated, have erosion control blankets installed within 50 feet of the stream, and rock will be installed on the banks where needed to ensure stabilization. If needed, rock vanes or other devices may be used to revegetate the stream and maintain a stable streambed. Riparian seed mixtures will be used so that revegetation occurs quickly.

#### **S4.B.2 Identify and discuss any proposed preservation and maintenance operations that will be taken to reduce or eliminate an impact during the life of the project.**

Conventional bore or HDD techniques will be utilized to reduce maintenance operations throughout the life of the project. The ROW above areas that will be crossed via conventional bore or HDD will not be cleared of vegetation for construction and will not be cleared or mowed during operation.

Although a 75- to 100-foot-wide construction ROW will be needed for the areas not crossed via conventional bore or HDD, only a 50 foot wide ROW will be maintained. Only areas within the permanent 50-foot-wide corridor will be mowed and kept clear of trees and shrubs. Areas outside of this permanent ROW will be allowed to return to pre-construction conditions.

**S4.C**            **Identify and describe any actions undertaken related to the following compensatory mitigation items**

**S4.C.1**           **Does the applicant propose to utilize an approved mitigation bank to provide all or a portion of the compensation?**

SPLC plans on utilizing an approved mitigation bank for of the compensation.

**S4.C.1(i)**            **Provide a reservation/commitment letter from a mitigation banker approved to operate within Pennsylvania.**

The reservation letter is located in Requirement T of this permit application.

**S4.C.2 Function/Values Compensation Discussion**

The proposed plans to compensate for the impacted wetland and riverine resources, as well as a discussion of how the affected functions identified in Module S3 will be offset by the compensation proposal is located Requirement T of this permit application.

**S4.C.3 Wetland Design Criteria Policy**

Plans to compensate for the impacted wetlands with respect to the Departments Wetland Design Criteria Policy, as well as mitigation ratios and performance standards are located in Requirement T of this permit application.

**S4.D**            **Monitoring Plans**

The monitoring plan is located in Requirement T of this permit application. The plan includes performance standards, recommended monitoring duration and timeframes, monitoring reports, monitoring requirements, data summarization, maps, plans, and conclusions. Additionally, it will include a Remedial Action/Adaptive Management Plan if necessary.



## Compensatory Mitigation Summary

Compensatory mitigation is required as a result of permanent and temporary wetland and watercourse impacts associated with the Shell Pipeline Company LP (SPLC or Permittee) Falcon Ethane Pipeline Project (Project). As outlined in Table 1: Mitigation Summary by State, resource impacts requiring mitigation are anticipated in Pennsylvania (PA), West Virginia (WV) and Ohio (OH).

Resource Environmental Solutions, LLC (RES) and its subsidiaries will facilitate all mitigation needs occurring in PA, WV and OH through a combined mitigation approach utilizing Mitigation Banks, In-Lieu Fee (ILF) Mitigation, and Permittee-Responsible Mitigation (PRM).

### PA Mitigation

First Pennsylvania Resource, LLC (FPR), a wholly-owned subsidiary of RES, will facilitate mitigation in PA. Pennsylvania resource impacts associated with the proposed Project will occur within the Upper Ohio-Beaver Watershed (8-Digit Hydrologic Unit Code (HUC) #05030101) of the Ohio River Subbasin (Watershed 20). Consistent with the *Compensatory Mitigation Final Rule* ("Final Rule"), which establishes mitigation credits as the preferred method of compensatory mitigation for impacts to aquatic resources of the U.S. (332.3(b)(2)), the Permittee first sought to purchase approved mitigation credits from a mitigation bank within the Ohio River Subbasin (Watershed 20) to compensate for the anticipated resource impacts resulting from the Project. The FPR sponsored and approved Enlow Fork Mitigation Bank (EFMB), (USACE Permit No.: LRP-2013-1108, PADEP Permit No.: MB990563-001) located in Washington County, PA and within the Ohio River Subbasin (Watershed 20), has a service territory that encompasses the Upper Ohio-Beaver Watershed. The EFMB currently has wetland and stream mitigation banking credits available to offset a portion of the mitigation needs associated with the proposed Project. As such, available mitigation bank credits at the EFMB will be utilized to offset permanent PEM wetland loss and ephemeral stream fill impacts occurring in PA as a result of the proposed Project. The draft commitment letter is provided as Requirement T.

With the mitigation bank debit utilized to offset the permanent PEM wetland loss impacts, the remaining EFMB credits will not cover the amount of mitigation needed to offset the remaining Project mitigation needs in PA. Due to this limited availability of wetland mitigation bank credits, and because no ILF programs are active within the Upper Ohio-Beaver Watershed, the PRM approach will be utilized to offset the remaining permanent and temporary wetland conversion impacts occurring in PA as a result of the proposed Project. The PRM will be located at FPR's Neshannock Creek Restoration Site located in Mercer County, PA, which is also located in the Ohio River Subbasin. The proposed PRM Plan is provided as Requirement T. The PRM Plan details the alternatives considered for completing compensatory mitigation, how the affected resources functions and values will be offset from the proposed compensation approach, and provides detailed discussions regarding maintenance and monitoring of the PRM Site to ensure that the performance standards, which are based on the attributes related to the wetland functions and ecological conditions and other objectives, are to be achieved.

