Garofalo & Associates, Inc.
Consulting Engineers
Surveyors ♦ Land Planners

RE: **Traffic & Transportation Assessment**
CHARIHO REGIONAL ELEMENTARY SCHOOL
Charlestown Elementary School Site
363 Carolina Back Road, Charlestown, RI 02813

GAI PN 7481-01
DATE: August, 2026

Introduction

Garofalo & Associates Inc. (Garofalo) has prepared this Assessment at the request of the S/L/A/M Collaborative in connection with its Rhode Island Department of Education Stage II evaluation of the new Chariho Regional School District facilities at the Charlestown Elementary School site, located on Carolina Back Road (Route 112), in Charlestown. The property currently includes a single school building with a number of smaller utility structures. The project generally includes razing the existing school building(s) and construction of a new PreK-5 campus with new site improvements. The Charlestown Elementary School (Charlestown ES) presently has an enrollment of 251 students and a staff of approximately 40 employees which is expected to increase to 1195 students and 95 employees under the redevelopment program.

Existing Conditions



The Charlestown ES is located on Carolina Back Road immediately south of Old Shannock Road, within the Town of Charlestown. Carolina Back Road (Rte. 112) is classified as a Major Collector by Statewide Planning. A Collector's primary role is to distribute traffic from local roads onto arterials and from arterials to local roads. Carolina Back Road is approximately 24 feet wide in the vicinity of the school. The alignment is straight. The road is rural in nature and has 6- to 8-foot paved shoulders in front of the school. A limited amount of curbing and a 5' wide sidewalk also exists along the northernmost frontage, generally extending from the intersection of Old Shannock Road, but not reaching entrances to the school and not providing pedestrian egress to the school. Old Shannock Road is similarly a rural section on the north side but does include sidewalk on the south side from the



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intersection past the school. A non-accessible connection (stair) to the school exists on the eastern side of the building. Carolina Back Road is generally rolling but does include a modest crest south of the school entrance which provides limited sight lines from the mid-portions of the property to the south.

The school has four access points onto Carolina Back Road. The southernmost three access points enter into a large parking field where circulation patterns are identified solely by pavement striping. At the back (east) of the parking field, a one-way travel lane circulates to the north past the main school entrance and then west to egress onto Carolina Back Road. This route is utilized for bus loading. Similarly, a one-way road circulates vehicles around the south and then back of the building where it connects with the northernmost (bus) egress point. This loop is used for parent loading. The available sight distance from the primary (northern) drive is in excess of 300 feet. The parking field entrances are, however, somewhat impeded by the road crest. The posted speed limit on Carolina Back Road is to be 30 MPH. The posted speed limit of Old Shannock Road is 25 MPH. There is a posted (school zone) overlay limit of 20 MPH in the vicinity of the school on both roads.

There are approximately 65 parking spaces at the school distributed in two primary locations. The first of these is a large front parking area containing just over 50 spaces that connects directly to Carolina Back Road. The second parking area is in the rear of the school, where approximately 15 additional spaces exist for school staff as well as various service-related vehicles. The parking areas were both noted to be only partially full during our site visits. Several lined accessible spaces exist in each parking lot, and those spaces appear to be generally compliant to accessibility standards. The bus-drop area has adequate space to accommodate approximately 6-8 full size buses if stacked in a single width.



(An "Existing Conditions Plan" is attached)

Existing Traffic Patterns

Most students appear to be transported by bus or by parent vehicles. At the time of observation, 6 full size school buses and three short buses/vans were identified to serve the school and approximately 50 vehicles observed to drop off/ or pick up students. Additionally, there were a minimal number of students, less than 10, observed to be walking to and from school accompanied by parents.

Parent drop-off/pickup vehicles ingress into the southernmost entrance. Parent vehicles proceed to the south end of the building where they are restricted from entering the loop drive until

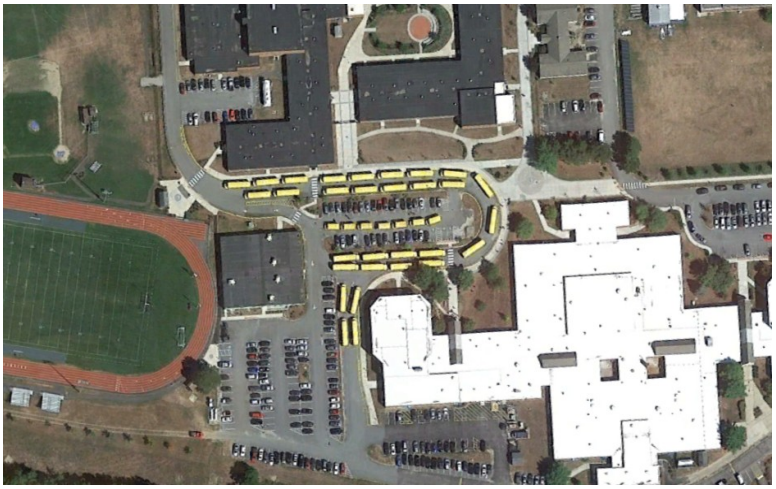
school is dismissed. They then circulate around the building and queue behind the school. Loading/unloading occurs on the north side of the school, prior to discharging to the bus queue area. An approximately 40 car queuing space is available for parent vehicles behind the buildings, with approximately 10 more available in the front field area before cars would be required to queue in the street. However, the policy of restricting vehicles from circulating prior to dismissal creates a significant stacking shortfall and a large number of cars regularly queue in the street. Buses queue in the paved areas on the east side of the front field and load at the main building entrance. Buses and exiting parent vehicles egress through the northern entrance. Sufficient stacking for the buses is provided and, although a merge is required with parent vehicles prior to exiting the property, there does not appear to be a significant issue for bus movements.



