Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

March 27, 2017

Michael D. Herbert, Town Manager
Ashland Town Hall
101 Main Street
1st Floor
Ashland, MA 01721

Dear Mr. Herbert:

I am pleased to transmit the enclosed Safe Routes to School (SRTS) assessment report for David Mindess Elementary School in support of Ashland's participation in the Commonwealth Community Compact. The Town of Ashland made a commitment to adopt Safe Routes to School as a community best practice within the compact. To assist in the development of this best practice, MassDOT conducted this Safe Routes to School assessment, evaluating the walking and bicycling environment near the David Mindess Elementary school.

The assessment report details observations of barriers to walking and bicycling to school and outlines recommendations for improvements. The Town of Ashland has an active Safe Routes to School program and the Mindess School has participated in the program since 2013. The recommendations provided by MassDOT include a series of educational improvements for the town to consider implementing to improve the Mindess' Safe Routes to School program and apply these lessons to other schools in the community. In addition, the assessment identifies infrastructure improvement recommendations that the Town of Ashland may want to pursue as part of routine maintenance or municipal infrastructure projects.

If you have any questions, please do not hesitate to contact me at (857) 368-8865 or Nikki Tishler, Safe Routes to School Coordinator at (857) 368-8882.

Sincerely,

David J. Mohler
Executive Director,
Office of Transportation Planning

cc: Sean Cronin, Senior Deputy Commissioner of Local Services
Lisa Beaudin, Director of Nutritional Services, Ashland Public Schools
Nikki Tishler, Massachusetts Safe Routes to School Coordinator
Erin Reed, Statewide Outreach Coordinator, Massachusetts Safe Routes to School

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DAVID MINDESS ELEMENTARY SCHOOL ASSESSMENT REPORT

Ashland, MA

January 2017

massDOT
Massachusetts Department of Transportation

MASSACHUSETTS
Safe Routes to School
Mass.gov/MassDOT/SafeRoutes

1 Introduction

The Town of Ashland has signed a Community Compact with the Commonwealth, adopting Infrastructure, Safe Routes to School, and Citizen Engagement as its three best practices. In support of the Community Compact and in order to implement the Safe Routes to School best practice, the Town requested that Massachusetts Safe Routes to School (MA SRTS) conduct an assessment for the David Mindess Elementary School (Mindess School). Toole Design Group, Inc. (TDG), one of the contractors hired by MassDOT to complete SRTS planning and design tasks, conducted this assessment for the Mindess School.

The assessment examined existing conditions around and to the Mindess School. This report documents barriers to walking and bicycling at and near the school; gaps in the bicycling and walking network around the school; observations of current behavior; and potential recommendations for improvements.

This report summarizes the findings of the assessment and outlines next steps for improving walking and bicycling to and from the school.

This report is organized in the following sections:

1. Introduction
2. MA SRTS Program and Assessments
3. David Mindess Elementary School
4. Observations and Findings
5. Recommendations
6. Next Steps

2 MA SRTS Program and Assessments

2.1 MA SRTS Program

The purpose of the SRTS program is:

(1) To enable and encourage children, including those with disabilities, to walk and bicycle to school;

(2) To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and

(3) To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

SRTS programs use the 5 E's (Engineering, Education, Encouragement, Enforcement, and Evaluation) to meet the goals of the program. Successful SRTS programs incorporate all E's when working to make walking and bicycling to school a safe and attractive choice for students and their families.

MA SRTS is comprised of an infrastructure program (which supports the Engineering aspect) and a non-infrastructure program (which supports Education, Encouragement, Enforcement, and Evaluation).

2.2 Assessments

This SRTS assessment is based on a walk audit conducted in June 2016. A walk audit is a group exercise in which a team walks around the school campus and adjacent neighborhoods to observe, identify and document walking and biking conditions. The findings of the assessment are used to identify barriers to walking and bicycling in the environment surrounding a school, and are documented in a report.

The assessment for the Mindess School was held on June 15, 2016 with MassDOT and TDG staff, school staff, and community stakeholders. The assessment included observations of the walking school bus route, key walking and bicycling routes to school, and the dismissal process. The following people participated:

Mindess School: James Adams (Superintendent), Claudia Bennett (Vice Principal), Lisa Beaudin (Nutrition Services), Susan Palefsky (Nutrition Services), Tricia Kendall (Parent)

Town of Ashland: Yolanda Greaves (Representative, Selectman Office), Michael Herbert (Town Manager), Craig Davis (Police Chief), Edward Burman (Police Sergeant), Beth Reynolds (Director of Economic Development), Nathaniel Strosberg (Town Planner)

MassDOT: Nicole Tishler (MA SRTS Program Director), Erin Reed (MA SRTS Statewide Coordinator), Melissa Green (MA SRTS Outreach Coordinator)

Toole Design Group: Catherine Duffy (Transportation Planner), Heather Georgallas (Engineer)

3 David Mindess Elementary School

This section describes the Mindess School's characteristics, including a summary of how far students live from the school, which indicates the potential for walking or biking to school. End-of-the-day school dismissal procedures are also described in this section.

3.1 School Characteristics

The Mindess School is located at 90 Concord Avenue, Ashland, MA and has 608 students in grades 3-5. In the 2017-2018 academic year, the Mindess School will transition to a middle school, enrolling students in grades 7-8. School staff expect that there will be an increase in students walking and bicycling to school and a decline in bus ridership with this transition.

Students' families can purchase bus passes for approximately $300 per year, regardless of residential location. Many students are picked up by private vehicle even if they have a bus pass.

The Mindess School administered the MA SRTS parent survey (included in Appendix 1) in 2016 to develop an understanding of student travel patterns. Approximately 42% (254) of Mindess School students are estimated to live within two miles of school, which is considered a bikeable distance. One mile is considered to be a walkable distance, and 18% (110) of students are estimated to live within that distance. As shown in Figure 1, 40 of those 254 students are estimated to actually walk or bike to school. The last page of the survey report in Appendix 1 shows a map of estimated student resident locations based on the survey results.

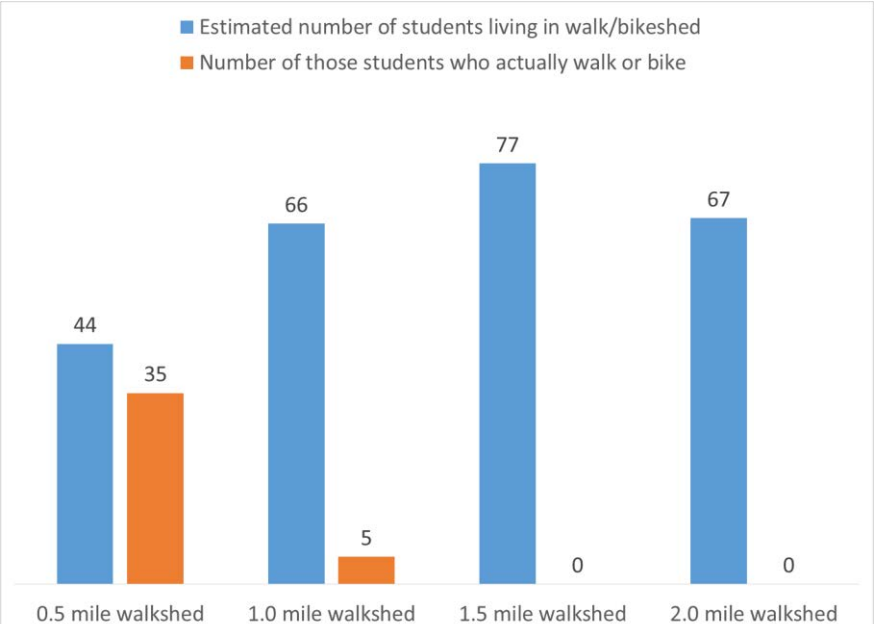


Figure 1: Numbers of students living within walkable/bikeable distances of school compared to numbers that actually walk or bike.

3.2 Participation in SRTS Education and Encouragement

The Mindess School joined the MA SRTS program in 2013. School staff work with the regional MA SRTS Outreach Coordinator on education and encouragement activities both at the school and in the community. Activities include organizing a regular walking school bus, participating in International Walk to School Day, administering the parent survey, and working with law enforcement. These activities are described in more detail below.

Parents lead a walking school bus from the Ashland Library to the Mindess School on Wednesdays in the fall and spring months as shown in Figure 2. On International Walk to School Day, the School organizes a group walk following the same route. The school buses drop off the students near the Ashland Library so that bused students can participate.

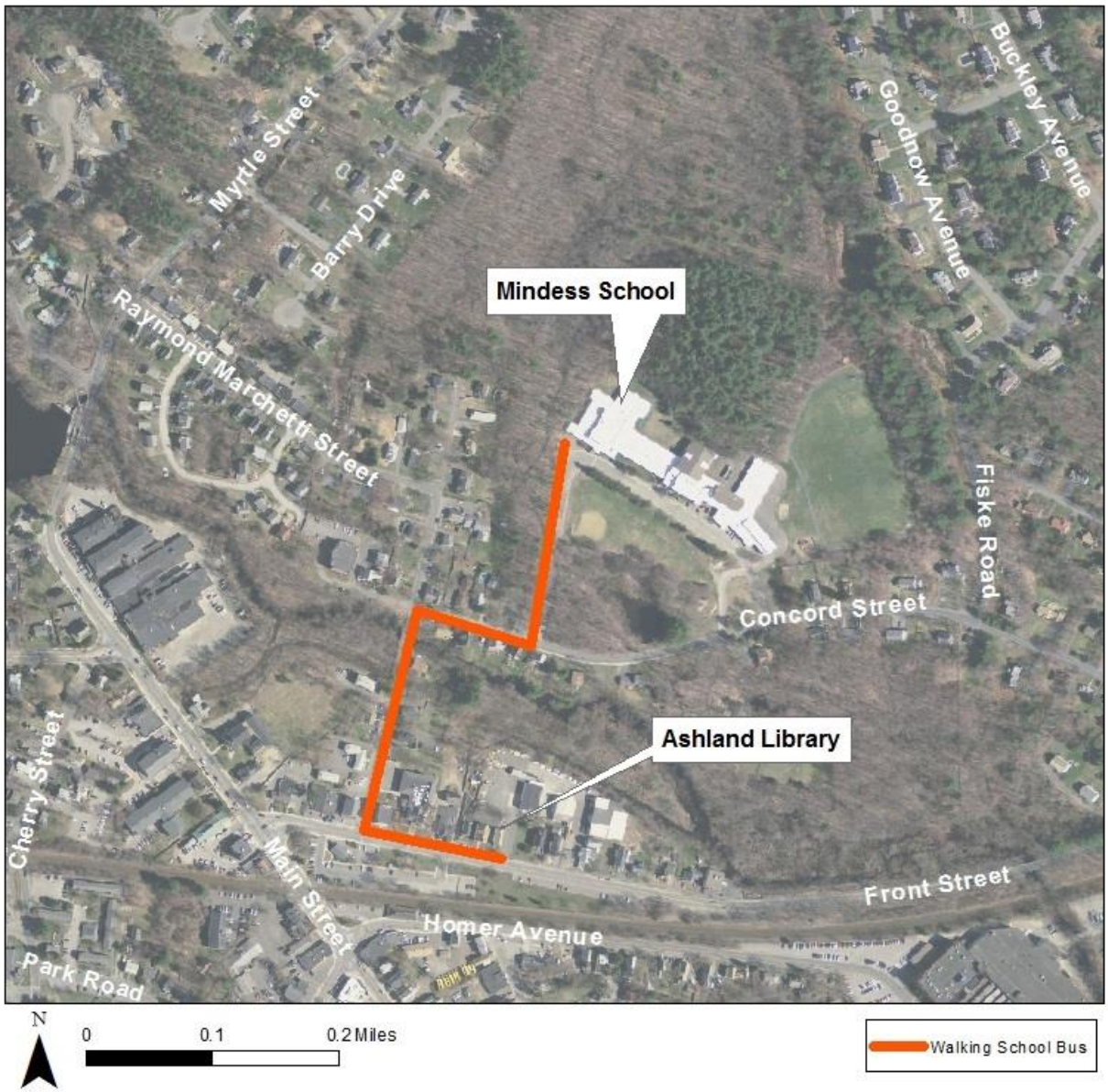


Figure 2: Walking School Bus route

As noted above, the Mindess School administered the parent survey this year to establish an understanding of travel behavior and parent perceptions of walking and bicycling to and around the Mindess School. The results will provide an important baseline from which to measure future success of SRTS in Ashland.

