

TOWN OF NORWICH  
DEVELOPMENT REVIEW BOARD  
AGENDA  
Thursday, September 3, 2020  
7:00 PM

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Act 92 OML compliant meeting in response to covid-19 will be conducted via ZOOM.

ZOOM Access Information:

Topic: Development Review Board

Time: September 3, 2020 07:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/87163560901>

Meeting ID: 871 6356 0901

888 475 4499 US Toll-free

877 853 5257 US Toll-free

1. Call to Order, Roll Call
2. Approve Agenda
3. Public Comments & Announcements
4. Continuation of Public Hearing:
  - a. #29BCU20 Conditional Use and Site Plan Review for a Daycare and a Cultural Facility (school) with apartment. Tiny Seeds Village, LLC. applicant and landowner of Lot 11-093.000 at 251 US Route 5N. Application to be reviewed under the Norwich Zoning Regulations.

5. Adjournment

Future Meeting: TBD

DRB Minutes available at: <http://norwich.vt.us/development-review-board-minutes/>

*To receive copies of Town agendas and minutes, please send an email request to be added to the town email list to the Town Manager's Assistant at: [manager-assistant@norwich.vt.us](mailto:manager-assistant@norwich.vt.us).*

**Subject:** Re: Confirming attendance for the 251 Rte 5 site visit August 26

**From:** stan teeter <teeterstan@gmail.com>

**Date:** 8/26/2020, 1:31 AM

**To:** Don McCabe <don-mccabe@comcast.net>

**CC:** Rod Francis <norwichvtplanner@gmail.com>, arline rotman <arliner@gmail.com>, "johnjean.lawe@gmail.com" <johnjean.lawe@gmail.com>, "johnncarroll.43@gmail.com" <johnncarroll.43@gmail.com>, "melindastucker@gmail.com" <melindastucker@gmail.com>, "richardlstucker@gmail.com" <richardlstucker@gmail.com>, Comcast <Susanpitiger@comcast.net>, Matt Stuart <Tigertownfarm@gmail.com>, Pam Mullen <PMullen@norwich.vt.us>, Nate Stearns <nate@hcsmlaw.com>

Rod

I have a conflicting appointment and will be unable to attend the planned site visit. I visited the site on Tuesday, 8/25/2020 and wish to report the following:

The driveway entrance at 251 US Rt 5 North will be difficult to improve because of the steepness of the terrain to the west of Rt 5. I believe there is real concern that a vehicle could slide down the driveway and on to Rt 5. I suggest that the applicant be asked to show how the driveway entrance meets the town requirements and/or what needs to be done to the driveway entrance to meet the requirements.

Stan

On Tue, Aug 25, 2020 at 7:11 PM Don McCabe <[don-mccabe@comcast.net](mailto:don-mccabe@comcast.net)> wrote:

Rod,

Just confirming that I did not participate in the last DRB hearing so will not be attending the site visit.

Don

Sent from my iPad

On Aug 25, 2020, at 5:20 PM, Rod Francis <[norwichvtplanner@gmail.com](mailto:norwichvtplanner@gmail.com)> wrote:

DRB,

Those of you who participated in the hearing and intend to do the site visit please confirm your intention to attend.

We will convene at 3:00pm at the top of the driveway.

We will observe recommended practices of social distancing, including wearing face masks.

I expect that there will be representatives of the applicants available to provide answers

to questions pertinent to the application of the relevant sections of the Norwich Zoning Regulations.

Please let Pam know if you need any printed information that she can make available for pick up on the rear porch of Tracy Hall.

If you did not participate in the hearing but wish to attend the site visit please let me know.