No significant delays or unsafe loading or unloading procedures were noted when operating, but again parent vehicles do queue on the street prior to dismissal of students and provisions to accommodate stacking on the property is warranted. No significant issues related to delays on fronting highways was noted.

Transportation Design Conditions

Proposed improvements at the Charlestown Elementary School site consist of a new regional campus comprised of two multi-story buildings, one housing grades PreK-1 and a second building housing Grades 2-5. Initial programming exercises indicate floor plates of approximately 30,000 square foot (sf) and 60,000 sf respectively, although those sizes are anticipated to be refined during subsequent stages of design.



As indicated, occupancy at the school is anticipated to increase to nearly 1,200 students with 95 employees under the redevelopment program. The regionalization of the campus is expected to heavily skew transportation efforts toward bus usage, and accordingly initial design efforts reflect an intention for highly managed transportation operations. As seen in the adjacent

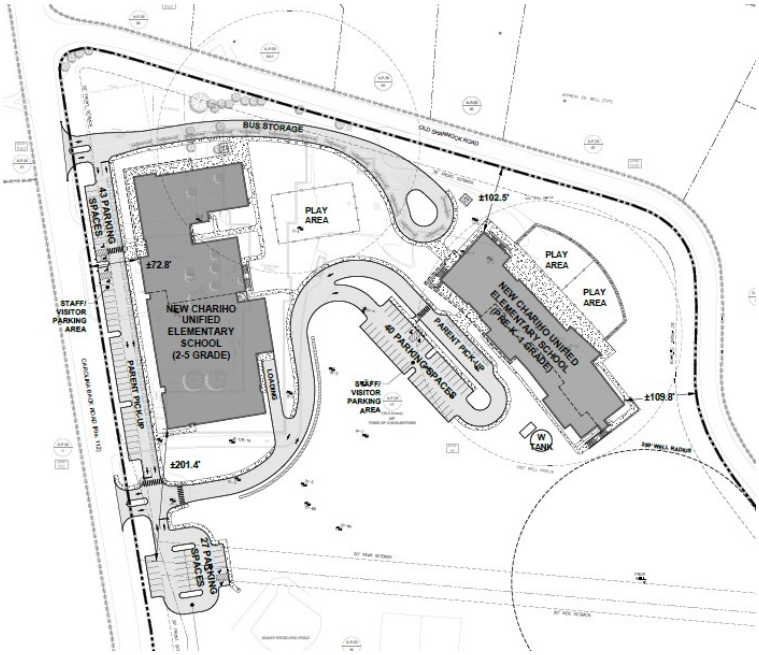
photograph, the Chariho secondary school campus for the middle school and high school accommodates over 35 buses for the eight grade levels. Based on a proportional relationship of the total district population and current transportation needs, it is anticipated that 16-22 full size and 4-5 small buses will be required at the site. It is further estimated that as few as 75 parent vehicles will load and unload if a strong bus-centric transportation program is enacted, but over 150 parent vehicles could be required to load/unload at the location if that program is not mandated. Approximately 110 parking spaces are provided for staff and visitor parking. Again, expanded parking may be beneficial to accommodate uncertainties associated with future transportation trends, but as the design process advances, those benefits need to be weighed against confusion and conflicting maneuvers during loading times.

Initial discussions with the district also indicate a preference for offsite management of bus traffic demands to limit the onsite staging on the highly constrained property. This strategy is anticipated to limit the number of buses stacking on the campus, but will require a comprehensive communication and operations plan that has yet to be determined feasible. This program to limit bus storage on site minimizes impervious areas, but provisions for alternative bus layouts to increase bus storage at the site are recommended during the early design stages to ensure a workable configuration can be established as the design progresses for the location.

Transportation Plan

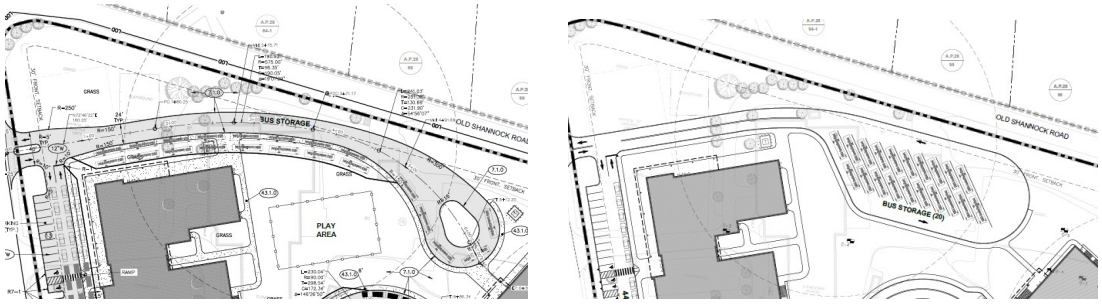
Based on the design conditions outlined, a Schematic Design has been developed that includes separation of the bus and parent egress locations as well as increased and organized queuing on the property, but at percentages of student counts below those occurring at any of the separate (local) elementary schools in the District. Multiple loading locations are proposed to maximize efficiency and distribute parent queues within the available road network.