The Ashland Police Department is supportive of students walking and bicycling to and from school. The Town recently converted all traffic signals town-wide to include an exclusive pedestrian phase. The Police Department and the Nutrition Director for the Mindess School have been actively coordinating to improve walking and bicycling conditions and traffic congestion around the School.

3.3 Dismissal Procedures

Students at the Mindess School are dismissed in three phases:

Phase 1. Parent/guardian vehicles; eastbound walkers and bicyclists

Phase 2. School buses

Phase 3. Westbound walkers and bicyclists

Figure 3 shows the Mindess School campus and access points.

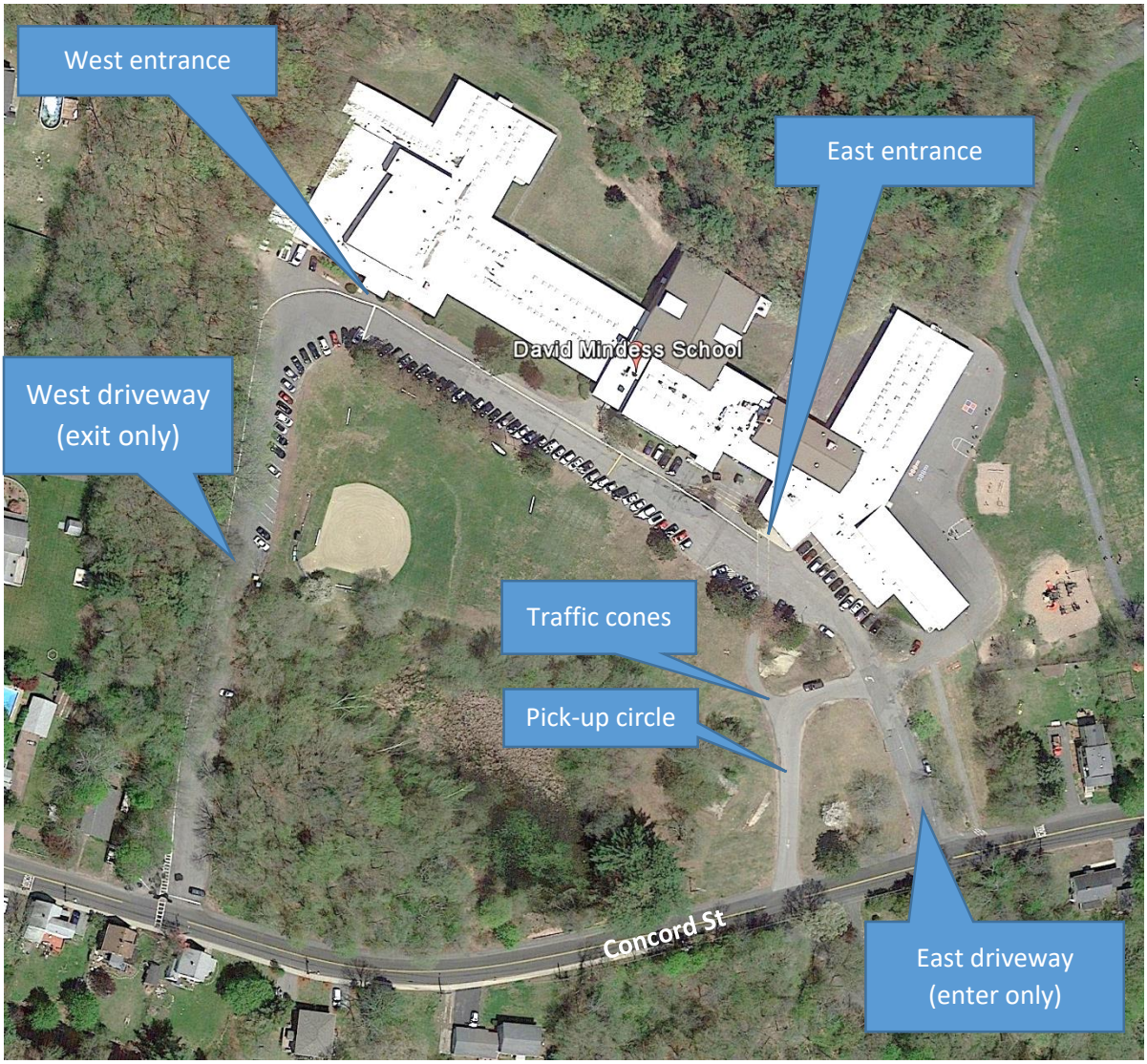


Figure 3: Mindess School campus

3.3.1 Phase 1: Parent/guardian vehicles; eastbound walkers and bicyclists

Students picked up by parents in private vehicles and students walking or bicycling to the east of the school are dismissed first at 2:40. On the day of the walk audit, there were 16 students who either walked through an informal path adjacent to the field east of the school or walked down the sidewalk alongside the east driveway to Concord Street.

Students who get picked up by private vehicle are escorted by staff volunteers from the East Entrance (Figure 3) through a very faded crosswalk, across an asphalt path, to the pick-up circle. When all vehicles waiting in the pick-up circle are loaded, they are dismissed and the next wave of vehicles enters the circle.

Orange cones are arranged along the side of the circle to prevent students from entering the travel lane; however, students do not comply with this barrier. Students were observed playing in the travel lane, standing with their backs to traffic, using iPads and mobile phones, and generally demonstrating unsafe behavior (Figure 4).



Figure 4: The pick-up queue during dismissal.

During the walk audit (described in more detail below), parents were observed queuing in the pick-up circle and along Concord Street (Figure 5) about 40 minutes before dismissal. Concord Street is a two-way, two-lane road with no parking. There were approximately 80 vehicles in the queue, which extended past Fiske Avenue. The queuing vehicles blocked the eastbound lane on Concord Street for about 40 minutes prior to dismissal and 10 minutes after dismissal. Several cars were observed driving eastbound in the westbound lane for 600 feet or more to bypass the queue. The 80-vehicle queue moved through the pick-up circle in 12 minutes. There is a 5-minute idling policy at the school, though this was not enforced during the walk audit.

3.3.2 Phase 2: School buses

In Phase 2, the buses arrive and park in the designated bus loading zone. The bus loading zone also serves as the pedestrian zone. When all the buses are in place, bus-riding students are dismissed and loaded onto the buses. This process takes about 10 minutes. Once all students are loaded, the buses depart via the west driveway, at about 2:55 PM.

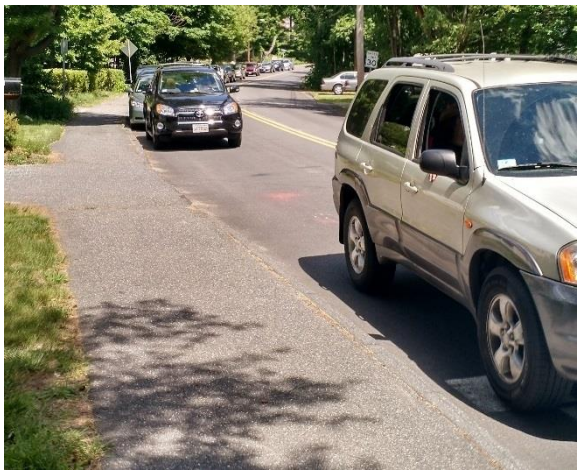


Figure 5: Vehicle queue of parents prior to dismissal on Concord Street.

3.3.3 Phase 3: Westbound walkers and bicyclists

After all buses have cleared the driveway, westbound walkers and bicyclists are dismissed from the west doors of the school to the west driveway. (On the day of the walk assessment, there were 16 westbound walkers and 6 westbound bicyclists; at least three of the students bicycling were not wearing helmets.) Along the west driveway, there is a white line to delineate the bus loading/pedestrian zone from the travel lane, as shown in Figure 6. Students somewhat comply with this white line. On the day of the walk assessment, a large SUV was parked in the bus loading/pedestrian zone, forcing students out into the travel lane.

Unlike eastbound walkers and bikers, who are dismissed first with students being picked up by parents, westbound walkers and bikers wait about 17 minutes in the gym to be dismissed last. The school does not allow these students to be dismissed until vehicle and bus traffic has cleared the campus out of concern for potential conflicts along the roads. School staff also noted that there is a freight train passing through downtown at 2:42 PM, and there is concern that this could be a danger to students. However, the first phase of dismissal commences at 2:40 and the distance between the school and the railroad crossing downtown is 0.4 miles, so it is unlikely that this is a potential conflict because students would not reach the crossing until after the train has passed. Furthermore, residence data suggest that few, if any students would cross the tracks to get home from school.

Dismissal concerns:

- **Excessive vehicle idling and queuing on Concord Street**
- **Vehicles driving against traffic due to idling vehicles blocking the travel lane on Concord Street**
- **Unsafe behavior displayed by students**
- **Late dismissal of walkers and bicyclists.**

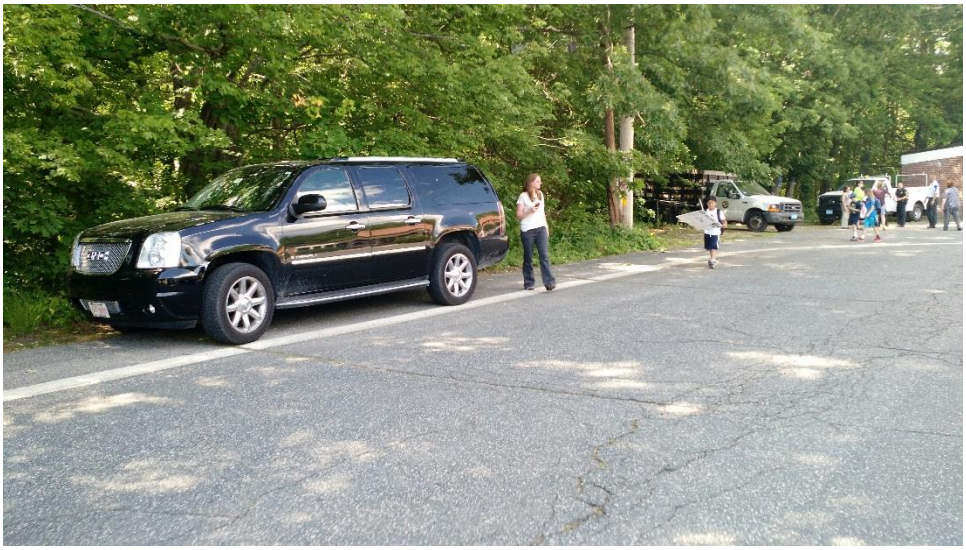


Figure 6: SUV parked in designated walking space at dismissal on the West Driveway

4 Observations and Findings

TDG conducted crash data analysis prior to the assessment. Crash data for the study area were obtained from MassDOT for the most recent three-year period available (2012-2014). A summary is provided in Table 1, and crashes are discussed further by location. The crash patterns at signalized locations are potential indicators of inadequate signal timing, poor visibility of signals and/or a large number of turning vehicles.

