

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's :
APPLICATION TO CONSTRUCT THE : DOCKET No. SB-2015-06
CLEAR RIVER ENERGY CENTER IN :
BURRILLVILLE, RHODE ISLAND :

DIRECT TESTIMONY OF JAMES W. COOGAN, P.E.
ON BEHALF OF THE TOWN OF BURRILLVILLE

1 **SUMMARY - TESTIMONY OF JAMES W. COOGAN, PE**

2
3 **QUALIFICATIONS:**

4 My name is James W. Coogan; I am a Professional Engineer registered in the State of
5 Rhode Island with 38 years of experience developing and designing highway and traffic
6 improvements.

7
8 **PURPOSE OF TESTIMONY:**

9 As part of the project technical review team for the Town of Burrillville, I am testifying
10 about the traffic issues relating to the proposed Clear Water Energy Center (CREC).

11
12 **SUMMARY OF FINDINGS:**

13 **Traffic Impacts:** The proposed development will have significant temporary construction-
14 phase impacts to the Pascoag Village area, but the “final” traffic volumes will represent a
15 minimal increase on local roads.

16 **Road Damage Restoration:** The construction phase traffic is likely to cause pavement
17 deterioration, which the proponent must restore as needed.

18 **Site Access:** Access Management should be supported at this site. A shared driveway will
19 be safer and require less clearing of environmentally sensitive areas.

20 **Intersection Operations:** The intersections of Pascoag Main Road with Church Street and
21 with South Main Road will both experience deteriorated operations during construction,
22 but will be negligibly affected by the final operations traffic.

1 **Hazards:** The large trucks used to service the facility, during construction and final
2 operation, present hazards operating on the Town's narrow, winding roads.

3

4 **SUMMARY OF RECOMMENDATIONS:**

5 The traffic hazards presented by the construction of the proposed facility can be avoided if the
6 Energy Facilities Siting Board does not approve this application. However, if the application is
7 approved, then I recommend that the approval be conditioned as follows:

8 • CREC must restore any deteriorated pavement and any damaged structures along the
9 primary travel routes at the conclusion of the construction phase.

10 • CREC should utilize the existing Algonquin driveway, not the proposed new road.

11 • CREC must, at its own expense, widen the northeast corner of the intersection of Pascoag
12 Main Street and Church Street and address other lane encroachment hazards.

13

14

1 **Q. Please state your name and business address.**

2 A. My name is James W. Coogan. My business address is 225 Chapman Street, Providence,
3 Rhode Island 02905.

4

5 **Q. Mr. Coogan, by whom are you currently employed and in what capacity?**

6 A. I am employed by CDR Maguire Inc. as a Highway and Traffic Engineer and Project
7 Manager.

8

9 **Q. Please describe your educational background and your professional experience.**

10 A. I received my Bachelor of Science in Civil Engineering (BSCE) in 1977 from Rensselaer
11 Polytechnic Institute. I am a registered Professional Engineer in the State of Rhode Island
12 as well as in the State of Florida and the Commonwealth of Massachusetts. I have been
13 involved in highway and traffic design in Rhode Island for over 38 years.

14

15 **Q. What are your technical specialties?**

16 A. My primary responsibilities are road design, traffic signal design, traffic studies, and peer
17 reviews, mostly for state and municipal clients.

18

19 **Q. Have you ever testified as an expert witness before any court or administrative body?
20 If so, what was the nature of your testimony?**

21 A. I have testified before planning boards and zoning boards in a variety of communities in
22 Rhode Island and Massachusetts. These appearances have mostly been in a peer review

1 role, reviewing traffic impact studies and design plans on behalf of municipal boards and
2 agencies.

3

4 **Q. What is the purpose of your testimony today?**

5 A. I am here to comment on traffic issues relating to the proposed Clear River Energy Center
6 (CREC).

7

8 **Q. What materials have you reviewed in this matter?**

9 A. I have reviewed the “Final Traffic Impact Study for the Clear River Energy Center,
10 Wallum Lake Road, Burrillville, Rhode Island” May 2016, as well as its accompanying
11 appendices. I also reviewed “Invenergy Clear River Energy Center Intersection Review,
12 Church Street at Main Street, Pascoag, RI” (undated).

