

INVENERGY 196



MASSACHUSETTS
100 Fifth Avenue, 5th Floor
Waltham, Massachusetts 02451
p +1 781.419.7696

RHODE ISLAND
10 Hemingway Drive, 2nd Floor
East Providence, Rhode Island 02915
p +1 401.434.5560

VIRGINIA
999 Waterside Drive, Suite 2525
Norfolk, Virginia 23510
p +1 757.777.3777

January 16, 2019

Rhode Island Energy Facilities Siting Board
89 Jefferson Boulevard
Warwick, Rhode Island 02888

**Re: Clear River Energy Center
Invenergy Docket No. SB-2015-06**

When Invenergy filed its application in October 2015, it proposed the construction of a new access road into the proposed Clear River Energy Center (“CREC”) facility. Since 2016, the Town of Burrillville and its experts have requested that CREC use the existing Spectra/Algonquin access road, identified as Algonquin Lane which is a private road owned by Spectra, now Enbridge. See May 11, 2016 Letter from Town Planner, T. Kravitz; Town Planning Board Advisory Opinion, “Requested EFSB Conditions of Approval,” page 20; June 16, 2016 CDR Maguire Letter regarding Master Plan drawing package, attached to the Town Planning Board Advisory Opinion, tab 4C, page 1 of the letter; August 9, 2016 CDR Maguire Letter regarding Data Request 1-1, attached to the Town Planning Board Advisory Opinion, tab 4E, page 3 of letter; Pre-Filed Direct Testimony of Coogan, page 2; Pre-Filed Direct Testimony of Jackson, page 1; Pre-Filed Direct Testimony of Zemba, page 2.

The Town’s traffic expert, Mr. Coogan, asserted that sharing an access road with Algonquin/Spectra “will be safer and require less clearing of environmentally sensitive areas.” See Pre-Filed Direct Testimony of Coogan, page 1. Mr. Coogan also noted that combining the access with the Algonquin/Spectra access road would “reduce the number of traffic conflict points in this section of the highway.” *Id.* at 7. Similarly, another Town expert, Mr. Jackson, recommended “the site layout be revised to reduce wetland impacts, including the reuse of the existing Spectra/Algonquin Access Road instead of the proposed new access road.” See Pre-Filed Direct Testimony of Jackson, page 1. Mr. Jackson also recommended “use of a shared access road with Spectra Energy/Algonquin that will reduce negative wetland impacts.” *Id.* at 4. Further, a third Town witness, Mr. Zemba, also indicated that CREC should reuse the existing Spectra/Algonquin access road, stating that it would “reduce wetland impacts.” See Pre-Filed Direct Testimony of Zemba, pages 8-9.

In an effort to accommodate these requests/recommendations, Invenergy repeatedly asked Spectra to agree on joint use of Algonquin Lane. Until recently, Spectra had indicated that it would not allow Invenergy to use Algonquin Lane during construction or operation, due to concerns regarding conflicts with its compressor station traffic. Invenergy persisted, and Enbridge/Spectra recently reconsidered its position, so long as a temporary access road was used during construction. Those discussions were not concluded until December 2018, when the parties reached agreement involving a new temporary access road that will only be used during construction and that area will then be restored, and shared access of Algonquin Lane post construction.

Below is a compilation of the input from the relevant experts describing the proposal with accompanying analysis on wetlands, biodiversity, stormwater and traffic.



Description of Change

In recognition of the need to maintain unencumbered daily and emergency access to the Algonquin Gas compressor station, a critical piece of infrastructure in the Northeast utility grid, while attempting to further avoid and minimize CREC impacts, Invenergy completed an analysis of conceptual alternatives to access the site during the construction phase with shared access along Algonquin Lane during the operational phase of both facilities. The analysis resulted in six alternatives being developed, with only one alternative remaining viable upon analysis by Invenergy and Enbridge representatives. Accordingly, Invenergy is advancing the design of a temporary construction access road immediately south of Algonquin Lane which will be removed post-construction, along with improvements to Algonquin Lane (minor widening and stormwater treatment) to allow shared access of Algonquin Lane following construction of the CREC.

Invenergy is proposing to construct a temporary 24-foot wide, two-lane construction access road approximately 175 feet south of the existing Algonquin Lane intersect with Wallum Lake Road. This temporary road would extend in a westerly direction to the northern limits of the proposed temporary construction staging area, where it would then turn north and west to parallel Algonquin Lane to access the northern limits of the power block. Following construction, the temporary access road would be removed and all portions of the roadway footprint will be restored to a forested condition (Exhibit A).