Table 1: Crash History Summary 2012-2014

	Number of Crashes		Severity		Crash Type						Percent During	
Location	Total	Average Per Year	PD	PI	SS	RE	HO	FO	Ped	School Bus Related	Pick-Up & Drop-Off Period	Wet/Icy Conditions
Main St at Pleasant St	12	4.0	12	0	4	5	0	2	0	1	50%	33%
Main St at Front St	10	3.3	7	2	2	4	0	3	1	0	30%	10%
Main St at Summer St and Homer Ave	12	4.0	12	0	6	3	1	1	1	0	42%	25%
Front St at Concord St and Fountain St	7	2.3	6	1	3	2	0	2	0	0	57%	0%
Concord St at Fiske Rd	2	0.7	2	0	1	0	0	1	0	0	100%	50%

Source: MassDOT Statewide Crash Data (2012-2014).

[a] PD = property damage only; PI = personal injury; F = fatality.

[b] SS = sideswipe/angle; RE = rear end; HO = head on; FO = fixed object.

[d] Percent of vehicle incidents that occurred during the weekday AM and weekday PM commuter peak periods.

Prior to attending the assessment, TDG worked with the Mindess School and MA SRTS staff to begin to identify issues and conditions that should be considered during the assessment. The assessment began with a discussion of factors impacting walking and biking to Mindess School. Then the group observed school dismissal; catalogued the locations of key walking and bicycle infrastructure (including sidewalks, pathways, and traffic control features); and identified other factors impacting travel to and from the school.

Figure 7 shows eight critical sites observed during the walk assessment. The study area (within the yellow line) was selected for high numbers of student residences within walking distance to the school and confirmed by the school champion as an area in need of bicycle and pedestrian improvements.

Conditions of each of the eight sites observed during the audit (Figure 7) are described below, followed by summary of the crash data. Recommendations for addressing barriers to walking and biking to school are identified and described in Section 5.

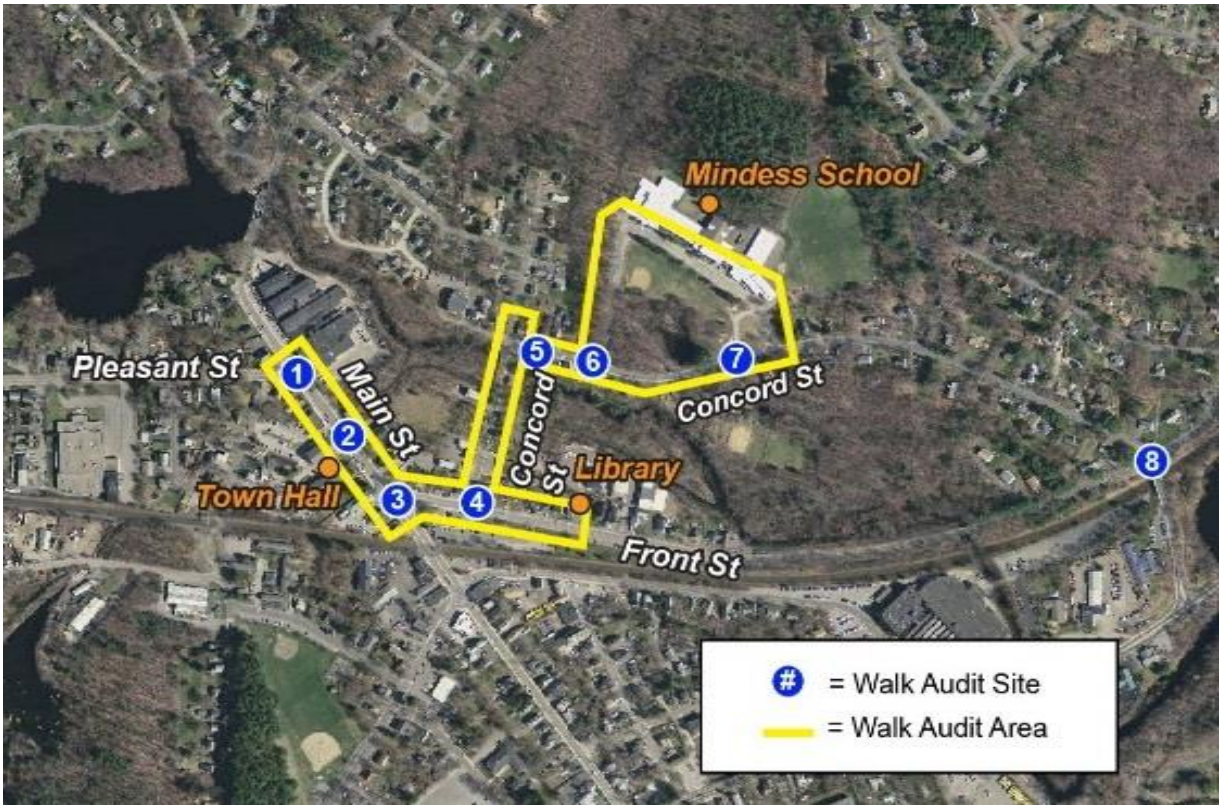


Figure 7: Walk audit study area

Site #1: Main Street and Pleasant Street

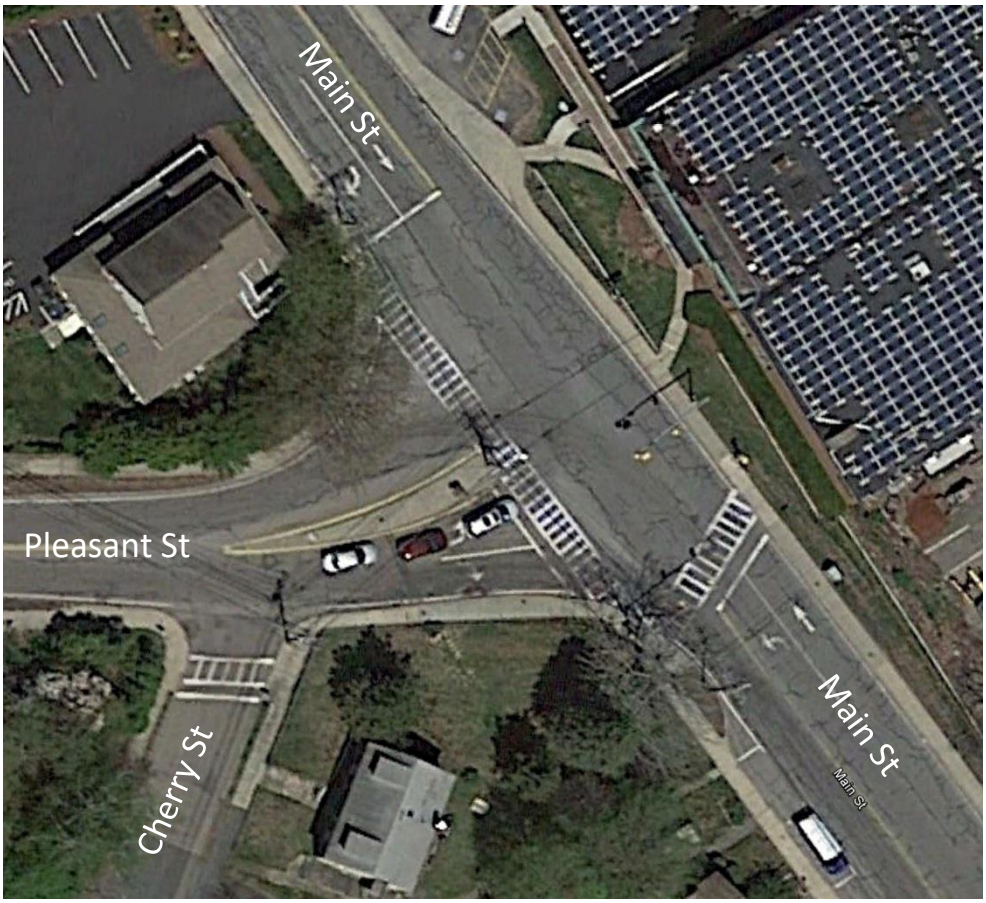


Figure 8: Site #1-Intersection of Pleasant Street and Main Street

The intersection of Main Street at Pleasant Street is a signalized T-intersection. Main Street runs in the general north-south direction with Pleasant Street intersecting from the west. Sidewalks are present along both sides of Main Street and Pleasant Street. Land use is primarily residential and commercial at this location. There is no on-street parking in this area. Cherry Street intersects Pleasant Street from the south approximately 85’ to the west of Main Street. The Ashland MBTA Commuter Rail parking lot is located on Pleasant Street.

At the intersection, Main Street consists of one through travel lane and one turning lane in both directions. Pleasant Street consists of one left-turn lane and one right-turn lane, and there is a raised median on this approach.

There are crosswalks across the northbound Main Street and Pleasant Street approaches. The traffic signal provides an exclusive pedestrian phase and has emergency vehicle preemption. Push buttons are provided at both ends of the crosswalks, as well as in the median on the Pleasant Street approach.

Wide corner curb radii create a long crossing distance for the Pleasant Street crosswalk, while a skewed alignment lengthens the Main Street crosswalk.

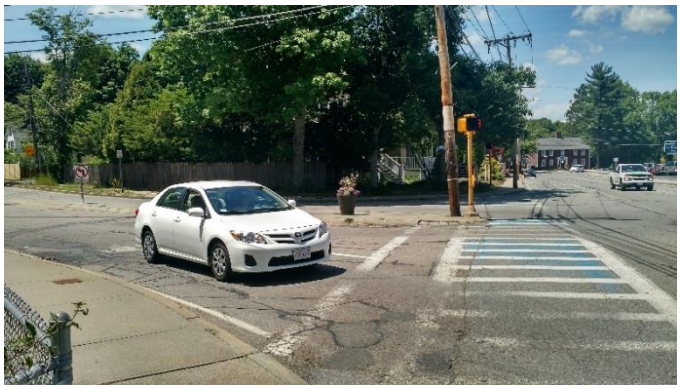


Figure 9: Intersection of Pleasant Street and Main Street, looking north on Main Street with Pleasant Street on the left.

The intersection of Main Street at Pleasant Street experienced 12 reported collisions within the three year time period (2012 through 2014), averaging approximately 4 crashes per year. All reported collisions resulted in property damage only. Of the 12 crashes reported during this period, four were either sideswipe or angle type and five were rear-end crashes. In 2013, there was one reported rear-end collision involving a school bus that resulted in property damage only. It was observed that 50% of the crashes occurred during the drop-off and/or pick-up peak travel hours and another 33% occurred during wet/icy roadway conditions.

