



**Transcontinental Gas Pipe Line Company, LLC**

**Section 3-5 – Act 167 Consistency Verification Report**

**Regional Energy Access Expansion Project**

**April 2021**  
*(Revised July 2022)*

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## **1. Project Description**

Transco, indirectly owned by The Williams Companies, Inc. (Williams), is seeking authorization from the Federal Energy Regulatory Commission (FERC or Commission) under Section 7(c) of the Natural Gas Act and Part 157 of the Commission's regulations, to construct, own, operate, and maintain the proposed Project facilities. The Project is an expansion of Transco's existing natural gas transmission system that will enable Transco to provide an incremental 829,400 dekatherms per day (Dth/d) of year-round firm transportation capacity from the Marcellus Shale production area in northeastern Pennsylvania (PA) to multiple delivery points along Transco's Leidy Line in PA, Transco's mainline at the Station 210 Zone 6 Pooling Point<sup>1</sup> in Mercer County, New Jersey (NJ) and multiple delivery points in Transco's Zone 6 in NJ, PA, and Maryland (MD). The Project will consist of the following components:

- Approximately 22.2 miles of 30-inch-diameter pipeline partially collocated with Transco's Leidy Line A from milepost (MP) 0.00 to MP 22.32 in Luzerne County, PA (Regional Energy Lateral);
- Approximately 13.8 miles of 42-inch-diameter pipeline collocated with Transco's Leidy Line System from MP 43.72 to MP 57.50 in Monroe County, PA (Effort Loop);
- New electric motor driven compressor station identified as Compressor Station 201 with 9,000 nominal horsepower (HP) in Gloucester County, NJ;
- Addition of two gas-fired turbine driven compressor units with 31,800 nominal HP at International Organization for Standardization (ISO) conditions at existing Compressor Station 505 in Somerset County, NJ, to accommodate the abandonment and replacement of approximately 16,000 HP from eight existing internal combustion engine-driven compressor units and increase the certificated station compression by 15,800 HP;
- Addition of two gas-fired turbine driven compressor units with 63,742 nominal HP at ISO conditions and modification of three existing compressors at existing Compressor Station 515 in Luzerne County, PA to support the Project and to

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<sup>1</sup> A pooling point defines the aggregation of gas from multiple physical and/or virtual receipt points to a single physical or virtual point, and the disaggregation of gas from a single physical or virtual point to multiple physical and/or virtual delivery points.

accommodate the abandonment and replacement of approximately 17,000 HP from five existing gas-fired reciprocating engine driven compressors and increase the certificated station compression by 46,742 HP;

- Uprate and rewheel two existing electric motor-driven compressor units at existing Compressor Station 195 in York County, PA to increase the certificated station compression by 6,000 HP and accommodate the abandonment of two existing gas-fired reciprocating engine driven compressors which total approximately 8,000 HP of compression;
- Modifications at existing Compressor Station 200 in Chester County, PA;
- Uprate one existing electric motor-driven compressor unit at Compressor Station 207 in Middlesex County, NJ to increase the certificated station compression by 4,100 HP;
- Modifications to three (3) existing pipeline tie-ins in PA (Hildebrandt Tie-in, Lower Demunds Tie-in, and Carverton Tie-in);
- Addition of regulation controls at an existing valve setting on Transco's Mainline "A" in Bucks County, PA (Mainline A Regulator);
- Modifications at the existing Delaware River Regulator in Northampton County, PA;
- Modifications at the existing Centerville Regulator in Somerset County, NJ;
- Modifications to the existing valves and piping at the Princeton Junction (Station 210 Pooling Point) in Mercer County, NJ;
- Modifications to three (3) existing delivery meter stations in NJ (Camden M&R Station, Lawnside M&R Station, and Mt. Laurel M&R Station);
- Modifications to one (1) existing delivery meter station in MD (Beaver Dam M&R Station);
- Contractual changes (no modifications) at ten (10) existing delivery meter stations in PA and NJ (Algonquin-Centerville Meter Station, Post Road Meter Station, New Village Meter Station, Spruce Run Meter Station, Marcus Hook Meter Station, Ivyland Meter Station, Repaupo Meter Station, Morgan Meter Station, Lower Mud

Run Meter Station, and Chesterfield Meter Station);

- Additional ancillary facilities, such as mainline valves (MLVs), cathodic protection, communication facilities, and internal inspection device (e.g., pig) launchers and receivers in PA; and
- Existing, improved, and new access roads and contractor yards/staging areas in PA, NJ, and MD.