(A "Overall Development Plan" is attached)

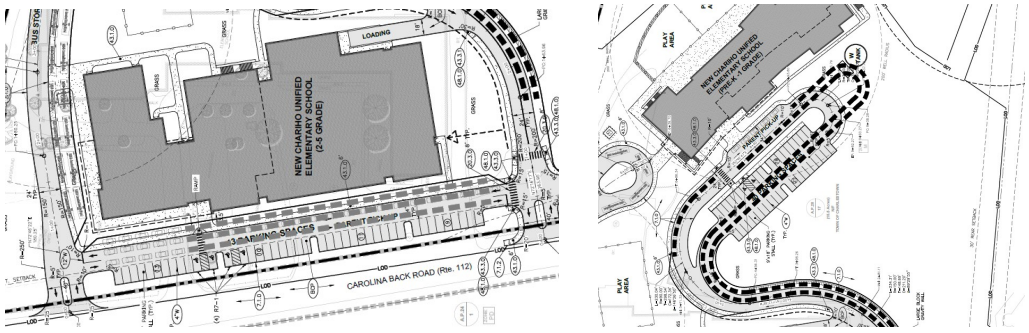


The proposed schematic configuration includes a two-way bus loop separated from the parent drop-off and staff parking areas though a common access/egress to Route 112 is required. These proposed improvements will separate bus traffic from automobile traffic during the loading and unloading process. Provisions for a 16-bus linear bus loading zone are provided. The central location allows close proximity egress to both buildings, and the configuration readily allows for alternatives to increase onsite bus storage.

The parent vehicle circulation pattern is proposed with a single access location at the southernmost driveway to avoid driver confusion. Once onsite, vehicles separate for access to the two buildings, distributing parents to potentially three loading zones, allowing for a 65-vehicle total queue. The primary building entrance for the upper grade level building will be in front with egress at the northern end with the common bus entry/exit driveway. The secondary entry for the upper grade level building would be in the rear, creating a common or intermingled parent queue with the lower grade level building traffic. This secondary access if proposed, would require heavily managed traffic flow in front of the PreK-1 building and reduce operational efficiency for that building. Again, provisions for additional stacking lanes and/or off-line queuing areas are available at the site and provisions for those increased vehicle storage zones should be evaluated further during subsequent stages of design after more extensive coordination with the Chariho District transportation team.



Bus Storage Options



Vehicle Queue Options

Additional Transportation Recommendations:
Consideration of the following evaluations and strategies is also recommended for the project:

- During (Stage II) design stage, develop a detailed Transportation Management Plan with the district to ensure that every efficiency is incorporated into the bus program, and that adequate bus staging and vehicle queuing is provided at the school.

- Undertake a detailed traffic counting program and evaluation at the design stage to include analysis of the AM arrival and PM dismissal periods. Intersection turning movement counts would be completed at the intersection of Carolina Back Road with Old Shannock Road to document the anticipated limited impact to traffic operations of the servicing roadway network.

- Develop a comprehensive way-finding (signage) program for the final design to minimize driver confusion, provide clear direction for drivers, and reduce queues to the extent practicable.

- Explore opportunities for additional circulation roads and queuing lengths to allow for adapting to changes in percentages of parent drivers or other conditions which impact the bus ridership.