Barriers to walking/bicycling to school:

- **Long crossing distances**

Site #2: Main Street Mid-Block Crosswalk

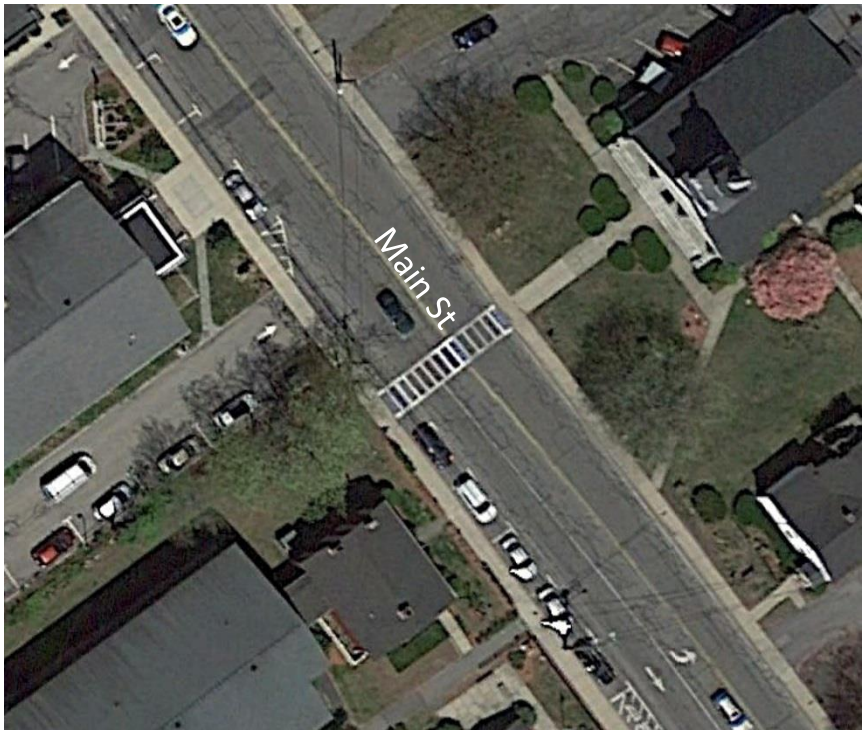


Figure 10: Site 2 - Midblock crosswalk on Main Street

There is an unsignalized mid-block crosswalk across Main Street, just south of the Ashland Town Hall, at the Federated Church of Ashland. There is one travel lane in each direction at this point on Main Street, and a southbound left-turn lane for Front Street begins at the crosswalk. There are sidewalks on both sides and curb ramps for the crosswalk. The exit driveway from Town Hall is immediately north of the crosswalk, and there is on street parking on the west side of Main Street in this area. "Pedestrian Crossing" and "State Law Yield to Pedestrians" signs are provided for both approaches, with the warning of a $100 fine. Participants on the walk assessment reported high levels of pedestrian activity at this location related to the church and Town Hall.



Figure 11: Mid-block crosswalk on Main Street. View looking east across Main Street.

A review of the historic crash data collected from MassDOT indicates that in 2013 a pedestrian was struck in front of the Ashland Town Hall by a vehicle traveling northbound on Main Street, resulting in an injury.

Barriers to walking/bicycling to school:

- **Long crossing distance**
- **Lack of visibility**
- **Potential for multiple threat crash due to the added left turn lane**

Site #3: Main Street and Front Street

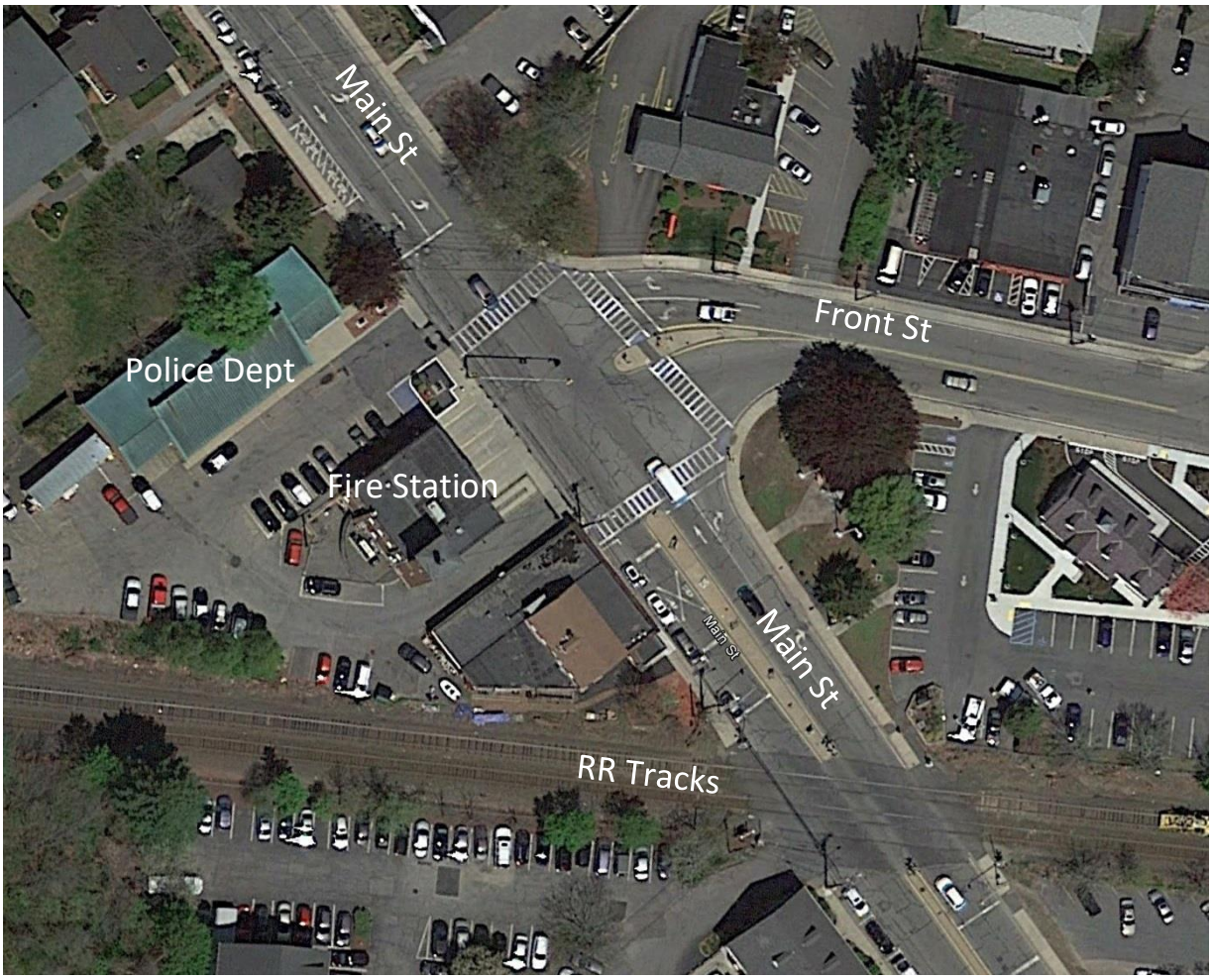


Figure 12: Site #3-Intersection of Main Street and Front Street

The intersection of Main Street at Front Street forms a signalized three-legged intersection. Main Street runs in the general north-south direction with Front Street intersecting from the east. At the intersection, Main Street consists of one through lane and one turning lane in both directions. Front Street consists of one left-turn lane and one right-turn lane. There are median islands on Front Street and on the northbound Main Street approach.

Land use is primarily commercial and retail at this location. The Police Department and Fire Station are located opposite Front Street and there is an at-grade railroad crossing located just south of the intersection. There is on-street parking on the west side of Main Street.

There are crosswalks across all approaches and sidewalks along both sides of each approach. The existing traffic signal provides an exclusive pedestrian phase, emergency vehicle preemption, and pedestrian push buttons. Push buttons are provided on all crosswalk termini, as well as in the concrete median located on the Front Street approach. The crosswalk across Front Street is long due to wide corner radii, however, the raised median provides a crossing refuge.

There is a crossing guard stationed at this intersection during school arrival and dismissal periods.



Figure 13: Intersection of Main Street and Front Street. View looking east on Main Street towards Front Street.

The intersection of Main Street at Front Street experienced ten reported collisions within the three year time period (2012 through 2014), averaging approximately 3.3 crashes per year. The majority of the reported collisions resulted in property damage only, however two were reported to have resulted in personal injury. Of the ten crashes reported during this period, four were rear-end crashes. In 2013, there was one reported collision involving a vehicle traveling southbound that struck a pedestrian. It was also observed that 30% of the crashes occurred during the drop-off and/or pick-up peak travel hours and another 10% occurred during wet/icy roadway conditions.

Barriers to walking/bicycling to school:

- **Long crossing distance**
- **Large curb radii**

Site #4: Front Street and Concord Street and Adjacent Mid-Block Crosswalk



Figure 15: Site #4-Intersection of Front Street and Concord Street

The intersection of Concord Street at Front Street is a minor-leg stop-controlled, T-intersection. Front Street runs east-west with Concord Street intersecting from the north. Front Street is uncontrolled and Concord Street is stop-controlled, and there is one lane on each approach. Land use is primarily commercial and retail at this location.

Crosswalks are present across the Concord Street and westbound Front Street approaches. Sidewalks are provided along both sides of Front Street and on the east side of Concord Street. However, there are parking lots on either side of the intersection on Front Street that present gaps in the sidewalk. Each access is the entire length of the parking lot and cars back out of spaces across the sidewalk and on to Front Street as shown in Figure 16 and Figure 17.



Figure 14: Mid-block crosswalk at Library on Front Street. View looking south across Front Street.

The Mindess School walking school bus starts at the parking lot on the south side of Front Street across from the library. There is a mid-block crosswalk across Front Street in front of the library with an in-street pedestrian sign. The walking school bus crosses Front Street using this crosswalk and turns west toward the Concord Street intersection, where it turns north towards the Mindess School. Participants on the walk assessment reported that in addition to students crossing the street as part of the walking school bus, this crosswalk has a high level of pedestrian activity related to the library, a church, and senior housing. There is on-street parking on the north side of Front Street on either side of the corsswalk, which may reduce visibility.



Figure 16: Parking lot at the intersection of Concord Street and Front Street. View looking east on Front Street.

The location experienced seven reported collisions from 2012 through 2014, averaging approximately 2.3 crashes per year. Of the seven crashes reported, one collision resulted in personal injury. Three reported crashes were either sideswipe or angle type and two were rear-end crashes. It was observed that 57% of the crashes occurred during the drop-off and/or pick-up peak travel hours and none occurred during wet/icy roadway conditions.



Figure 17: Driveway access on Front Street northwest of intersection with Concord Street

Barriers to walking/bicycling to school:

- **Missing sidewalk at parking lots on northern side of Front Street**
- **Long crossing distances**
- **Lack of pedestrian visibility**

Site #5: Concord Street and Raymond Marchetti Street



Figure 18: Site #5: Concord Street and Raymond Marchetti Street

The intersection of Concord Street at Raymond Marchetti Street is a four-way, east-west stop-controlled intersection immediately west of the Mindess School. Raymond Marchetti Street approaches from the north and Concord Court approaches from the west. Concord Court is a dead-end residential road. Concord Street approaches the intersection from the south and turns right at Raymond Marchetti Street, to continue eastbound toward the school. At the intersection, the eastbound and westbound approaches are stop-controlled while the northbound and southbound approaches are uncontrolled. All approaches consist of one lane. Land use is primarily residential at this location. Walk assessment participants noted that vehicles on Concord Street may make the turn to continue on Concord Street at high speeds. The southeast corner of the intersection has an extremely wide corner radius, which may facilitate these high speed turns.