In an ongoing effort to reduce its air emissions footprint, Transco is assessing the replacement of vintage gas-fired reciprocating engine driven compressors with more efficient state-of-the-art gas-fired turbine driven compressors. The proposed compression abandonment and replacement scopes at Transco's existing Compressor Station 505 and Compressor Station 515 are part of this effort and have been adopted into the Project scope. Additionally, the uprate and optimization of existing electric motor-driven compression to accommodate abandonment of gas-fired reciprocating engine driven compression at Compressor Station 195 has also been adopted into the Project scope.

Subject to FERC's certification of the Project and receipt of the necessary permits and authorizations, Transco anticipates construction of the Project would commence in second quarter 2023 to meet a proposed in-service date in fourth quarter 2024.

Since there will be an increase in the impervious acreage at the site, Transco is required to prepare and implement Post-Construction Stormwater Management (PCSM) Plans. The PCSM Plans must be consistent with any local municipal Act 167 Plan. This report has been prepared to demonstrate consistency of the PCSM Plans with Act 167 Stormwater Management Plans for the individual sites within the project. This report covers the following sites:

1. Regional Energy Lateral Pipeline - MLV-515RA20
2. Regional Energy Lateral Pipeline - MLV-515RA30
3. Regional Energy Lateral Pipeline - Carverton Tie-in
4. Regional Energy Lateral Pipeline - Lower Demunds REL Tie-in
5. Regional Energy Lateral Pipeline – Hildebrandt Tie-in/MLV-515RA40
6. Effort Loop Pipeline - MLV-505LD86
7. Compressor Station 200
8. Compressor Station 515

## **2. Volume / Rate Control**

### **2.1. Regional Energy Lateral Pipeline - MLV-515RA20**

MLV-515RA20 project is located in Mill Creek Watershed, Bear Creek Township, Luzerne County, Pennsylvania. Luzerne County's Stormwater Management Ordinance (adopted on August 18, 2010) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.
2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.
    - 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

<https://www.luzernecounty.org/DocumentCenter/View/367/Luzerne-County-Stormwater-Management-Ordinance-PDF>

The HydroCAD model has been setup assuming that 20% of existing impervious area is meadow and all existing non-forested pervious areas were considered to be in meadow condition.

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct an infiltration berm to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume for 2-yr Rainfall event*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
3,470	4,093	2,689	-781

The following table summarized the pre- and post-construction peak discharges rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate and hence, the requirements of Luzerne County’s Act 167 Plan have been met.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.91	1.15	0.67	-0.24
2-year	1.35	1.64	0.97	-0.38
10-year	2.71	3.12	2.21	-0.50
25-year	3.81	4.29	3.48	-0.33
50-year	4.87	5.39	4.42	-0.45
100-year	6.15	6.72	6.01	-0.14

**2.2. Regional Energy Lateral Pipeline - MLV-515RA30**

MLV-515RA30 project is located in Susquehanna-Solomon Creek Watershed, Wyoming Borough, Luzerne County, Pennsylvania. Luzerne County’s Stormwater Management Ordinance (adopted on August 18, 2010) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.
2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.

- 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

(Source:<https://www.luzernecounty.org/DocumentCenter/View/367/Luzerne-County-Stormwater-Management-Ordinance-PDF>)

The HydroCAD model has been setup assuming that 20% of existing impervious area is meadow and all existing non-forested pervious areas were considered to be in meadow condition.

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct an infiltration berm to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cubic feet)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
1,040	1,520	0	-1,040

The following table summarized the pre- and post-construction peak discharges rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate and hence, the requirements of Luzerne County's Act 167 Plan have been met.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.28	0.48	0.00	-0.28
2-year	0.46	0.70	0.00	-0.46
10-year	1.01	1.35	0.00	-1.01
25-year	1.47	1.86	0.00	-1.47
50-year	1.93	2.35	0.00	-1.93
100-year	2.48	2.93	0.00	-2.48

### 2.3. Regional Energy Lateral Pipeline - Carverton Tie-in

Carverton Tie-in project is located in Abrahams Creek Watershed, West Wyoming Borough, Luzerne County, Pennsylvania. Luzerne County's Stormwater Management Ordinance (adopted on August 18, 2010) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge



rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.
    - 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

<https://www.luzernecounty.org/DocumentCenter/View/367/Luzerne-County-Stormwater-Management-Ordinance-PDF>

The HydroCAD model has been setup assuming that 20% of existing impervious area is meadow and all existing non-forested pervious areas were considered to be in meadow condition.