13

14

1 TRAFFIC IMPACTS

2

3 **Q. Please summarize your evaluation of the impacts of the proposed CREC within your**
4 **area of expertise.**

5 A. Per the Traffic Impact Study, upon completion, the Clear River Energy Center will
6 generate a relatively modest amount of new traffic, less than 40 vehicles per hour at peak
7 hours. This will have a negligible effect on traffic at the proposed driveway location, and
8 on the roads and intersections of Pascoag.

9

10 However, the construction period, which is projected to last about three years, will
11 reportedly bring more significant traffic increases, as many as **450 vehicles per hour** at PM
12 peak hours during one phase. These volumes will cause adverse impacts with regard to
13 traffic queues and delays on Church Street and Main Street.

14

15 **Q. Would the construction phase site-generated traffic be 450 vehicles per hour for the**
16 **entire construction period?**

17 A. No. Per the Traffic Impact Study, this would occur during the “busiest” Construction
18 Phase, referenced in the impact study as the underground work phase of the Full Notice to
19 Proceed phase. The Full Notice to Proceed phase is expected to last over 6 months.

20

21

1 ROAD DAMAGE RESTORATION

2

3 **Q. Will these elevated construction traffic volumes cause damage to Town roads?**

4 A. Yes, in all likelihood, the additional site-related trips over a three year period will cause
5 some pavement deterioration, a possibility acknowledged in the final paragraph of
6 Appendix A of the Traffic Impact Study. That discussion goes on to state the proponent's
7 commitment to the appropriate level of restoration to those areas deteriorated beyond what
8 would normally be expected. Note that "expectations" will need to be defined, and this
9 restoration commitment should be incorporated as a condition of any Energy Facility Siting
10 Board (EFSB) permit for the CREC .

11

12 SITE ACCESS

13

14 **Q. How would you characterize the operation of the proposed new site driveway during**
15 **the Construction Phase?**

16 A. As I noted before, as many as 450 vehicles per hour will be reportedly accessing the site at
17 PM Peak hour, about double the current traffic volumes on Wallum Lake Road. Existing
18 traffic volumes on Wallum Lake Road are low enough so that this construction traffic
19 turning onto and off of Wallum Lake Road will cause minimal delays for existing traffic.

20

21 **Q. Will this proposed site driveway affect the operations of the driveway leading to the**
22 **adjacent Algonquin facility?**

1 A. No, not noticeably. We do however, strongly recommend “access management” at this
2 site. Specifically, this would involve combining access to the existing Algonquin site and
3 the proposed Clear River site into one driveway, in this case the existing driveway. This
4 would reduce the number of traffic conflict points in this section of highway.
5

6 INTERSECTION OPERATIONS

7
8 **Q. What effect will the peak construction phase traffic have on the intersection of**
9 **Pascoag Main Street and South Main Street?**

10 A. The west and south legs of this intersection (Pascoag Main Street and South Main Street,
11 respectively) represent the “thru” path of Route 100, and will experience the greatest
12 increase in traffic.
13

14 The northbound approach to the intersection will experience a large increase in left-turning
15 traffic. This left-turn movement is serviced by a narrow exclusive left-turn lane operating
16 under control of a stop sign. The increase will cause substantial delays and longer queues
17 which could affect right-turning traffic as well.
18

19 Unfortunately, large trucks executing either of these two movements will track into
20 opposing lanes, creating a hazard.
21

22 We note that the Study Traffic Impact Study’s graphics and Capacity analyses seem to
23 have inexplicably assigned all the site-generated trips at this intersection to these two legs,

1 assuming no site-generated traffic to/from points east. These trip assignments are contrary
2 to the Trip Distribution and Assignment discussion in the Traffic Impact Study, which
3 estimated as many as 40% of employee (non-truck) trips would be to or from points east of
4 this intersection.

5
6 **Q. What effect will the peak construction phase traffic have on the intersection of**
7 **Pascoag Main Street and Church Street?**

8 A. The east and north legs of this intersection (Pascoag Main Street and Church Street,
9 respectively) represent the “thru” path of Route 100, and will experience almost all of the
10 intersection’s projected increase in traffic.

11
12 The southbound approach to the intersection is a single lane and will experience a large
13 increase in left-turning traffic. The approach lane operates under control of a stop sign.
14 The traffic increase will cause substantial delays and longer queues for southbound traffic,
15 including the thru and right-turning traffic.