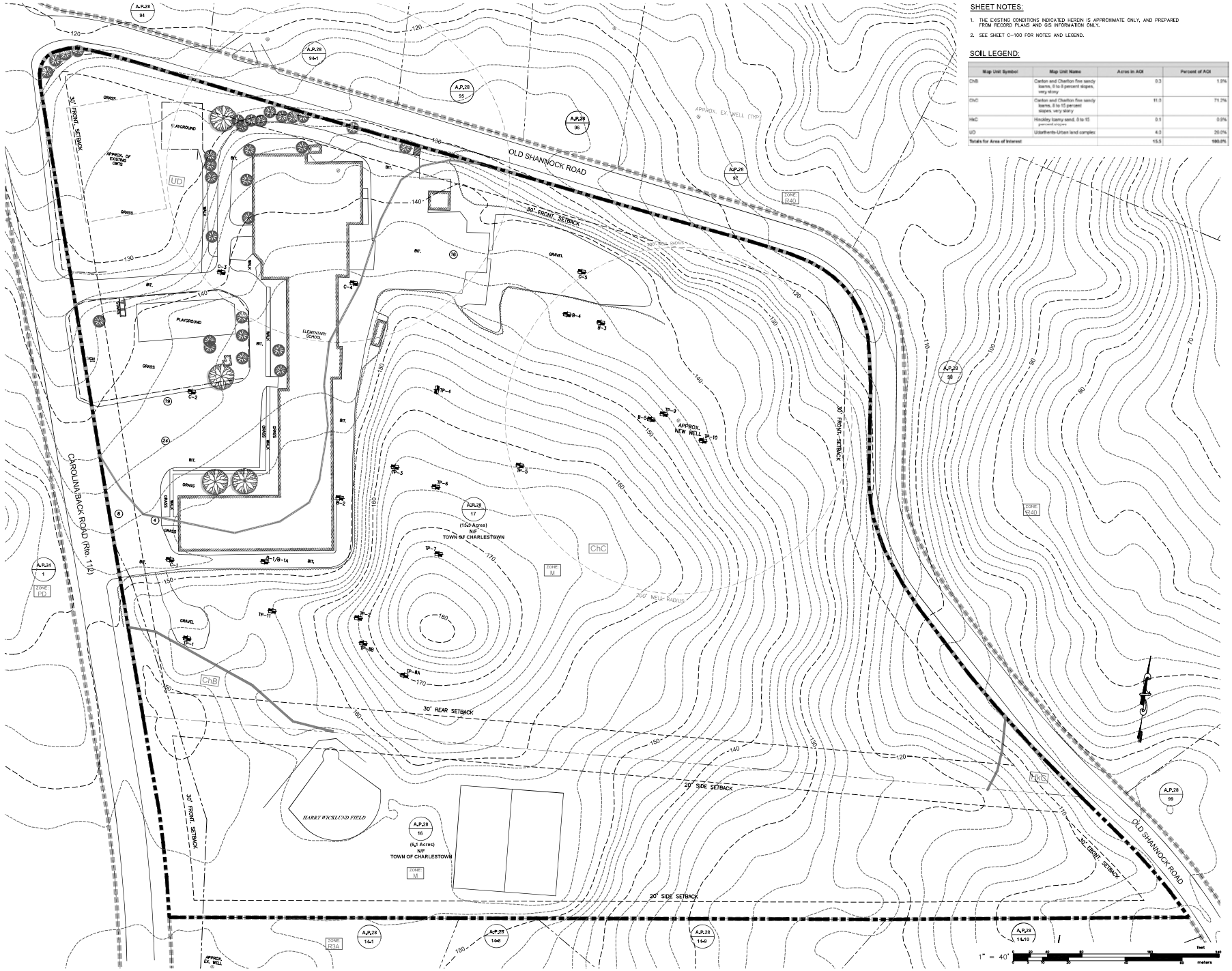
- Explore potential for staggered arrival/dismissal times for each of the grade level buildings to allow for greater available stacking for each element of the campus.

- Explore opportunities for restricted parking for the new PreK track parent vehicles and integrate into a comprehensive vehicle and pedestrian management program.

- Explore opportunities for increasing off-street parking for staff and employees to minimize congested parking maneuvers and provide outlets for queuing vehicles.

- Develop pedestrian friendly safe linkages between the roadway sidewalks, the school building and adjacent outdoor play areas to minimize pedestrian interaction with vehicles and improve visibility and accessibility.

END OF ASSESSMENT



SHEET NOTES:

1. THE EXISTING CONDITIONS INDICATED HEREIN IS APPROXIMATE ONLY, AND PREPARED FROM RECORD PLANS AND GIS INFORMATION ONLY.
2. SEE SHEET C-100 FOR NOTES AND LEGEND.

SOIL LEGEND:

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CnB	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	0.3	1.9%
CnC	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	11.0	71.2%
HkC	Hinckley loamy sand, 0 to 15 percent slopes	0.1	0.9%
UD	Udorthents-Urban land complex	4.0	26.0%
Totals for Area of Interest		15.5	100.0%

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Drawn: KYY
Checked: SSH

DESIGN DEVELOPMENT

CHARLESTOWN ELEMENTARY SCHOOL

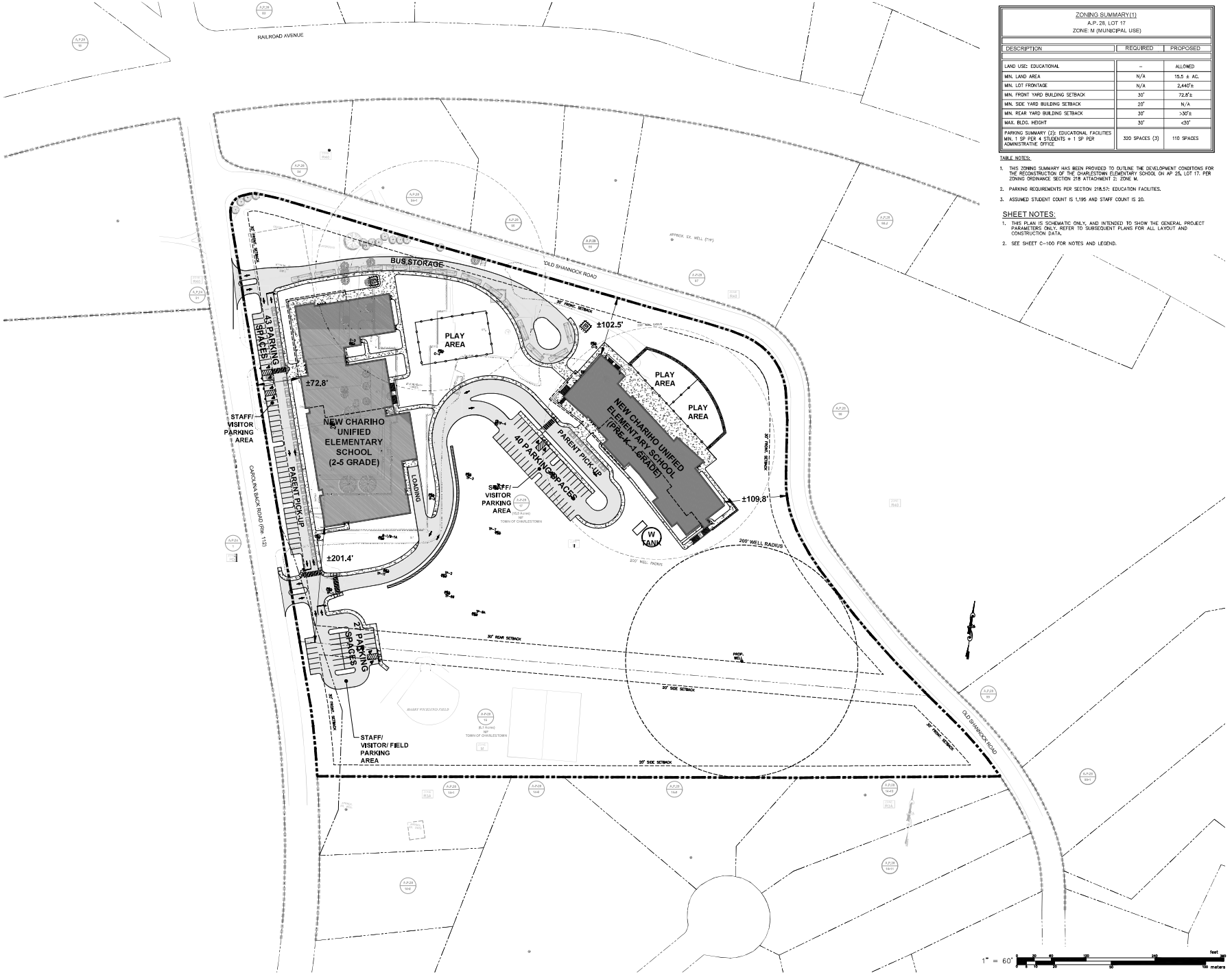
363 Carolina Back Road
Charlestown, RI 02813