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will utilize an infiltration berm to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
1,164	1,801	0	-1,164

The following table summarized the pre- and post-construction peak discharges rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-

development peak runoff rate and hence, the requirements of Luzerne County’s Act 167 Plan have been met.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.49	0.76	0.00	-0.49
2-year	0.69	0.99	0.00	-0.69
10-year	1.27	1.64	0.00	-1.27
25-year	1.74	2.12	0.30	-1.44
50-year	2.17	2.56	1.47	-0.70
100-year	2.70	3.09	2.50	-0.20

**2.4. Regional Energy Lateral Pipeline - Lower Demunds REL Tie-in**

Lower Demunds REL Tie-in project is located in Toby Creek Watershed, Dallas Township, Luzerne County, Pennsylvania. Luzerne County’s Stormwater Management Ordinance (adopted on August 18, 2010) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.
2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.
    - 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

<https://www.luzernecounty.org/DocumentCenter/View/367/Luzerne-County-Stormwater-Management-Ordinance-PDF>

The HydroCAD model has been setup assuming that 20% of existing impervious area is

meadow and all existing non-forested pervious areas were considered to be in meadow condition.

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct a subsurface infiltration bed to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
795	1,865	345	-450

The following table summarized the pre- and post-construction peak discharge rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate and hence, the requirements of Luzerne County’s Act 167 Plan have been met. Runoff rates have been reduced by 40% of the pre-construction flow rates.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.15	0.55	0.09	-0.06
2-year	0.21	0.64	0.11	-0.10
10-year	0.40	0.95	0.16	-0.24
25-year	0.56	1.18	0.20	-0.36
50-year	0.71	1.40	0.24	-0.47
100-year	0.89	1.65	0.28	-0.61

**2.5. Regional Energy Lateral Pipeline - Hildebrandt Tie-in/MLV-515RA40**

The Hildebrandt Tie-in/MLV-515RA40 project is located in Toby Creek Watershed, Dallas Township, Luzerne County, Pennsylvania. Luzerne County’s Stormwater Management Ordinance (adopted on August 18, 2010) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise,

the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.
    - 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

(Source:<https://www.luzernecounty.org/DocumentCenter/View/367/Luzerne-County-Stormwater-Management-Ordinance-PDF>)

The HydroCAD model has been setup assuming that 20% of existing impervious area is meadow and all existing non-forested pervious areas were considered to be in meadow condition.

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct an infiltration bed to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
1,443	3,014	404	-1,039

The following table summarized the pre- and post-construction peak discharge rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate and hence, the requirements of Luzerne County’s Act 167 Plan have been met. Runoff rates have been reduced by 40% of the pre-construction flow rates.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.27	0.96	0.13	-0.14
2-year	0.38	1.15	0.18	-0.20

10-year	0.74	1.77	0.33	-0.41
25-year	1.03	2.23	0.44	-0.59
50-year	1.31	2.67	0.55	-0.76
100-year	1.64	3.19	0.73	-0.91

## 2.6. Effort Loop Pipeline - MLV-505LD86

The MLV-505LD86 project is located in Pohopoco Creek Watershed, Chestnut Hill Township, Monroe County, Pennsylvania. Monroe County has not developed an Act 167 Stormwater Management Plan for Pohopoco Creek Watershed (Source: <http://stormwaterpa.org/media/cumberland/act167basemap.pdf>). Therefore, it is subject to the requirements of item (g)(2) of PADEP Code Section 102.8, which states that:

Post-development discharge rates shall not exceed the predevelopment discharge rates for the, 2, 10, 50, and 100 year storms. If it is shown that the peak rates of discharge indicated by the post- development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 2-,10-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement. (Source: <http://www.stormwaterpa.org/assets/media/regulatory/363-0300-003.pdf>)

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct two infiltration berms, two subsurface infiltration beds, and an infiltration basin to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
15,164	18,697	12,352	-2,812

The following table summarized the pre- and post-construction peak discharges rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate for the required storms and hence, the requirements of PADEP Code Section 102.8 have been met.

*Pre- and Post-Construction Peak Discharge Rate DA-1*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.00	0.01	0.00	-0.00
2-year	0.01	0.07	0.00	-0.01
10-year	0.15	1.36	0.12	-0.03
25-year	0.83	3.57	0.71	-0.12
50-year	2.00	6.23	1.49	-0.51
100-year	3.90	10.01	3.87	-0.03

*Pre- and Post-Construction Peak Discharge Rate DA-2*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.38	1.06	0.28	-0.10
2-year	0.93	1.76	0.39	-0.54
10-year	3.22	4.01	2.07	-1.15
25-year	5.40	5.91	4.58	-0.82
50-year	7.61	7.75	6.11	-1.50
100-year	10.45	10.03	8.01	-2.44

*Pre- and Post-Construction Peak Discharge Rate DA-3*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	0.00	0.00	NA	-0.00
2-year	0.00	0.00	NA	-0.00
10-year	0.05	0.05	NA	-0.00
25-year	0.33	0.33	NA	-0.00
50-year	1.25	1.25	NA	-0.00
100-year	3.12	3.12	NA	-0.00

**2.7. Effort Loop Pipeline – Brodhead/McMichaels Act 167**

Portions of the project lie within the Brodhead/McMichaels Act 167 Plan area. These portions will not have any permanent improvements that will require stormwater management. All construction within the Brodhead/McMichaels Act 167 Plan area will be site restoration only.