Thank you

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Rod Francis  
Director, Planning & Zoning  
Town of Norwich, VT

Town of Norwich  
Development Review Board

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Site Visit: 251 Route 5  
 Date: August 26, 2020  
 DRB Present: Stucker, Pitiger, Rotman, Carroll, Lawe.  
 Staff: Francis  
 Public: Nate Stearns, Jeff Goodrich, Laura Golnabi, Alberto Rdz

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#	Questions posed by DRB	Answers (Applicants, Jeff Goodrich for applicants)
1	Is there a snow storage plan for the parking area?	Push to the north and west of the parking area
2	How do you propose to accommodate event parking and overloads?	Goodrich 4 Corners driveway is long enough to accommodate 25-30 vehicles. There is also a flat area near the barn
3	Have you given thought to a one-way loop?	It is possible that the two driveways with access to Goodrich 4 corners could form a 1-way loop (for safety reasons cars passing through campus s not ideal)
4	Leaving site and heading North are there visibility issues?	Vegetation needs to be cut back and regularly maintained
5	Do the existing light fixtures prevent light being cast upward or directly out?	Not sure, came with the property, nothing is visible from raid or neighbors
6	How steep is the paved driveway?	572ft long and 14.2% slope
7	How steep is the Goodrich 4 corner driveway?	First 80ft is 12.5% then all in the range of 7 to 9% or less
8	How many external light fixtures are there?	1 in garden adjacent to steps, 1 motion activated above double garage doors (western elevation of house) 1 next to human door at parking lot level 1 double spot focused on house (western elevation, under eaves at 2 <sup>nd</sup> fl. level) 2 on northern elevation of house 1 on barn

# MEMO

**TO:** Nate Stearns

**FROM:** Austin Feula, PE, PTOE

**DATE:** September 1, 2020

**SUBJECT:** Tiny Seeds Norwich Traffic Support

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RSG has completed an initial traffic assessment of the proposed Tiny Seeds Village project at 251 US-5 in Norwich, VT. This memo documents the estimated trip generation and safety of the existing access associated with the proposed facility.

This traffic assessment includes the following sections:

1. Project Parameters
2. Roadway Characteristics
3. Trip Generation Estimate
4. Safety
  - a. Sight Distance
  - b. Crash Data

In summary, we anticipate the operation of the proposed Tiny Seeds Village to generate fewer than 75 trips in any hour and will not cause or exacerbate unsafe conditions on the local roadway network. Following VTrans Traffic Impact Study guidelines, we recommend that no further traffic analysis is warranted.

## 1.0 PROJECT PARAMETERS

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The project proposes to convert an existing residential property to a child day care and preschool/kindergarten facility. Details are as follows:

- Up to 35 children a day and 8 staff members for the preschool and kindergarten with operating hours from 8:30 AM to 5:00 PM.
- Up to 30 children a day and 8 staff members for the child day care with operating hours from 7:30 AM to 6:30 PM.
- The preschool and kindergarten space will be located within the main house and occupy approximately 3,690 square feet.

- The child day care space will be located within the pool house and occupy approximately 1,232 square feet.
- Drop-offs are schedule in specific 20-minute windows between 7:00 AM and 9:30 AM
- Pick-ups are schedule in specific 20-minute windows between 2:30 PM and 6:00 PM

**FIGURE 1: GENERAL LOCATION OF THE PROPOSED TINY SEEDS VILLAGE IN NORWICH, VT**



## 2.0 ROADWAY CHARACTERISTICS

The section of US-5 proximate to the proposed site access is a two-lane roadway (one lane in each direction) with a posted speed limit of 50 miles per hour. In 2019, VTrans recorded an annual average daily traffic volume (AADT) of 1,412 vehicles per day along US-5 at station Y031, approximately 3 miles north of the project access. A vehicle classification count performed on September 17, 2014 found that approximately 7% vehicles are trucks at this location.



The posted speed limit along US-5 proximate to the project location is 50 MPH in both directions.

### 3.0 TRIP GENERATION

Trip generation refers to the number of new vehicle trips originating at or destined for a development. To estimate the number of new vehicle trips for the Tiny Seeds Village, we examined trip generation rates presented in the Institute of Transportation Engineer's Trip Generation Manual 10<sup>th</sup> Edition. Applying trip generation rates for ITE Land Use 565 (Day Care Center)<sup>1</sup>, we calculate the proposed Tiny Seeds Village will generate approximately 51 new vehicle trips during both the AM and PM peak hours.