There are no crosswalks at this intersection. Sidewalks are provided along the east side of the northbound Concord Street approach, the south side of the Concord Street westbound approach, and

the west side of Raymond Marchetti Street. With the missing sidewalks and crosswalks, there is no safe route between the school and the neighborhoods on the west side of Raymond Marchetti Street.

There were no reported crashes 2012-2014 at this location.

Barriers to walking/bicycling to school:

- **Missing sidewalks and crosswalks**
- **Wide northbound right turning radius**

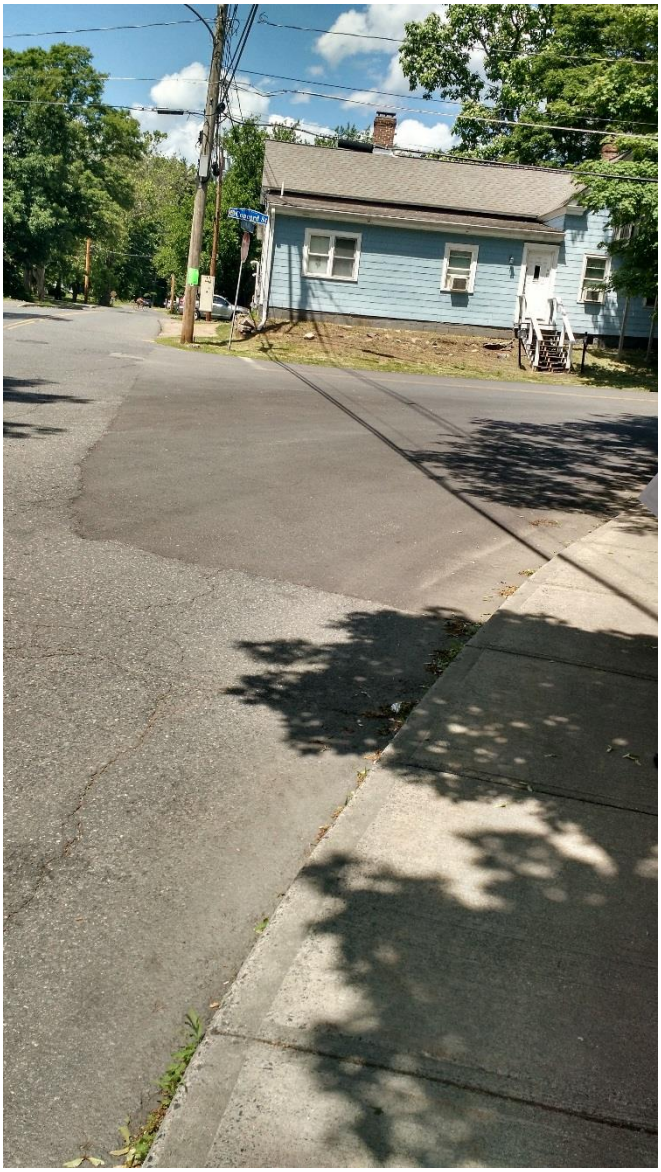


Figure 19: Intersection of Concord Street and Raymond Marchetti Way. View looking north from southeast corner.

Site #6: Concord Street and the west driveway



Figure 20: Site #6: Concord Street and the Western School Driveway

The western school driveway intersects Concord Street from the north and is exit only. Concord Street in this area is one lane in each direction. There is a sidewalk on the south side of Concord Street from the intersection with Raymond Marchetti Street to just west of the School's middle driveway, and on the north side of Concord Street from School's western driveway to Fountain Street in the east. Although exit-only with no lane markings, the western driveway is wide enough to accommodate two lanes of traffic. There is a painted buffer along the west side of the driveway which serves as a "sidewalk," but does not offer physical separation from traffic. Walk assessment participants observed a vehicle parked in the painted "sidewalk," forcing students exiting via this driveway to walk in the travel lane.

There is a crosswalk across Concord Street at the western driveway, connecting to the painted driveway "sidewalk." The wide corner radii of the western driveway creates a long crossing distance. Additionally, right-turning vehicles exiting the School queue up in the crosswalk.



Figure 21: Crosswalk at Concord Street and West Driveway of Mindess School. View looking east on Concord Street with the driveway on the left.

On approach to the crosswalk, sight lines for westbound vehicles are limited due to vegetation along the northern side of Concord Street and due to the horizontal curvature of Concord Street. Several participants of the walk assessment suggested that pedestrians would be safer accessing the school via a crosswalk at the corner of Concord Street at Raymond Marchetti Street. However, there is no sidewalk on the northern side of Concord Street to connect this intersection to the School.

There were no reported crashes 2012-2014 at this location.

Barriers to walking/bicycling to school:

- **Driveway configuration**
- **Long crossing distance**
- **Wide corner radius**
- **Missing sidewalks along driveway and along Concord Street west to Raymond Marchetti Street**
- **Poor visibility due to curvature of Concord Street and vegetation**

Site #7: Concord Street and the east driveway



Figure 22: Concord Street and the east driveway



Figure 23: Looking west on Concord Street with the east driveway on the right.

The east driveway is a two-lane enter-only driveway providing access for all vehicles to the school, school parking lot and the pick-up circle utilized for private vehicle pick-up. The middle driveway is a one lane exit-only driveway from the parent pick-up circle.

The intersection of Concord Street at Fiske Road (to the east of the East Driveway) experienced two reported collisions within the three year time period (2012 through 2014), averaging less than one crash per year. All reported collisions resulted in property damage only. One reported crash was an angular crash while the other was a single vehicle collision that crashes with a fixed-object. Both crashes occurred during the drop-off and/or pick-up peak travel hours and 50% occurred during wet/icy roadway conditions.

Although there are no physical barriers to walking or bicycling to school at this intersection, the walk assessment participants observed unsafe practices during dismissal at this intersection, described in the following section.

Barriers to walking/bicycling to school:

- **Disorganized behavior during dismissal period on the school driveway**

Site #8: Concord Street and Fountain Street

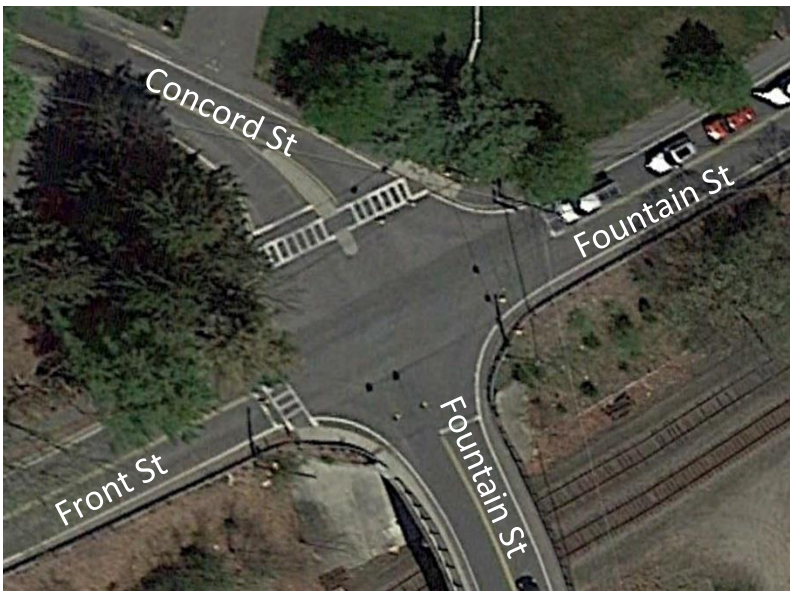


Figure 24: Site #8: Concord Street and Fountain Street



Figure 25: Intersection of Front Street and Concord Street. View looking south on Concord Street.

Participants on the walk audit noted that the intersection of Concord Street and Fountain Street is an important connection for students walking to the Mindess School. There is one lane on each approach and a temporary traffic signal in place due to construction. There is a sidewalk on the north side of Front/Fountain Streets, the east side of Concord Street, and the west side of northbound Fountain Street. There are crosswalks with curb ramps across the eastbound and southbound approaches. Both Fountain Street and Concord Street have wide curb radii at the intersection, resulting in long crosswalks.

The intersection of Front Street at Concord Street and Fountain Street experienced seven reported collisions within the three year time period (2012 through 2014), averaging approximately 2.3 crashes per year. Of the seven crashes reported, one collision resulted in personal injury. Three reported crashes were either sideswipe or angle type and two were rear-end crashes. It was also observed that 57% of the crashes occurred during the drop-off and/or pick-up peak travel hours and no crashes occurred during wet/icy roadway conditions.

Barriers to walking/bicycling to school:

- **Wide curb radii**
- **Long crossing distances**

5 Recommendations

The purpose of this SRTS assessment is to identify barriers to walking and bicycling to school and recommend non-infrastructure and, if applicable, infrastructure projects to address those barriers. This section describes potential non-infrastructure and infrastructure recommendations.

5.1 Non-infrastructure recommendations

The non-infrastructure strategies described below are important to encouraging safe walking and biking to school and may be implemented immediately. SRTS non-infrastructure programming is an important part of increasing the number of students who walk and bike to school and making it safer for those students walking and bicycling.

The Mindess School should increase its SRTS non-infrastructure offerings, including, but not limited to:

- *Early release of walkers and bicyclists.*
  Students should be rewarded for walking and bicycling to school by being dismissed first. Rather than dismissing walking and biking students last to avoid conflicts, students should instead be taught safe skills to navigate traffic on their way home from school.

- *Pedestrian and bicycle safety curriculum.*
  Students must learn safe bicycle and pedestrian skills to safely navigate their way around their town. Understanding traffic rules and safe practices will help students act safely in the pick-up loop and employ safe walking and bicycling skills in the West Driveway.

- *Educational and enforcement campaign to address queuing and idling*.
  Parents should be encouraged to arrive at the school at the actual dismissal time. If parents were to arrive at dismissal, they would likely wait a maximum of 10-15 minutes in the queue to pick up children, as opposed to the 40-50 minutes they currently wait idling along Concord Street, blocking the westbound travel lane and creating unsafe conditions. School staff and law enforcement can actively warn parents who are queuing and idling for a targeted period before handing out tickets and fines. The school should also enforce the no parking rule along the "sidewalk" in the West Driveway where students walk and bike.

- *Crossing guard stationed at the intersection of Concord Street and the West Driveway.*
  Adding a crossing guard at this corner would provide assistance to the walking school bus and likely encourage more families to walk and bike. The majority of school traffic passes through this intersection at dismissal, which may make it challenging for students walking and bicycling. The crossing guard should be moved to the intersection of Concord Street and Raymond Marchetti Street if a sidewalk and crosswalk are constructed on the northern side of Concord Street as recommended below.