KEYPLAN

Number	Date	Issued For

EXISTING CONDITIONS PLAN

Date: 07/24/2026
Scale: AS SHOWN
Proj. Number: 7481.01
Drawing Number: C-002



ZONING SUMMARY(1) A.P. 28, LOT 17 ZONE: M (MUNICIPAL USE)		
DESCRIPTION	REQUIRED	PROPOSED
LAND USE: EDUCATIONAL	--	ALLOWED
MIN. LAND AREA	N/A	15.5 ± AC.
MIN. LOT FRONTAGE	N/A	2,440'±
MIN. FRONT YARD BUILDING SETBACK	30'	72.8'±
MIN. SIDE YARD BUILDING SETBACK	20'	N/A
MIN. REAR YARD BUILDING SETBACK	30'	>30'±
MAX. BLDG. HEIGHT	30'	<30'
PARKING SUMMARY (2): EDUCATIONAL FACILITIES MIN. 1 SP PER 4 STUDENTS + 1 SP PER ADMINISTRATIVE OFFICE	320 SPACES (3)	110 SPACES

TABLE NOTES:

1. THIS ZONING SUMMARY HAS BEEN PROVIDED TO OUTLINE THE DEVELOPMENT CONDITIONS FOR THE RECONSTRUCTION OF THE CHARLESTOWN ELEMENTARY SCHOOL ON AP 25, LOT 17. PER ZONING ORDINANCE SECTION 218 ATTACHMENT 2: ZONE M.
2. PARKING REQUIREMENTS PER SECTION 218.57: EDUCATION FACILITIES.
3. ASSUMED STUDENT COUNT IS 1,195 AND STAFF COUNT IS 20.

SHEET NOTES:

1. THIS PLAN IS SCHEMATIC ONLY, AND INTENDED TO SHOW THE GENERAL PROJECT PARAMETERS ONLY. REFER TO SUBSEQUENT PLANS FOR ALL LAYOUT AND CONSTRUCTION DATA.
2. SEE SHEET C-100 FOR NOTES AND LEGEND.