**2.8. Compressor Station 200**

Compressor Station 200 project is located in Valley Creek Watershed, East Whiteland Township, Chester County, Pennsylvania. Chester County has developed an Act 167 Stormwater Management Plan for Valley Creek Watershed.

Valley Creek Stormwater Management Ordinance (adopted on February 04, 2011) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been

met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.
    - 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

(Source: [https://pa-chestercounty2.civicplus.com/DocumentCenter/View/6824/valleycreekwatershedstormwatermanagementplanjuly\\_30\\_2010amended\\_2-4-2011?bidId=](https://pa-chestercounty2.civicplus.com/DocumentCenter/View/6824/valleycreekwatershedstormwatermanagementplanjuly_30_2010amended_2-4-2011?bidId=) ).

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct an infiltration berm with a vegetated filter strip to mitigate the increase in volume and peak rates associated with impervious area construction.

The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
12,821	14,372	11,227	-1,594

The following table summarized the pre- and post-construction peak discharges rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate and hence, the requirements of Chester County’s Act 167 Plan have been met.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	2.19	2.62	1.33	-0.86
2-year	3.81	4.35	2.49	-1.32

10-year	8.95	9.71	6.29	-2.66
25-year	12.90	13.76	10.44	-2.46
50-year	14.88	15.78	11.98	-2.90
100-year	19.07	20.04	16.02	-3.05

**2.9. Compressor Station 515**

Compressor Station 515 project is located in Bear Creek Watershed, Buck Township, Luzerne County, Pennsylvania. Luzerne County’s Stormwater Management Ordinance (adopted on August 18, 2010) states that:

1. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.
2. For volume control,
  - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
  - b. For modeling purposes:
    - Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.
    - 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

<https://www.luzernecounty.org/DocumentCenter/View/367/Luzerne-County-Stormwater-Management-Ordinance-PDF>

The HydroCAD model has been setup assuming that 20% of existing impervious area is meadow and all existing non-forested pervious areas were considered to be in meadow condition.

An analysis of pre- and post-development stormwater runoff was performed for this project. The construction of various impermeable areas will increase the volume of stormwater runoff. Transco will construct an infiltration berm with a vegetated filter strip to mitigate the increase in volume and peak rates associated with impervious area construction.



The following table shows the net increase in volume between the pre- and post-development 2-year rainfall events.

*Pre- and Post-Construction Stormwater Volume*

Pre-construction (cf)	Post-construction before BMPs (cf)	Post-construction with BMPs (cf)	Net (cf)
25,269	39,014	21,255	-4,014

The following table summarized the pre- and post-construction peak discharge rates for the 1 through 100-year storm events. The post-development peak runoff rate is less than the pre-development peak runoff rate and hence, the requirements of Luzerne County’s Act 167 Plan have been met.

*Pre- and Post-Construction Peak Discharge Rate*

Storm Event	Pre-construction (cfs)	Post-construction before BMPs (cfs)	Post-construction with BMPs (cfs)	Net (cfs)
1-year	4.58	11.55	1.04	-3.54
2-year	6.19	14.31	2.55	-3.64
10-year	11.74	23.16	10.18	-1.56
25-year	16.10	29.76	15.89	-0.21
50-year	19.64	35.00	19.57	-0.07
100-year	24.34	41.89	24.23	-0.11

**3. Calculation Methodology**

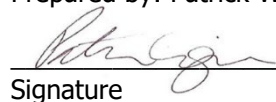
The PCSM Plan calculations for this project were prepared using HydroCAD software, which utilized the NRCS Rainfall-Runoff Methods. The 24-hour rainfall totals in Monroe, Luzerne, and Chester County from NOAA were used in the stormwater calculations.

**4. Summary**

BAI has reviewed the Act 167 Stormwater Management Plans and has prepared the PCSM plans to be consistent with applicable sections of the Stormwater Management Plans as outlined above.

*I do hereby certify that to the best of my knowledge, information, and belief, that the PCSM Plan prepared for the Regional Energy Access Expansion Project is consistent with the DEP Approved Act 167 Stormwater Management Plans.*

Prepared by: Patrick Wozinski – BAI Group

  
 Signature

