

2015 Safe Route to School Walk Audit Findings Report



Washington Elementary School Waterbury, CT

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INTRODUCTION

A walk audit was performed by CTDOT's "Safe Route to School" (SRTS) consultant, VN Engineers, Inc. and AECOM for Washington Elementary School in Waterbury on September 14th, 2015. Washington Elementary School serves 366 students from kindergarten through 5th grade. The purpose of a SRTS walk audit is to assess the existing conditions of the walking and biking routes to school and to identify the issues that may discourage or prevent walking and bicycling. SRTS audits are performed by transportation professionals experienced in traffic, pedestrian, and bicycle operations and design. These professionals assess and review factors that can promote or obstruct safe walking and bicycling routes to school. Some of these factors include social aspects; traffic volumes and speeds; topography or presence/absence of sidewalks; and/or bicycle facilities.

The audit for Washington Elementary School followed standard walk audit protocol. Before the site visit was conducted, the CTDOT SRTS team analyzed the area topography and the routes surrounding the school. Available on-line imagery was used to study and assess the most prevalent routes, adjacent land use, sight distance issues, sidewalk locations, on-street parking, and other site-specific issues.

Following the initial review, the CTDOT SRTS team visited the site to observe arrival and dismissal operations. During class sessions, the team walked throughout the surrounding neighborhoods to evaluate pedestrian walking and biking routes. Measurements and photographs were taken of the focus area and school officials were interviewed by the SRTS team to document current perceptions and conditions surrounding school transportation.

The SRTS audit team found that the area around Washington Elementary School and the various walking routes are generally in poor condition with few locations with appropriate safety amenities in place. The team identified infrastructure issues that could be considered in the short and long-term. The main issue is pedestrian safety, which is a function of deteriorated sidewalks; sidewalk obstructions; pavement and faded crosswalks within the immediate area of the school; and parking on sidewalks on walking and biking routes. The percentage of walking/biking students at Washington Elementary School appears high. The school reported 80% of students walk to school. The remaining means of transportation reported by the school was 20% by school bus and parent drop-off/pick-up. The school utilized a combination of one large bus and one mini-bus on the day of the assessment. If the district wishes to increase the safety for students walking and biking to school, they could initiate pedestrian and bicycling educational and encouragement campaigns.

The following subjects are discussed below:

- Existing Features and Walking Routes
- School parent drop-off and bus drop-off area
- Assessments of Pedestrian and Bike Routes
- Recommendations

Figure 1 shows an overview of the Washington Elementary School study area.