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Checked: SSH

DESIGN DEVELOPMENT

CHARLESTOWN ELEMENTARY SCHOOL

363 Carolina Back Road
Charlestown, RI 02813

KEYPLAN

Number	Date	Issued For

OVERALL DEVELOPMENT PLAN

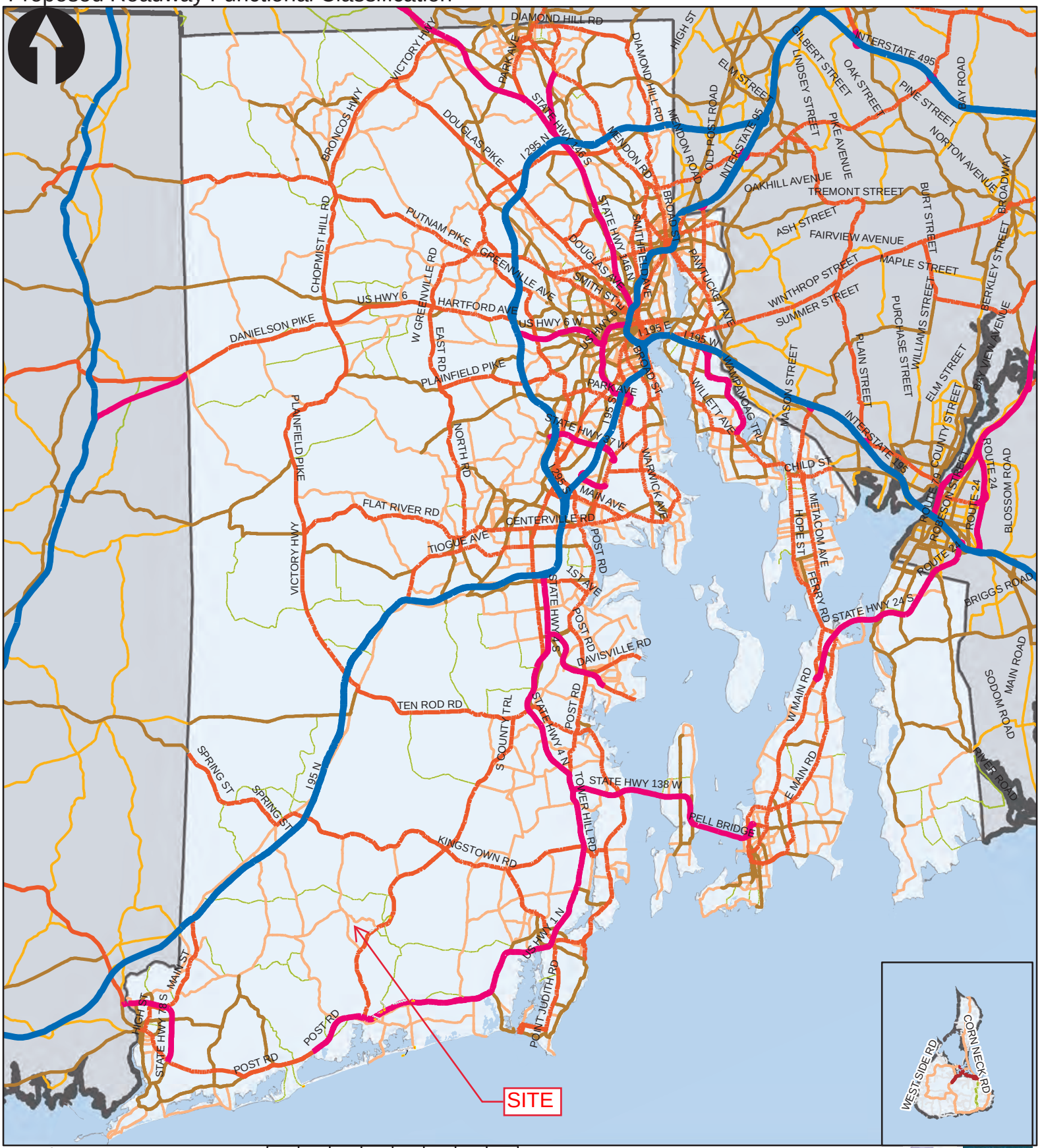
Date: 07/24/2026
Scale: AS SHOWN
Proj. Number: 7481.01
Drawing Number: C-003

ATTACHMENTS

State of Rhode Island

Map Created on July 8, 2014

Proposed Roadway Functional Classification



Legend

Proposed Roadway Classification

- Interstate
- Freeway
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector

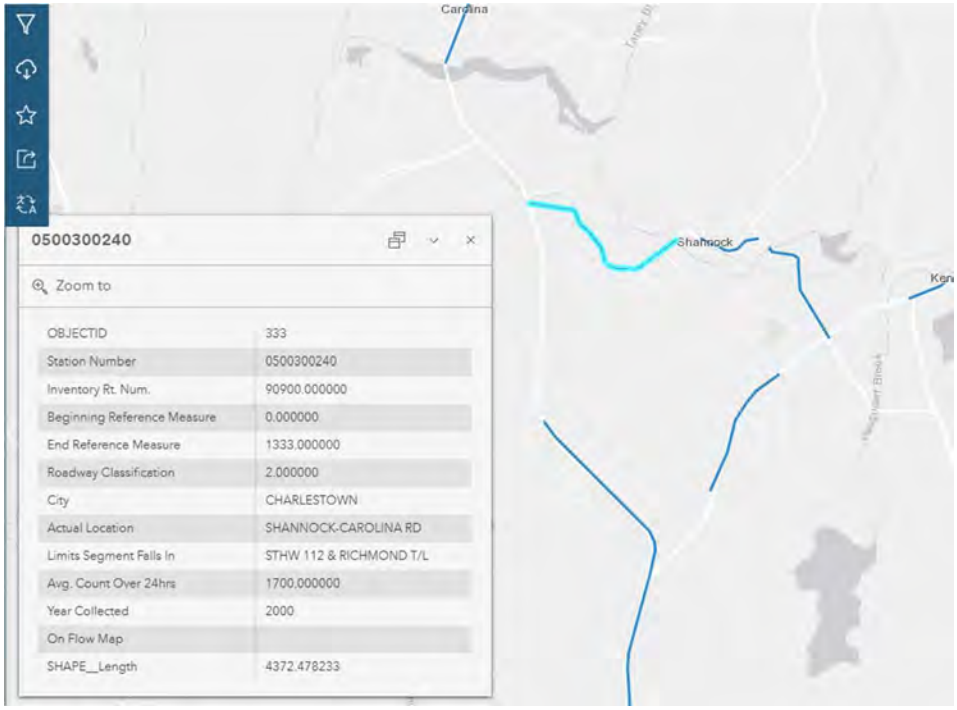
RIGIS

RHODE ISLAND STATEWIDE PLANNING PROGRAM

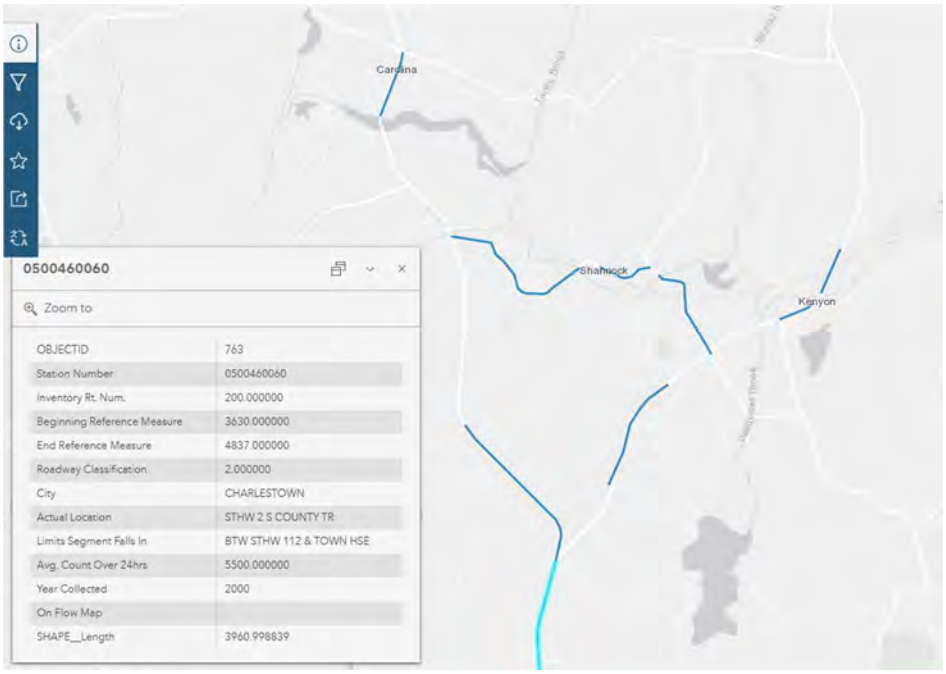
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RIGIS MAPPING SUMMARY

SHANNOCK ROAD COUNTS (2000 ADT = 1700)



CAROLINA BACK ROAD COUNTS (2000 ADT = 5500)



Charlestown School Specific Items

Mission

The Mission of CharlestownSchool is to guide all students to become respectful citizens, independent thinkers,creative problem solvers and responsible learners within a nurturing and collaborative environment.

After School Program

The Arcardia YMCA offers an after school program based on student enrollment. The program runs from 3:25-6:00 p.m. at Charlestown School. Early Release Thursdays may also be included. Space is limited and parents should contact the YMCA at: 401-539-2306 or www.oceancommunityymca.org

Notices

Each student will be given a School/Home folder. Please use this folder to send important notes to school. Notices and flyers will be primarily e-mailed to parents if you have provided an email address to the school.

Drop Off

Busses drop students off along the front curb. Students who need breakfast are released first and the remaining students are released at 8:34 am and walk directly to their classrooms.

Parents may drop off students between 8:30 and 8:35 at the back of the building. The traffic flows one way with parents entering by the 4th grade wing, pulling behind the school and gym and exiting by the large playground. Students in grades 2-4 enter via the C10 door near the library and students in grades K-1 enter using the double set of glass doors near the back parking lot. The front parking area is not accessible for parent drop off due to busses. **Students who arrive after 8:40 will be marked tardy.**

Students arriving prior to 8:30 must be signed up for the Before School Program which is a pre-paid, scheduled program open from 7:35-8:30 each school day. Packets are available in the Main Office. The cost is $3.50 per day.

Parent Pick Up

Parents who wish to pick up their child from school must complete a Dismissal Form and send it to school with their child. Please complete the bright yellow Dismissal Form and send it to school with your child whenever you are going to pick up your child. Parents should bring photo identification until they are known to staff. Early dismissal will take place in the school office until 3:00 pm daily. All end-of-day dismissals will take place in the back of the building promptly at 3:15 p.m.

FOR SAFETY REASONS WE CANNOT ACCEPT PARENT PHONE CALLS FOR DISMISSAL OF STUDENTS.

Peanut-free and Allergies

Your child may be assigned to a classroom that is designated as peanut-free for snack only. There are students in various grades with severe allergies. Thank you for respecting this policy and helping to maintain a safe school environment.

CROSSMAN ENGINEERING

MEMORANDUM

Date: August 4, 2026

To: Sam Hemenway, PE

Cc: File

From: Paul Bannon

Subject: Chariho Regional Elementary School

INTRODUCTION

Crossman Engineering (Crossman) has reviewed the Chariho Regional School District proposal for the elementary school grade level where it is currently planned to combine all schools within the district to a single location. The four schools, Hope Valley, Ashaway/Hopkinton, Charlestown and Richmond are proposed to be combined on a single campus site to be located at the current Charlestown Elementary School property on Carolina Back Road (Route 112). In addition to bringing these schools together, the fifth grade class level at the middle school campus will be relocated to this site.

The following memo provides a brief analysis of potential future traffic demands at the elementary school campus site in order to design the appropriate on-site infrastructure and develop an operational plan as part of the Stage II design effort to accommodate the enrollment and staffing requirements. The memo will define existing and estimated future parameters needed to accommodate on-site vehicle stacking for the arrival and dismissal periods and parking for staff and visitors.