### WV Mitigation

Environmental Banc & Exchange, LLC (EBX) will be the operating Bank Sponsor for mitigation in WV. To address permanent and temporary wetland conversion impacts requiring mitigation in WV, the Permittee is proposing to obtain wetland mitigation banking credits from the approved Cline Run Mitigation Bank (USACE Permit #LRH-2015-01000-OHR), located in Tyler and Richie Counties, WV and within the Little Muskingum-Middle Island Watershed (8-digit HUC #05030201).

Mitigation ratios proposed to offset impacts in WV, as shown in Table 1, are based on a combination of previous experience working in the region as well as with industry standards. FPR and the Permittee will coordinate directly with the regulating agencies during the permitting process to ensure that the



appropriate compensatory ratios are utilized to mitigate for the temporary and permanent PSS and PFO wetland conversion impacts.

### OH Mitigation

First Ohio Resource, LLC (FOHR), a wholly-owned subsidiary of RES, will facilitate mitigation in OH. The proposed Project alignment traverses the Tuscarawas (8-digit HUC #) and Upper Ohio Watersheds (8-digit HUCs 05040001 and 05030101, respectively) in Ohio. Permanent PSS and PFO wetland conversion impacts are anticipated in both watersheds as a result of the proposed Project. FPR will facilitate the use of the Streams + Wetlands Foundation ILF program of Ohio to compensate for the permanent PSS and PFO wetland conversion impacts. ILF credits are available in both watersheds. In Ohio, impact ratios are based on the wetland category, which is derived from the Ohio Rapid Assessment Method Version 5.0 (ORAM), on-site versus off-site mitigation and wetland Cowardian classification. No temporary PSS or PFO conversion impacts are anticipated, however, FPR and the Permittee understand that temporary impacts generally do not require mitigation, provided the impact area is restored within 5 years.

FPR and the Permittee will coordinate directly with the regulating agencies during the permitting process to ensure that the appropriate compensatory actions are taken to mitigate for the permanent PSS and PFO wetland conversion impacts.



Table 1 : Mitigation Summary by State								
State	Resource Type	Resource Class	Impact Type	Impact (Linear Feet / Acres)	Mitigation Ratio	Mitigation Need (Linear Feet / Acres)	RES Subsidiary & Mitigation Method	
PA	Watercourse	Ephemeral	Perm	53.58	1:1	53.58	FPR Enlow Fork Mitigation Bank	
			Perm <sup>1</sup>	0.06	1:1	0.06		
	Wetland	PSS	Perm	0.07	2:1	0.14		FPR
			Temp	0.54	1:1	0.54		Permittee-Responsible Mitigation
			Perm	0.10		0.31		
			PFO	0.11	3:1	0.33		
	<b>Total Watercourse</b>				<b>53.58</b>	<b>1:1</b>	<b>53.58</b>	
<b>Total Wetland</b>				<b>0.89<sup>1</sup></b>	<b>-</b>	<b>1.39<sup>1</sup></b>		
WV <sup>3</sup>	Wetland	PSS	Perm	0.07	1.5:1	0.10	EBX Cline Run Mitigation Bank	
			Temp <sup>3</sup>	0.05	-	0.00		
			Perm	0.10	2:1	0.19		
			Temp <sup>3</sup>	0.03	-	0.00		
			<b>Total Wetland</b>					<b>0.24<sup>1</sup></b>
OH	Wetland	PSS	Perm	1	0.04	1.5	0.06	FOHR In-Lieu Fee Program
				2	0.05	2	0.10	
				3	0.14	2.5	0.35	
				2	0.03	2.5	0.08	
				<b>Total Wetland</b>				

Notes:

1. All wetland impacts are considered conversion except those associated with the PEM permanent impacts occurring in PA, which are permanent loss.

2. Please note that the total wetland acreage impacts are correct. Due to aggregation per wetland type and rounding of each wetland acreage to



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the nearest tenth, rounding discrepancies of 0.01-acre occur.

3. Mitigation ratios proposed to offset impacts in WV, as shown in Table 1, are based on a combination of previous experience working in the region as well as with industry standards. It is anticipated that no mitigation beyond restoration of site conditions be required for temporary conversion impacts to PSS and PFO wetlands (or those residing outside the permanently maintained ROW) in WV.
4. There are no ORAM Category 1 or 2 PFO wetlands being permanently or temporarily impacted that would require mitigation.