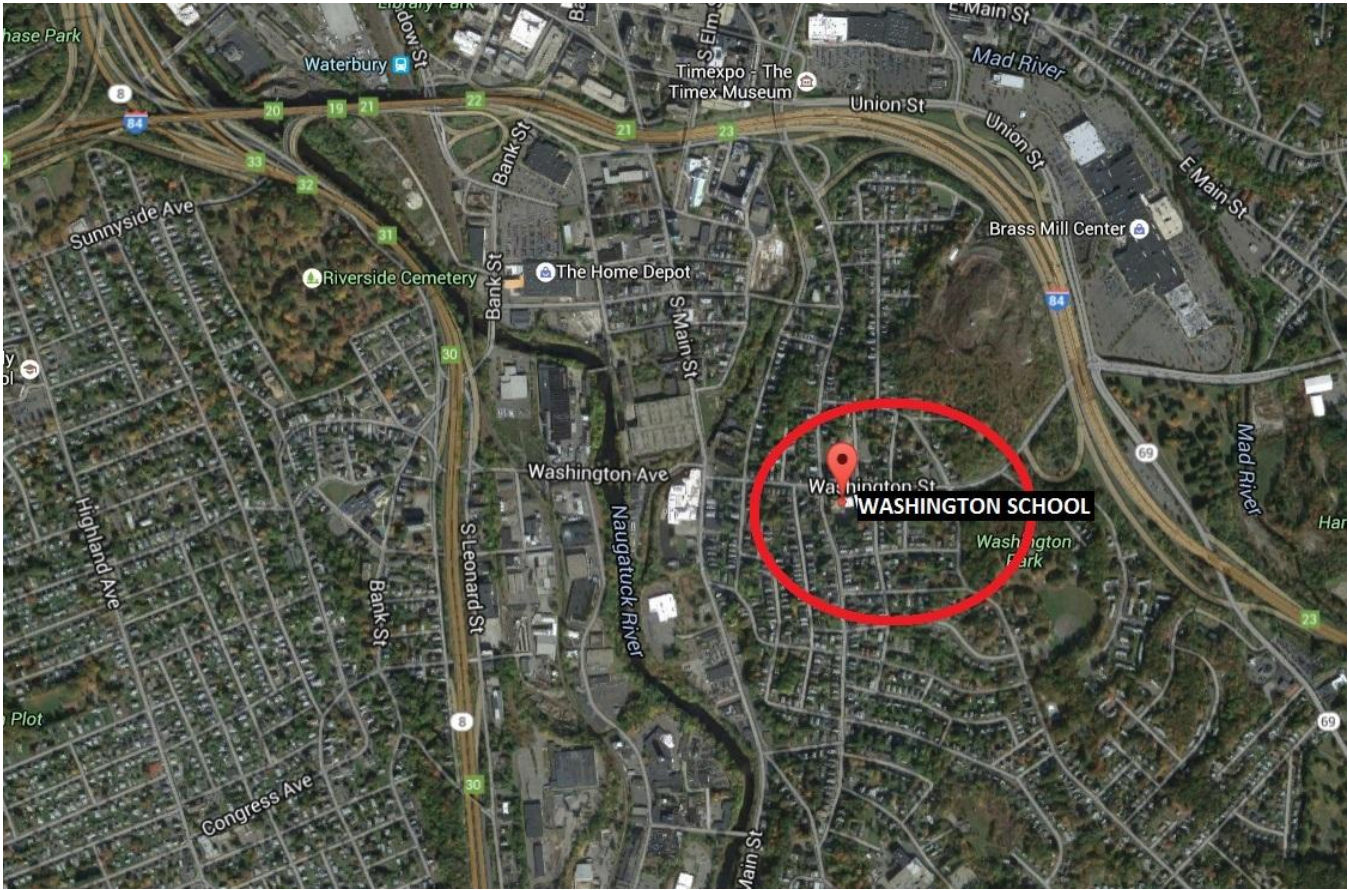


Figure 1: Washington Elementary School

1 EXISTING FEATURES AND WALKING ROUTES

The SRTS Committee members identified that the following three routes were used by most of the pedestrian students attending Washington Elementary School:

- **Route 1:** Washington Street, South Street and Lounsbury Street, west of the school;
- **Route 2:** Baldwin Street and Madison Street, central to the school; and
- **Route 3:** Washington Street, Fairmount Street, Laval Street and Madison Street, east of the school.

This study examines these routes, along with all other potential walking routes within an approximate 0.5 mile radius of Washington Elementary School.

1.1 Washington Elementary School Surrounding Area

Washington Elementary School is situated in an urban Waterbury neighborhood. There are few trees along Washington Street and Baldwin Street and little shade provided. School begins at 8:00 am, but students are allowed to enter the building starting at 7:40 am through the front entrance facing Baldwin Street and the side entrance facing Washington Street as shown in **Figure 2**. Parents/adults are not allowed to enter through the side entrances, they are only allowed through the front door. Walkers tend to arrive around 7:40 am, while bused students typically arrive around 7:35 am. The highest concentration of students arriving was from 7:40-7:55 am.



Figure 2: Student Drop-off Location at East Side Paved Playground

Most parents walk their children to the school's paved playground where students play before school day commences. Some parents drive their children to the school, parking mainly along Washington Street, Xavier Street and Fairmount Street east of the paved playground and a few parked on Baldwin Street. A total of 14 vehicles were observed parking on Washington Street to drop-off children, causing conflicts with vehicles passing through. Some parents were observed parking on the sidewalk and obstructing the ability to walk on the sidewalk as seen in **Figure 3**.