EXISTING CONDITIONS

Site Specific Infrastructure

The existing Charlestown Elementary school campus is comprised of a single 54,235 square foot building constructed in 1954 that accommodates elementary school age children in grades K through 4 with enrollment of approximately 250 students. The building and site infrastructure are situated in the northwest corner of the 15.5-acre site, more than half of which remains wooded. The town also owns an adjacent 6.1-acre parcel that contains recreational uses including a ball field and tennis courts, though half of that lot also remains undisturbed and wooded.

The school is serviced by the abutting roadways of Carolina Back Road (Route 112) and Old Shannock Road. A single formal exit driveway for the school is provided on Carolina Back Road that links to an undefined 200 feet open frontage along Route 112 to a parking lot at the front of the building. Separate one-way entry and exit aisles are defined for proper traffic control circulation. A rear loop road around the back of the building is provided that links to the formal site exit driveway as defined. Refer to a Garofalo & Associates memo dated January 31, 2024 defining the school property and general daily operations at the existing elementary school.

Existing Elementary School Data

In an effort to evaluate current and potential future conditions at the combined site, Crossman reviewed data available from the School District and data collected by Garofalo as part of the earlier elementary school planning studies. The following existing operational conditions were identified for three of the schools as the Hope Valley School was originally earmarked for closure;

	Students	Parent Vehicles	Required Stacking	Buses (large/small)
Ashaway	195	35 (18%)	770'	5/5
Richmond	375	30 (8%)	660'	9/2
Charlestown	250	50 (20%)	1,100'	6/3
Total	820	115	2,500'	20/10

As can be seen in the table the present operation at the three schools accommodating 820 students determined that there are 115 parent drop-off/pick-up vehicles with 20 large and 10 small buses. The parent vehicle to student rate ranged from 8 percent to 20 percent. The lower (Richmond), may be a function of the lack of on-site stacking (230') and/or busing policy to limit parent vehicles as a result of this limitation or general Richmond logistics.

FUTURE CONDITIONS

The proposed condition at the Charlestown school site, as noted includes combining the four elementary schools and also transferring the Grade 5 level students to this campus. The grades will be separated into two distinct buildings, one accommodating the lower grade level Pre-K through Grade 1 (460 students) and the second building accommodating upper grade level Grades 2-5 (740 students). The proposed new upper grade level building will be situated in the northwest corner of the parcel within the general footprint of the existing structure, with the primary frontage and main entrance on Carolina Back Road at two defined driveway locations. The lower grade level building will be situated to the rear of the property adjacent to Old Shannock Road, though access is proposed from the new southerly driveway on Route 112.

A separate bus loop accommodating 16 buses is proposed from the northerly driveway that will extend to the rear of the site between the two schools for convenient loading and unloading of students to each building. The staff (95) and visitor parking for the site will be provided at the front of each building where presently there are 70 spaces and 40 spaces proposed at the upper and lower grade levels respectively. It is anticipated the school arrival/dismissal periods will be the same for both grade level buildings, which is generally (8:40 AM and 3:25 PM).

Based upon our review of current operations and estimated future conditions that will accommodate up to 1,200 students on the campus, it has been determined that due to site size and constraints, operational and/or infrastructure modification measures are necessary to accommodate the anticipate student and staff demands of a single campus environment. Assuming a 14 percent parent vehicle to student ratio (average

of existing conditions at the three schools) and bus patterns of each, the following requirements were estimated for the campus;

	Students	Parent Vehicles	Required Stacking	Buses (large/small)
Lower Grade Level	460	65	1,400'	8/2
Upper Grade Level	740	103	2,250'	14/3

As can be seen, if present ratios are maintained parent vehicle demand could exceed 165 on-site vehicles during the daily arrival and dismissal periods, requiring over 3,650 linear feet of stacking. The infrastructure as proposed would be sufficient for the lower grade level building, allowing stacking for over 60 vehicles if managed properly at the front of the building with dual stacking in the drop-off zone area. The upper grade level building with the greatest number of students provides the least amount of available stacking as the circulator road is limited to the site frontage along Carolina Back Road. For single lane stacking this would result in approximately only 30 vehicles queued on-site before overflowing onto Route 112. The 30 vehicle represents roughly only 30 percent of the required parent vehicle demand as defined, and even with double stacking, could result in parents queuing along Route 112 over 900 feet to Rose Court.

It is clear based upon existing metrics, that measures are necessary to reduce or eliminate the potential off-site impacts by implementing an appropriate busing policy that would promote bus utilization and reduce parent vehicle demand. In doing so, the impact to bus demand should be further evaluated to ensure adequate bus stacking, where as presented on the plan, only 16 bus stacking spaces can be provided within the proposed bus loop. It is estimated that approximately 22 large buses would be needed, though that number may be adjusted by the new routes developed between communities for the regional school. Options to provide additional on-site bus stacking or staging should be advanced through the final design process.

It is recommended that development of a school campus operational plan be prepared in an effort to manage traffic demands on-site within the proposed infrastructure including possible staggard start times between grade level buildings. If these operational measures cannot be adequately implemented, infrastructure modifications to the plan should be advanced during final design to accommodate the deficiencies identified for the demands associated with the upper grade level building.