5.2 Infrastructure recommendations

The team identified potential infrastructure improvements for each of the sites observed during the walk audit (with the exception of Site #7). Most of the infrastructure recommendations are part of regular maintenance, such as repainting crosswalks and upgrading curb ramps. Several recommendations involve reducing corner radii to slow down vehicles as they turn. Due to the location of many of the recommendations (downtown rather than adjacent to the school) they might be more appropriately funded through Complete Streets.

Details of the recommendations for each site follow. Recommendations and cost estimates are provided to planning level only. Costs estimates do not include any costs associated with permitting, utility impacts, and right-of-way easements.

Site #1: Main Street and Pleasant Street

Identified barriers:

- **Long crossing distances**

Potential recommendation: Add curb extensions to Pleasant Street and realign the crosswalk on Main Street to shorten crossing distances for pedestrians.

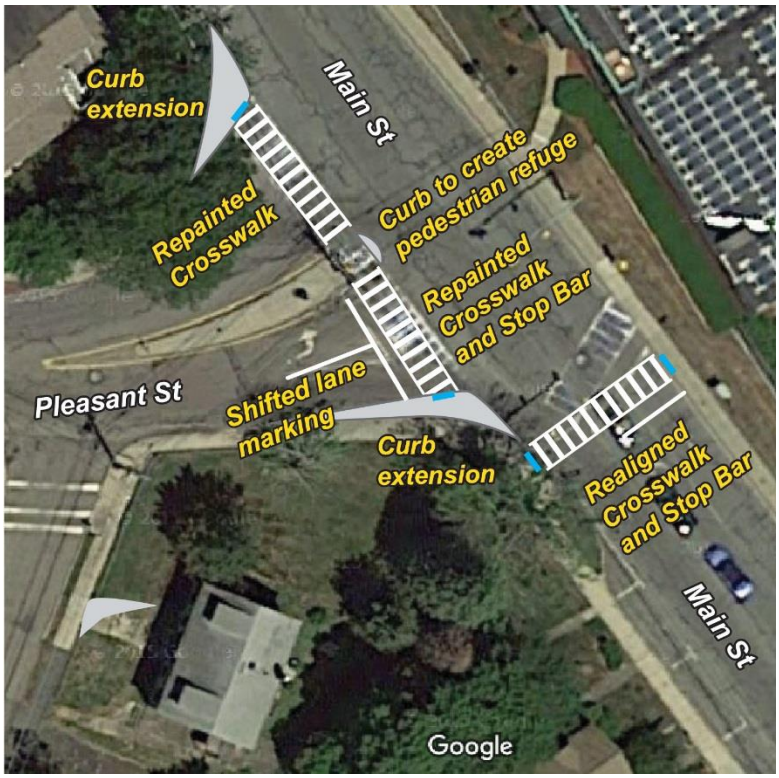


Figure 26: Recommended improvements at the intersection of Main Street and Pleasant Street.

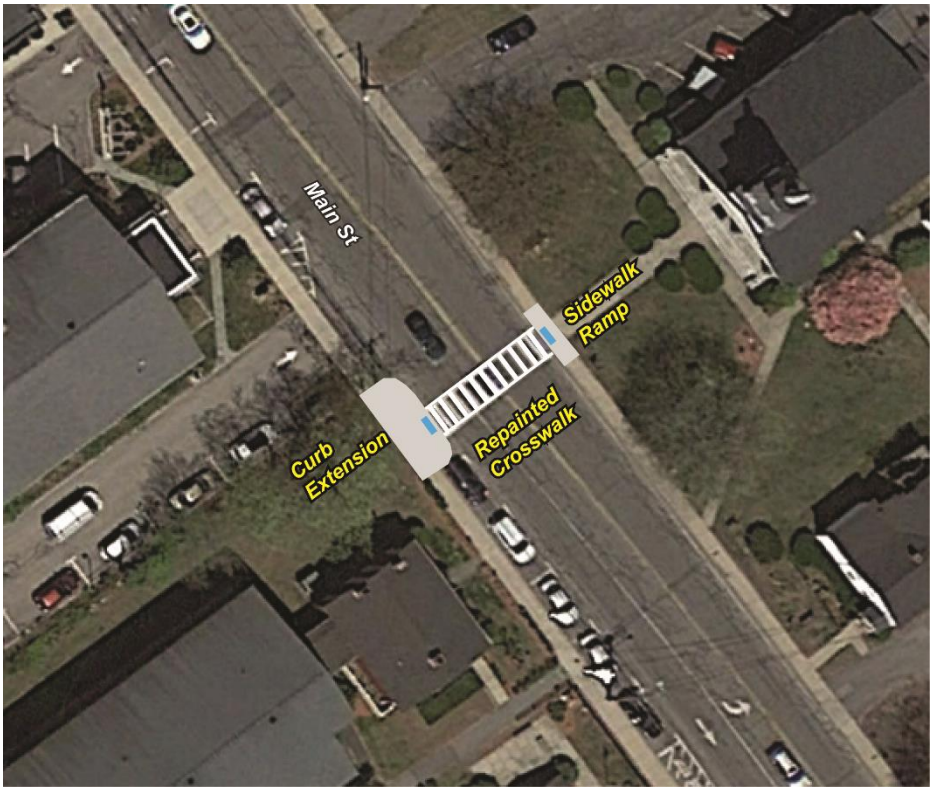
Item	Units	Qty	Price
Crosswalk	EA	3	$ 1,500.00
Curb Extension with ADA Ramp	SY	75	$ 6,450.00
Granite Curbing	LF	230	$ 12,650.00
Curb R&D	LF	125	$ 875.00
Pedestrian refuge	SY	5	$ 430.00
ADA ramp	EA	2	$ 7,800.00
Traffic signal work	LS		$ 15,000.00
Police detail/flaggers (assumed cost)	LS	1	$ 2,200.00
Mobilization	LS	1	$ 1,800.00
Drainage Contingency	LS	1	$ 7,325.00
Subtotal			**$ 56,000.00**
25% Contingency			$ 14,000.00
Construction Total			**$ 70,000.00**

Site #2: Main Street Mid-Block Crosswalk

Identified barriers:

- **Long crossing distance**
- **Lack of visibility**
- **Potential for multiple threat crash due to the added left turn lane**

Potential recommendation: Add curb extension at crosswalk.



Item	Units	Qty	Price
Crosswalk	EA	1	$ 500.00
Curb extension with ADA ramp	SY	23	$ 2,000.00
Granite curbing	LF	30	$ 1,650.00
Curb R&D	LF	40	$ 300.00
ADA Ramp	EA	1	$ 3,900.00
Police detail/flaggers (assumed cost)	LS	1	$ 400.00
Mobilization	LS	1	$ 400.00
Drainage Contingency	LS	1	$ 1,275.00
Subtotal			**$ 10,525.00**
25% Contingency			$ 2,700.00
Construction Total			**$ 13,225.00**

Site #3: Main Street and Front Street

Identified barriers:

- **Long crossing distance**
- **Large curb radii**

Potential recommendation: Add curb extensions and widen the pedestrian refuge on Front Street to shorten pedestrian crossing distance. Add curb ramps to crossings on Main Street to accommodate people with mobility challenges.

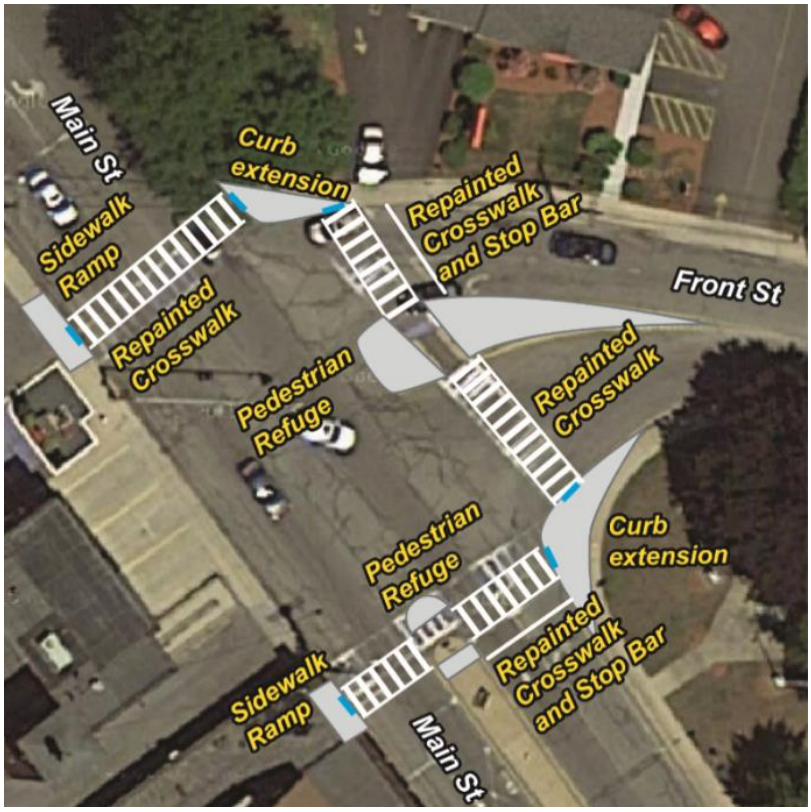


Figure 27: Recommended improvements at the intersection of Main Street and Front Street.

Item	Units	Qty	Price
Crosswalk	EA	5	$ 2,500.00
Curb extension with ADA ramp	SY	120	$ 10,400.00
Granite curbing	LF	380	$ 20,900.00
Curb R&D	LF	200	$ 1,400.00
Pedestrian refuge	SY	120	$ 10,400.00
ADA ramp	EA	2	$ 7,800.00
Traffic signal work	LS	1	$ 15,000.00
Police detail/flaggers	LS	1	$ 3,400.00
Mobilization	LS	1	$ 2,800.00
Drainage Contingency	LS	1	$ 10,300.00
Subtotal			**$ 84,900.00**
25% Contingency			$ 21,300.00
Construction Total			**$ 106,200.00**

Site #4: Front Street and Concord Street and Adjacent Mid-Block Crosswalk

Identified barriers:

- **Missing sidewalk at parking lots on northern side of Front Street**
- **Long crossing distances**
- **Lack of pedestrian visibility**

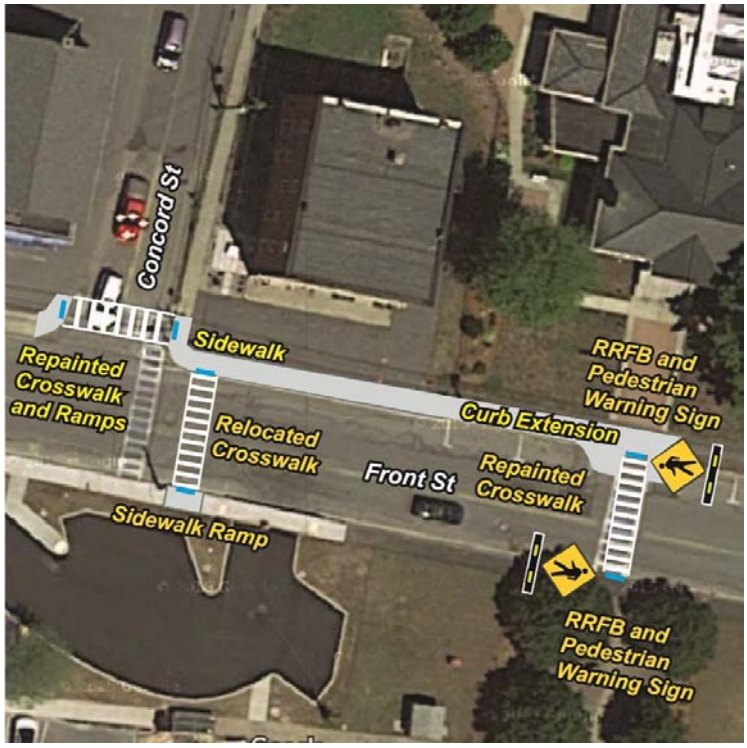


Figure 28: Recommended improvements at the intersection of Front Street and Concord Street.