Access to the CREC during the operational phase would be via the shared access of Algonquin Lane. This will be accomplished by widening Algonquin Lane approximately 4 feet, resulting in two 12-foot travel lanes, for a total of 24 feet of pavement.

This alternative access concept was presented to the DEM Office of Water Resources' engineering and permitting staff as well as the ACOE on December 20, 2018. To comply with current State and local regulations, during the construction phase as well as the operational phase, a stormwater treatment system consisting of a forebay and vegetated wet swale would be constructed to provide treatment to approximately 90% of the paved construction access road. Following construction of the CREC, the stormwater treatment system would be repurposed to provide 100% treatment of the improved Algonquin Lane. Under current conditions there is no stormwater treatment along Algonquin Lane. Treated stormwater would ultimately discharge to the tributary of Iron Mine Brook. Pending design refinements, the intent is to utilize an existing curb cut on Algonquin Lane to provide maintenance access to stormwater treatment facility which has been located to avoid jurisdictional wetlands.

Benefits of Proposed Change

This proposed access road design modification would result in a reduction to jurisdictional wetland impacts (biological, perimeter and riverbank wetland) when compared to the original design. Below is a brief summary of the numerous benefits this alternative affords:

1. **Reduced Impacts** - The anticipated permanent impacts to biological wetland for the CREC would be substantially reduced for the revised access alternative. Actual wetland impacts are pending RIDEM review and acceptance of the delineated wetland edge as well as design refinements. Following the completion of the revised access alternative, the ACOE Mitigation Recommendation Table for the project will be updated.

It should be noted that during the development of the revised access alternative it was determined, through consultation with the ACOE, that the total mitigation recommendation of 25.9 and 184 acres in the form of restoration or preservation respectively was incorrectly calculated. Specifically, the analysis included all areas proximal to impact areas, including uplands. Per further direction from the ACOE, upland areas are non-jurisdictional, and therefore should not have been included in determining mitigation recommendations. Accordingly, the corrected mitigation recommendation in the form of restoration and preservation is 14.9 and 107 acres, respectively. As previously noted, the mitigation recommendation will be updated once the revised access alternative design is complete.

2. Proximity of Impacts – The proposed impacts associated with widening Algonquin Lane would occur generally in wetlands found at the toe of the existing fill associated with Algonquin Lane. The functions and values of these wetlands have been somewhat encumbered due to the presence of Algonquin Lane.

3. Low Road Profile – The proposed improvements to Algonquin Lane would retain the current low road profile to reflect existing conditions with traversable side slopes and not represent a potential barrier to wildlife movements. In contrast, the current access road requires the construction of substantial retaining walls along the majority of the roadway alignment. In addition, both the construction and operational phase access roads would be situated entirely outside of the wildlife corridor identified in the 2015 Wildlife Action Plan.

4. Onsite Wetland Restoration - The revised access alternative would allow for onsite restoration of roughly 11,000 square feet of forested wetland along with the stream by removing two culverts along the existing woods road which is the general alignment of the current access road. Furthermore, following the construction of the power block, the Algonquin Lane alternative would allow for the full restoration of the construction staging area and associated access.

5. Improved Stormwater Treatment – During construction, over 90% of construction stormwater would be collected and treated. During operation, the proposed widening of Algonquin Lane would provide stormwater quality and quantity treatment for 100% of both the new as well as existing impervious area. This is a significant improvement to existing conditions as there is currently no stormwater treatment along Algonquin Lane, and all stormwater is directed into the adjacent wetlands via paved swales found in multiple locations.

6. Traffic – An analysis of the site driveways under both the Construction Build and Final Build (operation) conditions, intersection capacity analyses, safety analyses, sight distance assessments, and a field evaluation were conducted to evaluate the traffic operations and safety conditions at the proposed site driveways (Exhibit B)

The analysis concluded the site driveways under both the 2023 Construction Build and 2023 Final Build conditions are expected to operate under capacity. The proposed driveways do not impede traffic operations on Wallum Lake Road or the surrounding street system.