16
17 Unfortunately, larger trucks currently can manage both westbound right turns and
18 southbound left turns only by substantially encroaching into oncoming travel lanes,
19 creating a hazard. This will become more problematic as the traffic on those lanes
20 increases during the construction phase.

21
22 **Q. What measures, if any, are proposed by the proponent to address these “problematic”**
23 **turning movements?**

1 A. In their report, “Invenergy Clear River Energy Center Intersection Review, Church Street
2 at Main Street, Pascoag, RI” the proponent suggests a minor right-of-way acquisition and
3 road widening on the northeast corner of the Church Street intersection (undated). This
4 would alleviate eastbound right-turning trucks encroaching into opposing lanes on Church
5 Street. We recommend that this upgrade, at the expense of CREC, be incorporated as a
6 condition of any EFSB permit for the CREC.

7

8 **Q. Do you agree with the proponent’s proposed mitigation?**

9 A. We agree that this addresses the lane encroachment of the eastbound right-turning truck
10 traffic at the Church Street intersection. However, left unaddressed are similar, if less
11 severe, lane encroachments for southbound left-turning truck traffic at Church Street, and
12 eastbound right-turning and northbound left-turning truck traffic at South Main Street. We
13 recommend that CREC be required to address these problems as well, as a condition of any
14 approval.

15

16

CONSIDERATION OF TOWN DOCUMENTS

17

18 **Q. Have you reviewed any other materials addressing the Traffic Impact Study?**

19 A. I’ve reviewed an August 1, 2017 Memorandum written to Burrillville Chief of Police
20 Colonel Stephen J. Lynch, prepared by Sergeant William Lacey. The memo addressed
21 safety and enforcement issues with the increase in truck volumes during the construction
22 phase of the project. A copy is attached to my testimony as Exhibit 1.

23

1 **Q. What concerns were expressed in this Memorandum?**

2 A. The Police Department presented a summary discussion of the state and local regulations
3 for Commercial Motor Vehicles (CMVs), including a discussion of fines for exceeding
4 weight and height requirements, ranging from less than a hundred to several thousands of
5 dollars per violation. The report briefly noted additional police resources and equipment
6 would be necessary for the increased enforcement resources.

7

8 **Q. Did the report address the encroachment of larger turning trucks into opposing**
9 **lanes?**

10 A. The memorandum noted with certainty that larger trucks turning or even just following the
11 road alignment in certain spots would encroach over the center of the road into opposing
12 lanes. These dangerous lane encroachments are not limited to the two Pascoag Main Road
13 intersections, but occur at multiple locations along the tightly turning path of Route 100.
14 This is a safety concern, as well as in some cases a violation of Rhode Island General
15 Laws.

16

17 The condition is exacerbated by winter conditions, when road shoulders and even portions
18 of travel lanes are inundated by snow, leaving even less available pavement for these
19 turning and driving maneuvers.

20

21 **Q. Do you concur with the concerns expressed in the Memorandum?**

22 A. Yes. The safety concerns of turning vehicles encroaching into opposing lanes is consistent
23 with my opinion. The frequency of violations of the Height and Weight Restrictions

1 cannot be readily predicted. However, the turning movements of even trucks fully
2 compliant with those height and weight regulations are virtually certain to produce the
3 delays and hazards resulting from encroachment into opposing lanes. The delays would
4 clearly affect response times of emergency vehicles using this corridor.

5

6 **Q. Do you agree with the processes and conclusions of the Invenergy Reports?**

7 A. The trip generation element of the processes seems reasonable.

8

9 However, the assignment of these trips to the road network seems inconsistent. The
10 designer's data indicated that 40% of the employee traffic would be to/from points east of
11 Pascoag Village. However, the construction-phase trip distribution (to be applied to a
12 considerably larger site-generated traffic volume of employee trips) assumes none of those
13 trips to/from the east. Even excluding site-generated truck traffic, there appear to be
14 hundreds of staff and craft employee trips to be considered for assignment.

15

16 We agree with the designer's capacity analyses (notwithstanding the trip assignment
17 question above), which indicate degraded levels of service in the village during
18 construction, but negligible effects during final operations.