**TABLE 1: TRIP GENERATION ESTIMATES**

INDEPENDENT VARIABLE	SIZE	WEEKDAY AM PEAK HOUR *	WEEKDAY PM PEAK HOUR
Students	65	51 (27 / 24)	51 (24 / 27)

*\* Numbers inside parenthesis represent entering and exiting volumes (enter / exit)*

Additionally, if all 65 students were dropped-off between 7:00 AM and 9:30 AM in individual vehicles there would be a total of 130 vehicle trips in two and a half hours. Assuming a consistent rate of arrivals, this would result in 52 vehicle trips per hour. This is likely a conservative estimate as some vehicles would have more than one student.

#### 3.1 RECOMMENDED GEOGRAPHIC AND SCENARIO SCOPE

VTrans guidelines specify that a traffic study should be considered if the proposed development will generate 75 or more peak hour trips. The geographic scope of the study should also include the immediate access points and those intersections or highway segments receiving 75 or more project-generated peak hour trips.<sup>2</sup>

As demonstrated above, the proposed development of the Tiny Seeds Village is estimated to generate 51 peak hour vehicle trips based ITE Land Use 565. Following VTrans guidelines, we recommend that no further analysis of traffic operations is necessary.

<sup>1</sup> While the Kindergarten use could be classified as Land Use 534 (Private School K-8) given the context of the site, Land Use 565 was utilized for the entire facility.

<sup>2</sup> Vermont Agency of Transportation, Policy and Planning Division, Development Review and Permitting Services, *Traffic Impact Study Guidelines* (April 2019).

## 4.0 SAFETY

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### 4.1 SIGHT DISTANCE

As defined in the 2018 publication *A Policy on Geometric Design of Highways and Streets*, from the American Association of State Highway and Transportation Officials (AASHTO), sight distance is the “the length of roadway ahead that is visible to the driver.”<sup>3</sup> Sight distances of sufficient length are necessary at all points along a roadway to ensure vehicles can safely stop or avoid colliding with potential obstructions or other vehicles on the roadway.

Standard practice in assessing intersection safety and operations involves measuring two separate sight distances – **stopping sight distance** and **intersection sight distance**.

**Stopping sight distance** is the visible distance along a roadway between an advancing motorist and a potential obstacle in the roadway. It is measured from a point representing the approaching driver’s eye and a point representing an obstacle in the roadway.<sup>4</sup> Stopping sight distances of adequate length are needed along all roadways, both at and away from intersections, so that drivers travelling at design speeds can react to potential obstacles and safely brake to avoid collisions. Design minimum stopping sight distances are calculated based on factors such as design speed, response times, and grades as reported in the *2018 Policy on Geometric Design of Highways and Streets*.<sup>5</sup>

**Intersection sight distance** is the distance available along the major road travelled way corresponding with the maximum visibility between an advancing motorist on the major road and an entering motorist on an intersecting minor road. It is measured between a point representing the advancing driver’s eye above the major road and a point representing the entering driver’s eye above the intersecting road.<sup>6</sup>

The *2018 Policy on Geometric Design of Highways and Streets* states that the available intersection sight distance should be at least equal to the required stopping sight distance along the major road.

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<sup>3</sup> American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-2.

<sup>4</sup> As noted in the 2018 Policy on Geometric Design of Highways and Streets (page 3-15), the height of the driver’s eye is assumed to be 3.5’ above the road surface and the height of a potential obstacle is 2.0’ above the road surface.

<sup>5</sup> American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-5 to 3-6.

<sup>6</sup> As noted in the 2018 Policy on Geometric Design of Highways and Streets (page 3-16), the height of the driver’s eye of the approaching vehicle is assumed to be 3.5’ above the road surface of the major road and the height of the driver’s eye of the entering vehicle is assumed to 3.5’ above the minor road surface. The decision point offset from the travel way varies with sight conditions (page 9-38); in this case we assume the decision point is 14.5-feet from the travel way.





*“Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to decide when to enter the intersecting highway or to cross it. 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 sight distance to anticipate and avoid collisions.”*

However, when possible it is desirable to have intersection sight distances that exceed the design minimum stopping sight distances to offer improved operations, such that major road traffic need not decelerate to accommodate entering traffic.