The traffic analysis reveals that the shared driveway scenario is positive in terms of traffic operations and safety. The driveway will have adequate sight distance. There is not a history of crashes along this segment of Wallum Lake Road. The shared driveway reduces the number of conflict points along Wallum Lake Road



(Route 100), which is positive. The results of the evaluation found no fatal flaws associated with the shared driveway access and found only benefits to the driveway scenario.

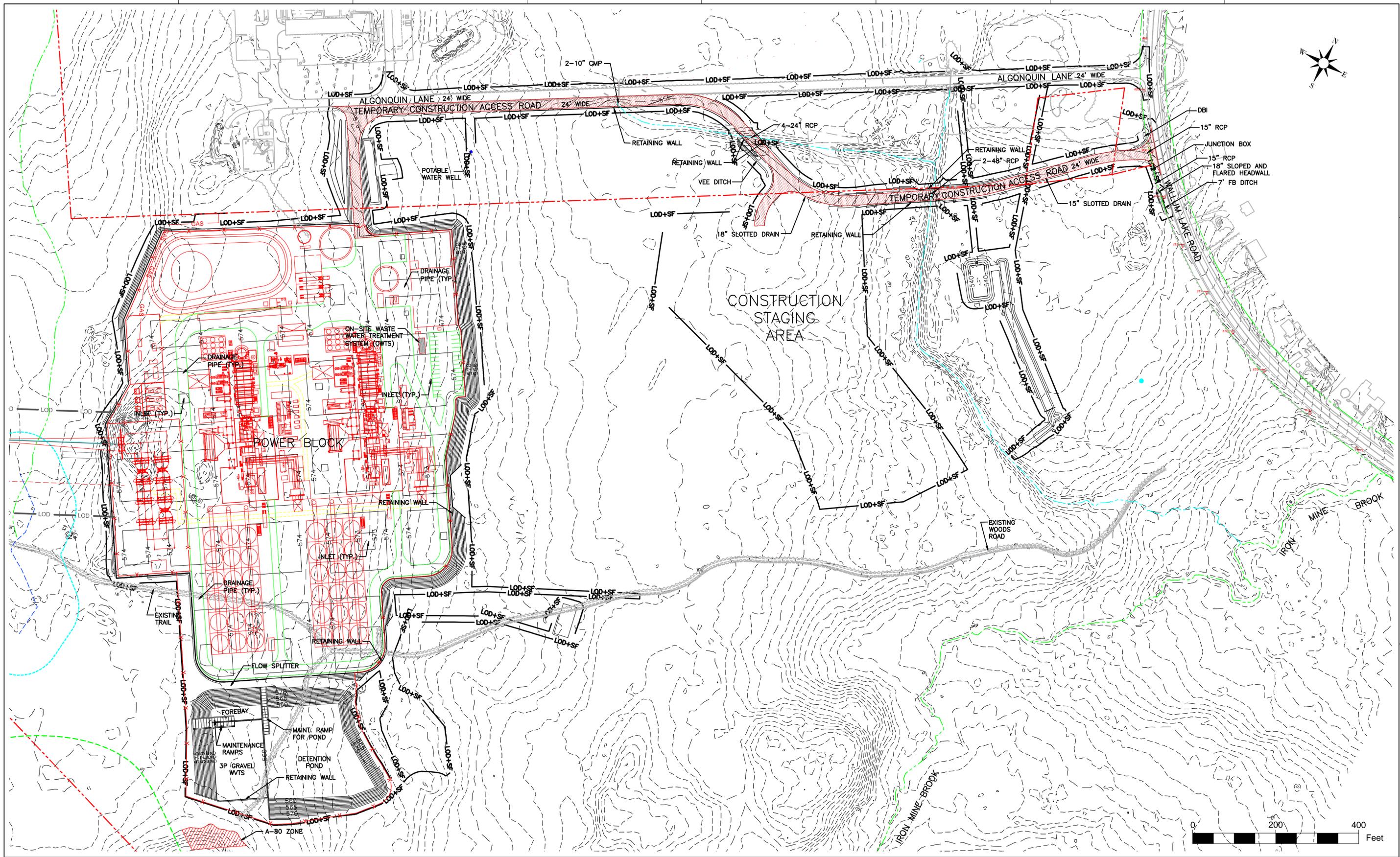
Schedule

During the December 20, 2018 meeting, DEM pointed out that a portion of the wetland delineation (east of the tributary to Iron Mine Brook as well as wetlands along both sides of Algonquin Lane) was not included in the previous edge verification. Accordingly, those missing wetland flags not previously verified have been reestablished in the field. These flags are being surveyed and will be sent to DEM for verification. Following verification, the revised access road design, including stormwater management, will be revised if necessary, at which time temporary and permanent wetland impacts as well as mitigation for the entire project will be updated. Once these tasks are complete, the Application to Alter under review by DEM will be updated/amended, likely in late-January 2019.