19

20

CONCLUSIONS AND RECOMMENDATIONS

21

22 **Q. What are your Conclusions and Recommendations?**

1 A. The traffic problems and hazards that the plant would generate would be eliminated if the
2 EFSB does not permit the facility. However, if the EFSB approves the proposed project,
3 we strongly recommend that the EFSB impose the following conditions:

- 4 • CREC must restore any deteriorated pavement and any damaged structures along
5 the primary travel routes at the conclusion of the construction phase.
- 6 • CREC should utilize the existing Algonquin driveway, not the proposed new
7 road.
- 8 • CREC must, at its own expense, widen the northeast corner of the intersection of
9 Pascoag Main Street and Church Street and address the other unaddressed lane
10 encroachment hazards that I have identified.

11

12 **Q. Are the opinions you have expressed in your testimony based upon your education,**
13 **training, experience and the materials you have reviewed to prepare for this**
14 **testimony, and are those opinions all based upon a reasonable degree of certainty or**
15 **probability in your fields of expertise?**

16 A. Yes.

17

18 **Q. Does this conclude your testimony?**

19 A. Yes.



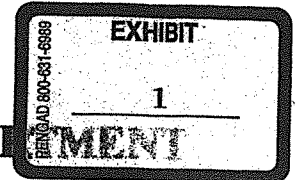
Colonel Stephen J. Lynch
Chief of Police

BURRILLVILLE POLICE DEPARTMENT

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MEMORANDUM

TO: Colonel Stephen J. Lynch
Chief of Police

FROM: Sergeant William Lacey

DATE: August 1, 2017

SUBJECT: Proposed Clear River Energy Center - Large Commercial Motor Vehicle Issues

This memo is to inform you of the issues surrounding the capacity of the village of Pascoag to handle the possibility of large commercial motor vehicle (CMV) traffic heading north and southbound on Route 100 to the proposed Clear River Energy site off of Algonquin Lane.

It appears most of the large CMV traffic would be accessing the Town of Burrillville off of Route 44, heading north on Route 100 eventually entering the Town just north of the Route 98 split. The CMV traffic would then have to make a left hand turn onto High St. at the High St. and South Main St. intersection. CMV traffic would then cross over a small bridge over the Union Pond spillway, then make a right hand turn onto Church St., while still staying on Route 100. Route 100, in the Town of Burrillville, is made up of South Main St., High St., Church St., and Wallum Lake Rd. The CMV traffic would then have to travel 3.2 miles from the High St. and Church St. intersection until it reaches Algonquin Ln. CMV traffic leaving the facility would then have to leave and return on the same route to access Route 44.

Several factors are in play which would cause traffic hazards throughout the planned route. CMV size and weights are regulated through the United States Dept. of Transportation's (USDOT) Federal Motor Carrier Safety Administration (FMCSA) branch.

The limit on the width of a CMV is set at 102.36 inches which is equivalent to roughly 8 and ½ feet. Any CMV which is wider would need to apply with the state for a special permit. Under RIGL 31-25-3, the maximum width is set at 8 and ½ feet as well. With most CMV's at the allowable width of 8 and ½ feet

and along the proposed route of Route 100 some area's lane of travel are as small as 10 feet, this can be a safety hazard to both the truck and motoring public travelling in the opposite lane.

The FMCSA does not have a standard maximum height, instead it leaves the maximum height limits with each state and this ranges from 13 and ½ to 14 feet. RI, under RIGL 31-25-4, sets a maximum height at 13 and ½ feet. Violations of both these state statutes are an \$85 pay by mail. With no bridges along the proposed travel route, height will not be an issue.

The FMCSA does not set a maximum length of a truck-tractor, semi-trailer combination unit and leaves that discretion to the states. Under RIGL 31-25-6, RI does not set a maximum length limit; however it does set a maximum length on a trailer, attached to a truck-tractor, at 53 feet in length. The law also states that any trailer which exceeds 48 and ½ feet can only be operated on the Interstate highway system and must receive permission from the Director of the RIDOT to operate on any other roads. Route 100 is not part of the Interstate Highway System instead is part of the RI State Highway system. A violation of this state statute is a \$500 fine. Rhode Island does allow some trucks which were in operation prior to 1982 to be "grandfathered" in size. Many of the CMV's which will be travelling along the proposed route will be at the allowable maximum length. This will be a cause for concern as these trucks will need to cross the center lane to make turns and navigate several curves in the roadway. CMV's will need to cross the center lane of travel at the South Main and High St. intersection and the Church St. and High St. intersection as well. As trucks navigate the curve in front of the Berean Baptist Church on Church St. and the near 90 degree curve near Serio's Pizza on Church St., the length and radius of these curves will force the rear end of the trailers into the opposite lanes of travel. Due to the length of many of the CMV's which will be travelling in town, violations of RIGL 31-15-3, Operating Left of Center, will be a frequent occurrence. Violations of this section are an \$85 fine.