*“However, in some cases a major-road vehicle may need to stop or slow to accommodate the maneuver by a minor road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.”*

Based on the 50 MPH posted speed limit and level grade along US-5 in the project area, the design minimum intersection sight distance for turning traffic is 480 feet to the north and 555 feet to the south. The design minimum stopping sight distance is 425 feet.

We reviewed sight distances at the existing site drive access. Stopping sight distance exceeded 600 feet looking south from the site drive access. Looking north from the site drive access the stopping sight distance was limited to 390 feet due to a crest vertical curve. Stopping sight distance returned at 800 feet until disappearing again at 1,200 feet north of the site drive access due to a horizontal curve.

Figure 2 was taken at the site drive access from 2.0 feet above the road surface at the edge of the travelled way. This photo shows that sight distances are lost between approximately 390 and 800 feet from the site drive due to a dip in the roadway. A sedan is shown in the photo approximately 500 feet north of the site drive access. While the roof of the vehicle never fully disappears, within the dip the required 3.5-foot height is lost between 390 and 800 feet.

Figure 3 was taken at the site drive access from 2.0 feet above the road surface looking south and shows adequate stopping sight distance.

**FIGURE 2: SIGHT DISTANCE FROM EXISTING DRIVEWAY TO THE NORTH**



**FIGURE 3: SIGHT DISTANCE FROM EXISTING DRIVEWAY TO THE SOUTH**



Intersection sight distance looking north from the site drive access is greater than 1,000 feet. Intersection sight distance is substantially greater than stopping sight distance as it





measures to the height of a driver's eye (3.5 feet) versus the height of a potential object in the roadway (2.0 feet) and due to the grade of the site driveway.

Intersection sight distance looking south from the site driveway is approximately 450 feet. With additional trimming of vegetation intersection sight distance would exceed the desired 555 feet.

The intersection sight distance views (14.5 feet from travelled way and 3.5 feet above roadway surface) are shown below in Figure 4 and Figure 5.

**FIGURE 4: INTERSECTION SIGHT DISTANCE FROM EXISTING DRIVEWAY TO THE NORTH**



**FIGURE 5: INTERSECTION SIGHT DISTANCE FROM EXISTING DRIVEWAY TO THE SOUTH**



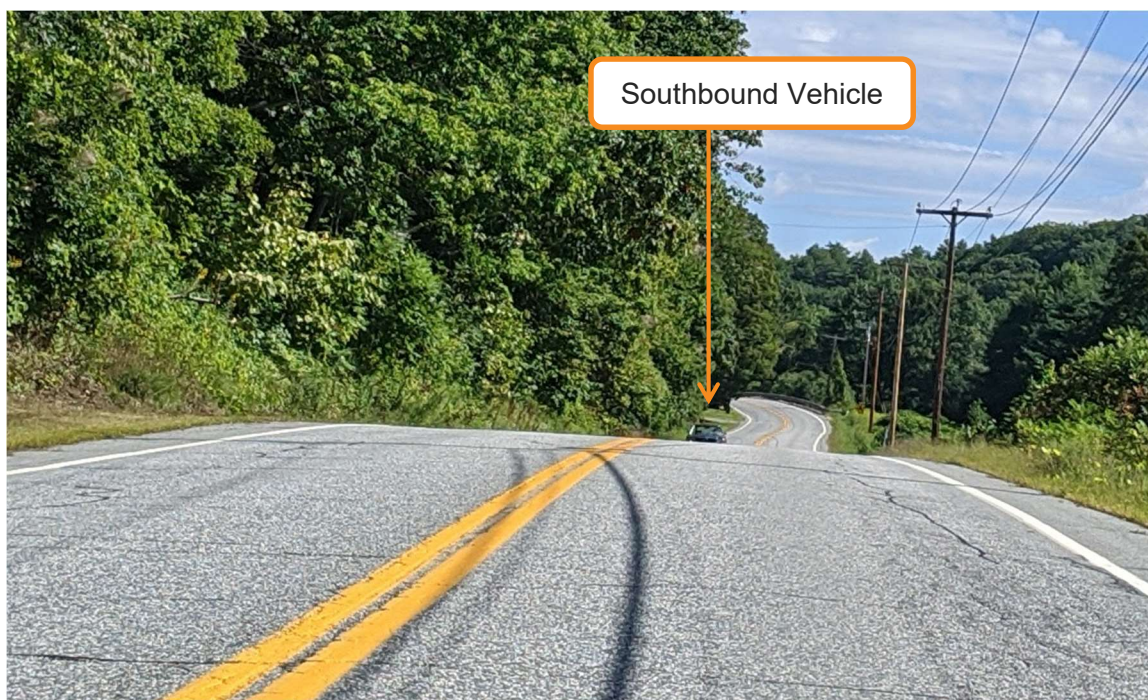
Additionally, intersection sight distance was measured for the northbound left-turn movement. Based on the 50 MPH posted speed limit the design minimum intersection sight distance for this movement is 405 feet. The intersection sight distance for this movement is greater than 1,000 feet. From the turning location, the sight line between driver's eyes is maintained throughout the crest vertical curve.