Attachments:

- **Exhibit A:** Proposed Alternative Construction Access Road
- **Exhibit B:** Traffic Analysis

EXHIBIT A



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PROJECT MANAGER C. JACOBS



ISSUE	DATE	DESCRIPTION

PROJECT NUMBER 10021318

CLEAR RIVER ENERGY LLC
 CLEAR RIVER ENERGY CENTER
 WALLUM LAKE ROAD LOT NO.
 135-002, 137-002, 137-003, 137-021,
 153-001, 153-002
 TOWN OF BURRILLVILLE,
 PROVIDENCE COUNTY, RHODE ISLAND

**PROPOSED ALTERNATIVE
 CONSTRUCTION ACCESS ROAD**

FILENAME EXHIBIT A.dwg
 SCALE 1" = 100'

SHEET
EXHIBIT A

EXHIBIT B

Traffic Analysis Summary for Shared Enbridge Driveway Clear River Energy Center – Burrillville, Rhode Island

McMahon Associates has evaluated the traffic impacts and benefits of providing one shared access for the existing Enbridge Energy Plant and the proposed Clear River Energy Center (CREC), located on Wallum Lake Road (Route 100) in Burrillville, Rhode Island. The evaluation considers two driveway scenarios; one to occur during the construction of CREC and one to occur after construction when CREC is operational.

Under the Construction Build conditions, vehicles accessing the proposed site will do so through the temporary construction access road, which is proposed to be located approximately 180 feet south of Algonquin Lane. Once construction is complete, traffic generated by the site will enter/exit through the existing driveway on Algonquin Lane. To analyze the site driveways under both the Construction Build and Final Build conditions, intersection capacity analyses, safety analyses, sight distance assessments, and a field evaluation were conducted to evaluate the traffic operations and safety conditions at the site driveways.

Future Conditions

The Final Traffic Impact Study for the CREC dated May 2016, projected the traffic volumes to a build year of 2021. Over the course of the project, the completion year has been extended to 2023. Therefore, the 2018 traffic volumes at the intersection of Wallum Lake Road (Route 100) and Algonquin Lane were projected over a five-year study horizon to future-year 2023, to reflect this update. [Although the counts conducted in 2016 for the Final Traffic Impact Study indicate an annual growth rate less than 0.5% when compared to the counts collected in 2018,] a 1.0% per year growth rate was applied to present a conservative analysis and remain consistent with the Final Traffic Impact Study for the CREC dated May 2016.

Two conditions were reviewed for the future conditions for the CREC Facility, including the peak construction under the 2023 Construction Build conditions, as well as for the shared use of Algonquin Lane under the 2023 Final Build conditions, in which the expected trips for the proposed CREC facility were added to Algonquin Lane for the shared driveway. Trip generation data from the Final Traffic Impact Study, dated May 2016, was utilized and the information was supplemented using the revised oil-fired event trip generation analysis presented in the Revised Water Supply Plan. The expected trip generation for the 2023 Construction Build and 2023 Final Build conditions are summarized below in Tables 1 and 2, respectively.

Table 1
CREC Construction Conditions Trip Generation Summary

<u>Description</u>	<u>Weekday AM</u>			<u>Weekday PM</u>		
	<u>Peak Hour</u>			<u>Peak Hour</u>		
	<u>In</u>	<u>Out</u>	<u>Total</u>	<u>In</u>	<u>Out</u>	<u>Total</u>
FNTP Construction Vehicles ⁽¹⁾	18	18	36	18	18	36
FNTP Staff and Craft Employees ⁽¹⁾	<u>401</u>	<u>0</u>	<u>401</u>	<u>21</u>	<u>401</u>	<u>422</u>
Total Trips FNTP Construction Phase	419	18	437	39	419	458

(1) Expected peak construction generation of facility based on final TIS dated May 2016

Under the peak construction phase operating conditions for the proposed CREC development, the site is expected to generate a total of 437 new trips (419 entering, 18 exiting) during the weekday morning peak hour and 458 new trips (39 entering, 419 exiting) during the weekday afternoon peak hour.