Most of RI Title 31, Chapter 25, will cover size, weight, and load limits which will be applicable when citing operators of CMV's. I've previously stated above the fines associated with width, height, and length. Now I will discuss weight fines and how the State of RI would cite violators. Small CMV's, registered for less than 10,000 lbs. would be fined \$85 per 1,000 lbs. overweight or portion of it. For instance if a small CMV registered for 10,000 lbs. is found to be weighing 15,500 lbs. rounding this up would put the vehicle at 6,000 lbs. overweight, $85 \times 6 = 510$ so the company would receive a \$510 fine for being overweight. A CMV registered for over 10,000 lbs. would receive a fine of \$125 per 1,000 lbs. overweight or portion of it. Typically you will see many truck-tractors, semi-trailer combination units registered for 88,000 lbs. If a truck registered for 88,000 lbs. is found to be weighing 95,000 lbs. $7 \times 125 = 875$, the company would receive a fine of \$875. Large CMV's registered for over 104,800 lbs., which the Town of Burrillville would see an increase in traffic of from the power plant, are fined at \$1,025 per 1,000 lbs. overweight. If a water truck coming into town to service the proposed power plant is found to weigh 110,000 lbs. $6 \times 1025 = 6150$, the company would face a fine over \$6,000. Fines for weight restrictions are pay by mail to the Rhode Island Traffic Tribunal.

Since most of the trucks coming to the plant would be localized, I do not believe any of the drivers will have maximum driving time issues.

RIGL 31-16-2, Manner of Turning at Intersections speaks to how vehicles will turn at intersections. Right hand turns "shall be made as close as practicable to the right-hand curb or edge of the roadway." With the extreme turning radiuses of these large commercial motor vehicles, many trucks will be unable to "hug" the curb or edge of the roadway causing an issue for traffic in the opposite lane of travel. Left hand turns "shall be made in that portion of the right half of the roadway nearest the center line of it

and as by passing to the right of the center line where it enters the intersection..." Violations of this section are an \$85 fine.

Another issue which would be a seasonal cause of concern is the amount of snow the Town of Burrillville receives and the efforts of the RIDOT to clear the roadway of the snow. The removal of snow to the sides of the roadway will further diminish lane widths along the proposed route as trucks make the left hand turn onto High St. from South Main St., then as trucks turn right onto Church St. This will lengthen the turn radius large commercial vehicles need as the lane widths narrow. With small lanes of travel in this area of Pascoag as it is, this will be a cause of concern for the motoring public in opposite lanes of travel.

Fire and EMS personnel may also see a potential for delay as large commercial motor vehicle's traverse the center of Pascoag in route to the proposed Power Plant location on Wallum Lake Road. Alternate routes may have to be looked at which will further delay emergency response to certain locations.

For the most part it, in my opinion, appears large CMV's will have a difficult time navigating the nearly 1 mile stretch of road from the South Main and High St. intersection, to the curve near Serio's Pizza. With the small lanes of travel almost every commercial vehicle which will pass through the area will have to violate traffic laws to navigate these intersections. Turning at intersections will require long Commercial Motor Vehicles to have to widen their turn radius causing them to cross the center lines. Some may choose to cut the corner of the turn causing the rear end of the Commercial Motor Vehicle to go up on the sidewalk.

Through my experience of travelling this area on a daily basis and in my capacity as a certified Commercial Enforcement officer I've observed CMV's regularly violating the traffic laws to make the turns and navigate the roadways. Laned roadway violations will be a common occurrence as these trucks will need to navigate very small lanes of travel. Size and weight issues will need to be addressed, although these will only be able to done through a commercial motor vehicle inspection, which can only be done by a nationally certified Commercial Motor Inspector, such as me. To ensure compliance with weight restrictions, scales will need to be purchased and made available to the Town of Burrillville commercial motor vehicle inspector.

I hope this memo addresses the concerns we spoke about last week. If any further information is needed, please don't hesitate to contact me.

Respectfully submitted,

Sgt. William Lacey