Potential recommendation: Add two pedestrian warning signs at the uncontrolled crosswalk across Front Street at Concord Street, and two rectangular rapid flashing beacons at the mid-block crosswalk connecting the municipal parking lot to the library at Front Street. Construct concrete sidewalk with granite curbing across the driveway to better define the sidewalk space from parking. Construct a curb extension at the midblock crossing on the north side of Front Street. Realign the crosswalk across Front Street at Concord Street so the crosswalks do not provide apex style curb ramps. Add ADA compliant ramps with detectable warning pads at both crosswalks, and restripe the crosswalk with high-visibility ladder style markings.

Item	Units	Qty	Price
Sidewalk	SY	90	$ 7,740.00
Crosswalk	EA	3	$ 1,500.00
Curb extension with ADA ramp	SY	24	$ 2,100.00
Granite curbing	LF	80	$ 4,400.00
Curb R&D	LF	90	$ 650.00
ADA ramp	EA	5	$ 19,500.00
RRFB	Pair	1	$ 15,000.00
Police detail/flaggers	LS	1	$ 2,540.00
Mobilization	LS	1	$ 2,100.00
Drainage Contingency	LS	1	$ 7,650.00
Subtotal			**$ 63,200.00**
25% Contingency			$ 15,800.00
Construction Total			**$ 79,000.00**

Site #5: Concord Street and Raymond Marchetti Street

Identified barriers:

- **Missing sidewalks and crosswalks**
- **Wide northbound right turning radius**

Potential recommendation: Construct a sidewalk on the north side of Concord Street and on the west side of the Mindess School West Driveway. Reinstall the existing crosswalk with ramps to cross Concord Street at the Mindess School West Driveway. Install a crosswalk and accessible ramps on either side to cross Concord Street at Raymond Marchetti Way. Reduce the wide corner radius on the southeast corner of Concord Street.



Figure 29: Recommended improvements at the intersection of Concord Street and Raymond Marchetti Way and at the west driveway.

Item	Units	Qty	Price
Sidewalk	SY	500	$ 43,000.00
Crosswalk	EA	2	$ 1,000.00
Curb extension with ADA ramp	SY	24	$ 2,100.00
Granite curbing	LF	1010	$ 55,550.00
Curb R&D	LF	100	$ 700.00
ADA ramp	EA	3	$ 11,700.00
Police detail/flaggers	LS	1	$ 5,700.00
Mobilization	LS	1	$ 4,700.00
Drainage Contingency	LS	1	$ 17,200.00
Subtotal			**$ 141,700.00**
25% Contingency			$ 35,000.00
Construction Total			**$ 176,700.00**

Site #6: Concord Street and the west driveway

Identified barriers:

- **Driveway configuration**
- **Long crossing distance**
- **Wide corner radius**
- **Missing sidewalks along driveway and Concord Street west to Raymond Marchetti Street**
- **Poor visibility due to curvature of Concord Street and vegetation**

Potential recommendation: Construct a sidewalk along the east side of Raymond Marchetti Way and an off-road path connecting this new sidewalk to the Mindess School west driveway. Procure an easement from one or more property owners to construct the path. Ideally, this recommendation would be completed in tandem with the recommendation for Site #5, which includes a sidewalk on the northern side of Concord Street and west side of the Mindess School West Driveway.



Figure 30: Recommended Improvements to Connect the Mindess School Driveway to Alfred Road.

Item	Units	Qty	Price
Sidewalk	SY	320	$ 27,600.00
Off-road path	LS	1	$ 30,000.00
Granite curbing	LF	575	$ 31,700.00
ADA ramp	EA	1	$ 3,900.00
Police detail/flaggers	LS	1	$ 4,700.00
Mobilization	LS	1	$ 3,900.00
Drainage Contingency	LS	1	$ 14,000.00
Subtotal			**$ 115,800.00**
25% Contingency			$ 29,000.00
Construction Total			**$ 144,800.00**

Site #7: Concord Street and the east driveway

Identified barriers:

- **Disorganized behavior during dismissal period on the school driveway.**

Potential recommendation: See the non-infrastructure recommendations in Section 5.1 above.

Site #8: Concord Street and Fountain Street

Identified barriers:

- **Wide curb radii**
- **Long crossing distances.**

Potential recommendation: Construct curb extensions to shorten the crossing distance across Concord Street and Front Street.



Figure 31: Recommended improvements at the intersection of Concord Street and Front Street (East).

Item	Units	Qty	Price
Crosswalk	EA	3	$ 1,500.00
Curb extension with ADA ramp	SY	170	$ 14,700.00
Granite curbing	LF	200	$ 11,000.00
Curb R&D	LF	120	$ 900.00
Traffic signal work	LS	1	$ 25,000.00
Police detail/flaggers	LS	1	$ 2,700.00
Mobilization	LS	1	$ 2,200.00
Drainage Contingency	LS	1	$ 8,000.00
Subtotal			**$ 66,000.00**
25% Contingency			$ 16,500.00
Construction Total			**$ 82,500.00**

5.3 Recommendation Cost Estimate Summary

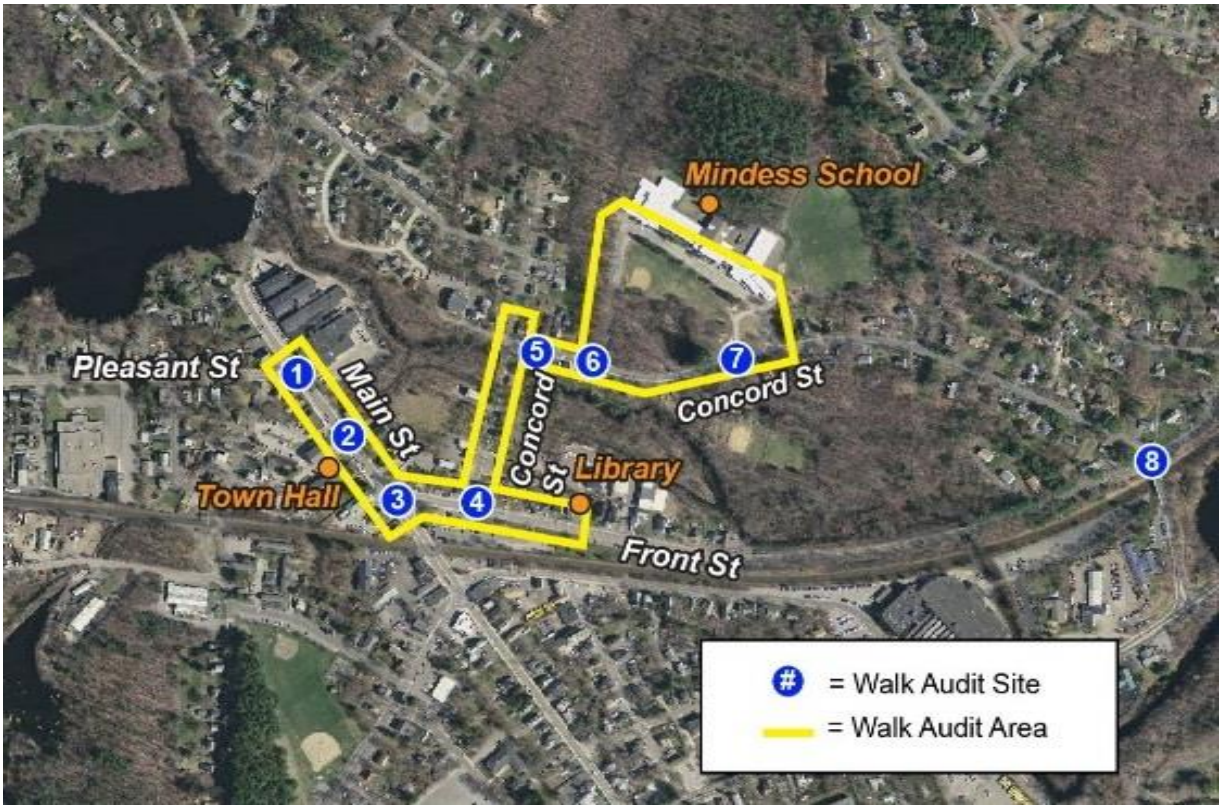


Figure 32: Recommendations Summary

Recommendation	Estimated Cost
1. Main Street and Pleasant Street	$ 69,400
2. Main Street Mid-block Crosswalk	$ 13,200
3. Main Street and Front Street	$ 106,200
4. Front Street and Concord Street	$ 79,000
5. Concord Street and Raymond Marchetti Way	$ 176,700
6. Concord Street and the west driveway	$ 144,800
7. Concord Street and the east driveway	$ 0
8. Concord Street and Front Street	$ 82,500
TOTAL	**$ 671,800**

6 Next Steps

Based on the findings of this assessment and work previously completed for the Mindess School in Ashland, MassDOT does not recommend using MA SRTS funds for an infrastructure project. Rather, the Town may want to consider using MassDOT Complete Streets funding to pursue these recommendations. Given the location of the school near downtown, these improvements will benefit a greater number of community members.

Appendix 1: Parent Survey

MASafeRoutesSurvey.org
Survey Report
Ashland - David Mindess
June 13, 2016

Introduction

This report will help your school plan safe transportation options for all students. It contains the results of a survey conducted at Ashland - David Mindess in June 2016. Participating parents provided information about how students travel to school and their approximate home location. If your school is interested in

- reducing traffic congestion,
- encouraging walking and biking,
- increasing safety, or
- tracking progress towards community goals,

then this information can help you identify the right strategies and best opportunities for new projects and investments.

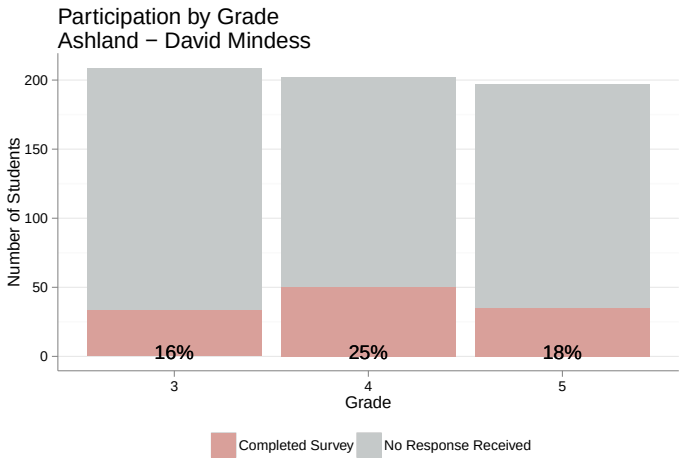
How to Read This Report

This report measures distance to school in terms of walksheds and bikesheds. A *walkshed* includes all the homes within a certain distance to school, based on mapped sidewalks, pedestrian paths, and low volume roadways. We define walksheds for 0.5, 1.0, and 1.5 mile walking distances to school. A *bikeshed* of 2.0 miles also includes multi-use paths and on-road cycle facilities, where mapped. For a map of the walksheds and bikesheds, see the last page of the report. Where "walkshed" is used alone, it always includes the bikeshed of the same distance.