Table 2
CREC Final Conditions Trip Generation Summary

<u>Description</u>	<u>Weekday AM</u>			<u>Weekday PM</u>		
	<u>Peak Hour</u>			<u>Peak Hour</u>		
	<u>In</u>	<u>Out</u>	<u>Total</u>	<u>In</u>	<u>Out</u>	<u>Total</u>
Proposed CREC Staff ⁽¹⁾	22	3	25	3	22	25
Proposed Oil Delivery Trucks ⁽²⁾	<u>3</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>6</u>
Total Final Build Trips	25	6	31	6	25	31

(1) Expected employment of facility based on final TIS dated May 2016

(2) Based on Revised Water Supply Plan, Appendix E, dated January 10, 2017

Under final operating conditions for the proposed CREC development, the site is expected to generate a total of 31 new trips (25 entering, 6 exiting) during the weekday morning peak hour and 31 new trips (6 entering, 25 exiting) during the weekday afternoon peak hour.

To determine the 2023 Construction Build and 2023 Final Build volumes, the trips presented in Tables 1 and 2 were added to the surrounding roadway network based on the distribution patterns presented in the Final Traffic Impact Study, dated May 2016. Under the 2023 Construction Build conditions, all of the construction vehicles expected to be generated by the site were assigned to access the site through the temporary construction driveway. Under the 2023 Final Build conditions, all trips expected to be generated by the proposed site were assigned to the shared Algonquin Lane driveway.

Traffic Operations Analysis

Intersection capacity analyses were conducted using Synchro capacity analysis software for the study area intersection to evaluate the 2023 Construction Build and 2023 Final Build peak hour traffic conditions. This analysis is based on procedures contained in the 2010 Highway Capacity Manual (HCM). Based on the traffic counts, the weekday morning peak hour of the proposed facility, under both build conditions, occurs between 7:00 AM and 8:00 AM and the weekday afternoon peak hour occurs between 3:15 PM and 4:15 PM. The overall results of the intersection capacity analyses under the 2023 Construction Build and 2023 Build conditions are presented in Table 3 below.

**Table 3
Peak Hour Intersection Capacity Analysis Results**

Weekday Morning Peak Hour														
Intersection	Movement		2018 Existing			2023 No Build			2023 Construction Build			2023 Final Build		
			LOS ¹	Delay ²	V/C ³	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Wallum Lake Road at Algonquin Lane	EB	TR	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
	WB	LT	A	0.4	0.01	A	0.4	0.01	A	0.4	0.00	A	2.0	0.03
	NB	LR	B	10.0	0.01	B	10.1	0.01	B	10.3	0.00	A	9.8	0.01
Wallum Lake Road at Temporary Construction Driveway	EB	TR	n/a	n/a	n/a	n/a	n/a	n/a	A	0.0	0.00	n/a	n/a	n/a
	WB	LT	n/a	n/a	n/a	n/a	n/a	n/a	A	7.5	0.36	n/a	n/a	n/a
	NB	LR	n/a	n/a	n/a	n/a	n/a	n/a	B	12.6	0.05	n/a	n/a	n/a
Weekday Afternoon Peak Hour														
Intersection	Movement		2018 Existing			2023 No Build			2023 Construction Build			2023 Final Build		
			LOS ¹	Delay ²	V/C ³	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Wallum Lake Road at Algonquin Lane	EB	TR	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
	WB	LT	A	0.0	0.00	A	0.0	0.01	A	0.0	0.00	A	0.5	0.10
	NB	LR	A	9.2	0.00	A	9.3	0.01	A	9.4	0.01	A	9.6	0.40
Wallum Lake Road at Temporary Construction Driveway	EB	TR	n/a	n/a	n/a	n/a	n/a	n/a	A	0.0	0.00	n/a	n/a	n/a
	WB	LT	n/a	n/a	n/a	n/a	n/a	n/a	A	2.5	0.04	n/a	n/a	n/a
	NB	LR	n/a	n/a	n/a	n/a	n/a	n/a	D	33.3	0.65	n/a	n/a	n/a

1 Level-of-Service

2 Average vehicle delay in seconds

3 Volume to capacity ratio

n/a Not Applicable

2023 Construction Build

As shown in Table 3, the temporary construction driveway is expected to operate at LOS B during the weekday morning peak hour and LOS D during the weekday afternoon peak hour. The additional through traffic on Wallum Lake Road (Route 100) does not affect the operations at Algonquin Lane, as a majority of the construction vehicles will be accessing the site from the east. Algonquin Lane is expected to operate at a LOS A under the 2023 Construction Build conditions during both the weekday morning and weekday afternoon peak hours. All through traffic on Wallum Lake Road (Route 100) is expected to operate at a LOS A.