Figure 6 was taken from the height of a left-turning driver's eye looking north. The oncoming vehicle maintains visibility throughout the crest vertical curve.





**FIGURE 6: INTERSECTION SIGHT DISTANCE FROM NORTHBOUND LEFT-TURN**



The 2018 *Policy on Geometric Design of Highways and Streets* states that in many cases existing deficiencies in stopping sight distance may not need to be addressed.

*“The stopping sight distance criteria in Tables 3-1 and 3-2 are appropriate for use in new construction projects where no constraints are present, since stopping sight distances that meet those criteria can typically be readily implemented. Sight distance improvements for projects on existing roads are often very costly. Recent research has found little or no difference in crash experience between crest vertical curves that meet stopping sight distance criteria in Tables 3-1 and 3-2 and those that do not, except where a design feature where drivers may need to change direction or speed is hidden from the driver’s view. Therefore, in most cases, design elements at which the stopping sight distance is less than shown in Tables 3-1 and 3-2 may be left in place. However, where a roadway feature such as a horizontal curve, and intersection, a driveway, or a ramp terminal is hidden from the driver’s view by the sight distance limitation or where a crash history review as part of the project development process finds a documented crash pattern that may be correctable by a sight distance improvement, improvement of stopping sight distance to the criteria presented in Tables 3-1 and 3-2 should be considered.”<sup>7</sup>*

While stopping sight distance is restricted north of the site driveway, intersection sight distance criteria are exceeded. Sight lines are maintained between drivers along US-5

<sup>7</sup> American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-7.

and vehicles entering and exiting the proposed development. Drivers exiting the site driveway will be able to safely wait outside of the US-5 travelled way before entering and enter without impeding US-5 traffic.

Snowbanks and vegetation should be maintained to minimize restrictions to intersection sight distance.

With proper maintenance of intersection sight lines, the limited stopping sight distance is not expected to adversely affect safety at the site driveway.

## **4.2 CRASH DATA**

RSG reviewed the VTrans 2012 to 2016 High Crash Location Report. There are no high crash sections or intersections within ¼ mile of the existing site driveway. The nearest high crash locations are:

- US-5 MM 1.2 to 1.5, approximately 1.7 miles south of the site drive
- US-5 MM 5.3 to 5.6, approximately 2.1 miles north of the site drive

VTrans maintains a statewide database of all reported crashes along all state highways and federal aid road segments RSG compiled available crash incidents reported by VTrans within ¼ mile north and south of the existing site driveway from January 1, 2015 through December 31, 2019. We identified three crashes along US-5 in this period:

- Crash ID 16NW00935; single vehicle crash; Goodrich Four Corners intersection; September 3, 2016 at 9:23 AM, property damage only
- Crash ID 18NW00714; single vehicle crash; Goodrich Four Corners intersection; July 9, 2018 at 10:09 PM, injury
- Crash ID 16NW00214; ~1,100 feet north of site drive; March 5, 2016 at 7:10 PM, property damage only

There is no apparent crash pattern within these three crashes near the site driveway. Additionally, no existing safety hazards were observed in the field.