Survey Statistics

- Survey Dates: 2016-06-02 to 2016-06-16
- Responses Received: 119
- School-wide Participation Rate: 20%

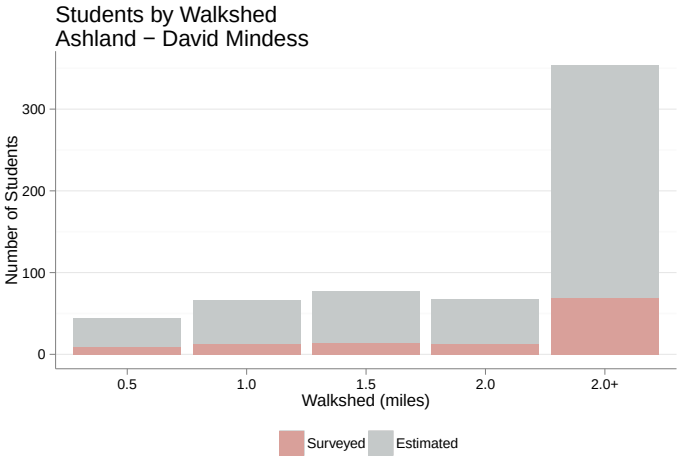
The figure below shows the survey participation rate for each grade. Total enrollment is based on the 2015-2016 school year, per Department of Elementary and Secondary Education. Survey responses from each grade were used to estimate the distance and travel choice for the entire grade.The higher the participation rate, the more reliable the survey results are.



Student Proximity

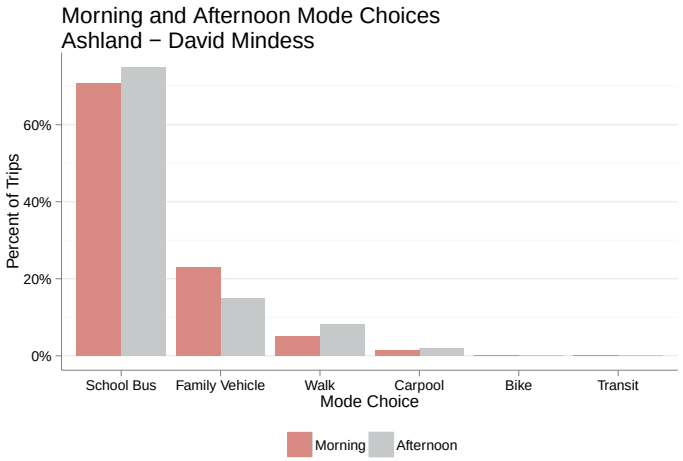
- Average Distance to School: 2.2 miles
- Within 1.0 Mile Walkshed: 18%
- Within 2.0 Mile Bikeshed: 42%

The chart and table below show the number of students surveyed and the total estimated students by walkshed. Student totals by walkshed are estimated assuming that the proportion of surveyed students within each walkshed and grade is proportional to the enrolled students within each walkshed and grade.

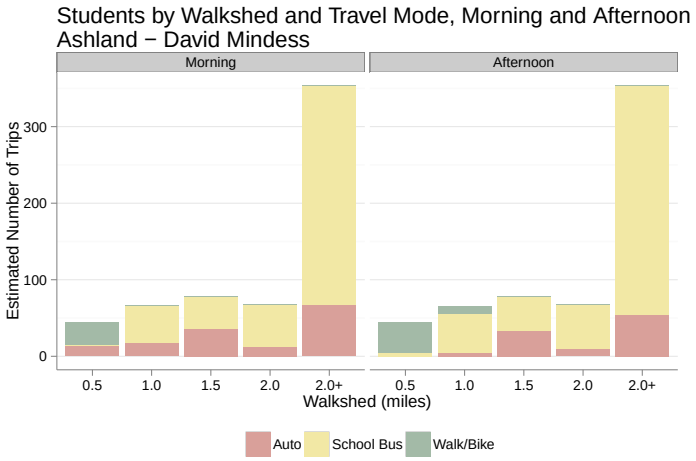


Students By Walkshed

Students	0.5	1.0	1.5	2.0	2.0+
Estimated	44	66	77	67	353
Surveyed	9	13	15	13	69
Percent	7%	11%	13%	11%	58%



Walk share is 4.9% in the morning and 8.2% in the afternoon. The auto share is lower in the afternoon, indicating that as many as 30.8% of those who are driven to school in the morning get home by other means in the afternoon.



Student Travel Choices

- Walk\Bike Trips Within One Mile: 36%
- Walk\Bike Trips Overall: 7%
- Family Vehicle\Carpool Trips Overall: 21%
- School Bus Trips Beyond One Mile: 79%

The chart below shows what percent of trips are made by each travel mode in the morning and afternoon.

Travel Mode, Morning and Afternoon

	0.5	1.0	1.5	2.0	2.0+
Morning					
Auto	14	18	36	12	68
School Bus	0	48	42	55	285
Walk	30	0	0	0	0
Afternoon					
Auto	0	4	34	10	54
School Bus	4	52	43	57	299
Walk	40	10	0	0	0

Greenhouse Gas Emissions (GHG)

- Per-student GHGs within 1 mile: 154 kg
- Per-student GHGs beyond 1 mile: 1778 kg

Transportation generates more than one-third of the total greenhouse gas (GHG) emissions produced in Massachusetts. Increasing the number of trips made by walking or biking is a critical step toward achieving state goals for GHG reduction. The following table shows the estimated annual GHG emissions (in kilograms of CO2) for students being driven to school, by walkshed. (It does not include emissions from school buses.) For comparison, the average Massachusetts household drives about 19,000 miles per year, generating approximately 8,000 kg of GHG emissions.

Buffer	Total (kg)	Per Student	Percent
0.5	9482	78	1%
1.0	28131	231	4%
1.5	116626	956	17%
2.0	33741	277	5%
2.0+	500239	4100	73%

How Your School Compares

The table below compares your school's actual walk \bike share to an expected value reflecting average walking and biking rates across Massachusetts. The expected value accounts for student grade levels and proximity to school, and is based on more than 6,000 surveys collected statewide since 2011.

Actual and Expected Walk\Bike Share

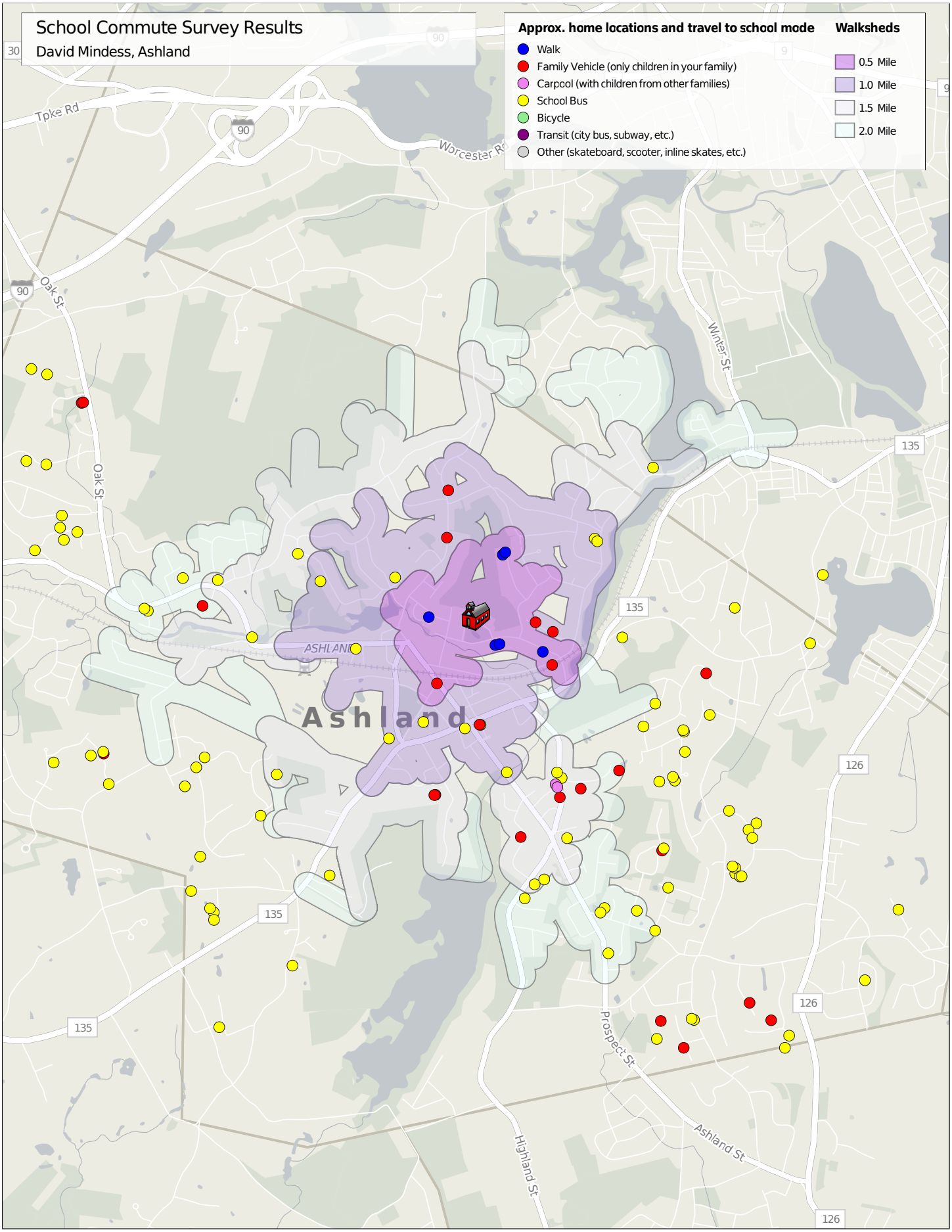
	0.5	**1.0**	**1.5**	**2.0**	**2.0+**
Actual	79%	7%	0%	0%	0%
Expected	64%	30%	10%	5%	3%

Benefits of Walking and Biking

Shifting some school commutes from auto to walking or biking can create real benefits for your community. This section estimates the traffic, physical activity, and GHG benefits that might result from increasing walking and biking. It can help you make the case for investing in Safe Routes to School programs and to track your progress over time.

If your school achieved the "expected" values described above based on grade specific averages for each walkshed, it would:

- Reduce number of daily car trips to and from school by 67.
- Provide an additional 50 minutes of physical activity for each newly participating student.
- Reduce annual auto-generated GHG emissions from between 11,454 kg to 17,682 kg, or 1.7% to 2.6%.


School Commute Survey Results
David Mindess, Ashland
Approx. home locations and travel to school mode
Walk
Family Vehicle (only children in your family)
Carpool (with children from other families)
School Bus
Bicycle
Transit (city bus, subway, etc.)
Other (skateboard, scooter, inline skates, etc.)
Walksheds
0.5 Mile
1.0 Mile
1.5 Mile
2.0 Mile
Ashland
Tpke Rd
Worcester Rd
Oak St
Winter St
Prospect St
Ashland St
Highland St
90
135
126

This report was prepared by:



January 2017