2023 Final Build

Under the 2023 Final Build conditions, the shared access on Algonquin Lane is expected to operate at LOS A during both the weekday morning and weekday afternoon peak hours. All through traffic on Wallum Lake Road (Route 100) is expected to operate at LOS A during both peak hours analyzed.

Site Circulation

Safety Analysis

Crash reports from the Town of Burrillville Police Department were reviewed, as presented in the Final Traffic Impact Study, dated May 2016, for a three-year period (May 2013 to May 2016¹). During this three-year period, there were no reported crashes at the location of the temporary construction driveway, or at the intersection of Wallum Lake Road (Route 100) and Algonquin Lane. The crash analysis did not reveal a safety concern along Wallum Lake Road (Route 100) in the vicinity of the site driveways. Under the 2023 Final Build condition with the proposed shared driveway, the number of curb cuts and conflict points along Wallum Lake Road (Route 100) is reduced. Given that the shared driveway is projected to operate well and that there are no safety concerns along this stretch of roadway, the shared access scenario is preferred to a scenario in which Enbridge and CREC have separate driveways.

Sight Distance

A field review of the available sight distances was conducted for the proposed construction site driveway as well as on Algonquin Lane at their respective intersections with Wallum Lake Road (Route 100). The posted speed limit on Wallum Lake Road (Route 100) is 40 mph while the measured 85th percentile speeds are 46 mph in both the eastbound and westbound directions.

The American Association of State Highway and Transportation Officials' (AASHTO) publication, *A Policy on Geometric Design, 2011 Edition*, defines minimum sight distances at intersections. The minimum sight distance is based on the required stopping sight distance (SSD) for vehicles traveling along the main road. According to AASHTO, "If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient time to anticipate and avoid collisions." The following table summarizes the available sight distances at the temporary construction driveway and Algonquin Lane for the proposed shared driveway

1 – To further evaluate the safety along Wallum Lake Road, additional crash data at the proposed construction driveway and Algonquin Lane for 2016 and 2018 was requested from the Town of Burrillville Police Department on January 14, 2019. Although this data was not available at the time of this memo, it is expected that it will be included in the testimony.

Table 4
Sight Distance Requirements

Intersection	Direction	85 th percentile Speed ¹	SSD Required ² (ft)	Sight Distance Measured (ft)	Meets Requirements
Construction Driveway at Wallum Lake Road	Looking Left (West)	46	375	500+	Yes
	Looking Right (East)	46	375	500+	Yes
Algonquin Lane at Wallum Lake Road	Looking Left (West)	46	375	472	Yes
	Looking Right (East)	46	375	443	Yes

1 Based on 85th percentile speeds

2 Based on AASHTO requirements for stopping sight distance (see AASHTO Equation 3-2).

As shown in Table 4, the sight distance looking in both directions along Wallum Lake Road (Route 100) at each of the proposed site driveways exceeds the SSD requirements for the 85th percentile speeds.

Conclusions

As shown in the capacity analysis results, the site driveways under both the 2023 Construction Build and 2023 Final Build conditions are expected to operate under capacity and at a LOS C or better during both peak hours analyzed. The driveways do not impede traffic operations on Wallum Lake Road or the surrounding street system. Based on the field review, the available sight distance along Wallum Lake Road (Route 100) exceeds the AASHTO recommended sight distance for the 85th percentile speeds of 46 mph, at both the temporary construction driveway location and the shared driveway on Algonquin Road. Based on the crash history, there were no reported crashes over the three-year period analyzed in the vicinity of the temporary construction driveway or Algonquin Lane.

The traffic analysis reveals that the shared driveway scenario is positive in terms of traffic operations and safety. The driveway operates at good levels of service and has adequate sight distance. There is not a history of crashes along this segment of Wallum Lake Road. The shared driveway reduces the number of conflict points along Wallum Lake Road (Route 100), which is positive. The results of the evaluation found no fatal flaws associated with the shared driveway access and found only benefits to the driveway scenario.