Figure 3: Parents parked on Washington Street sidewalk

There were several parents observed crossing dangerously in front of vehicles without the crossing guard. Those that parked on Fairmount Street used the stairs off of Fairmount Street that lead down to the paved playground. Vehicles heading westbound on Washington Street were observed driving downhill at fairly high speeds past the school.

Heavy trucks were also observed traveling in both directions. Eastbound traffic visibility on Washington Street during the morning arrival period was obscured by sun glare.

During the morning drop-off, one full-sized bus and one mini-bus arrived in front of the paved playground on Washington Street. The traffic was not heavy during drop-off, but there are few locations for the bus to wait until students are allowed off the bus. This causes confusion for some drivers who then attempted to move around the bus as seen in **Figure 4**. In general, the bus drop-off process with buses lining up along Washington Street and waiting for the first bell to sound to let the students off the buses is fairly quick and functions rather well.



Figure 4: Vehicles driving around a stopped bus

The City of Waterbury has assigned two crossing guards dedicated to students walking to and from Washington Elementary School. One crossing guard indicated she had not been trained while the other had not received training for several years. These two crossing guards are stationed at the following key intersections:

- Washington Street Xavier Street
- Baldwin Street and Washington Street



Figure 5: Crossing Guard holding STOP sign in upward position when not in use

During the arrival and dismissal, crossing guards were often seen holding the stop signs in an upward position when not in use (**Figure 5**). They were also observed stepping out into traffic before motorists were alert and at an appropriate speed to stop. Most children walking north towards the school on Baldwin Street squeezed between two fences at the corner of the school lot (**Figure 6**). A few parents followed the children between these two fences.

The school day at Washington Elementary School ends at 2:15pm with children lining up on the paved playground. The bus dismissal and student pick-up begins at 2:20 pm. The bus dismissal process is similar to the morning drop-off where the bus waits on Washington Street north of the paved playground, while the parents walk to the paved playground or park along Fairmount Street or Xavier Street (few parents parked on Washington Street during pick-up). Some parents were observed waiting at the paved playground until the bell rang. Teachers are situated within the school's paved playground during dismissal. Many students exit the side steps to Fairmount Street and walk southbound.

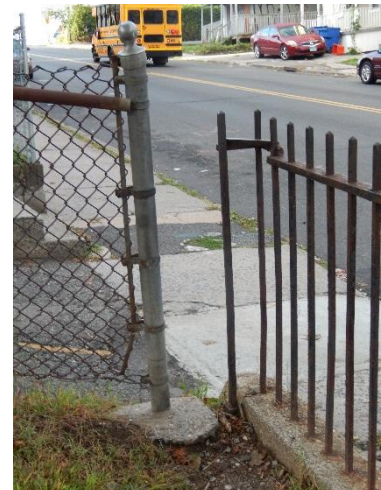


Figure 6: Break in Fence at Southwest Corner of School Lot

There are no bicycle racks located at Washington Elementary School. No children were observed biking to school. Teachers park in the main parking lot behind the school.

Table 1 provides an overview of key characteristics for major streets within the immediate area.

A plan map of the pedestrian routes to Washington Elementary School is shown in **Figure 7**. The walkable areas to Washington Elementary School are shown within the blue line. This area is bounded by Washington Street, Lounsbury Avenue, Madison Street, Baldwin Street, Glen Street and Sylvan Avenue. Since there is a high concentration of homes, this area is assessed by dividing it into three zones: (1) west, (2) central, and (3) east as shown in **Figure 8**, **Figure 13** and **Figure 17** below.

Table 1: Washington Elementary School Street Inventory

Street Name	Street Width	Direction of Travel	Existing Sidewalk	Sidewalk Width	Sidewalk Condition	Curb Ramps	Curb	Parking Observed on Sidewalk	Sidewalk Buffer	Crime Area
Washington St	27 ft	Two-way traffic	YES	6 ft	Good	NO (only ADA compliant at Baldwin St, w/ detectable warning strip, and Fairmount St, no ramp in front of school)	YES	YES	NO	YES
Baldwin St	34-36 ft	Two-way traffic	YES	5-6 ft	Fair to Good	No (only at Washington St)	YES	NO	NO	YES
South St	24-27 ft	One-way traffic	YES	5-6 ft	Poor	NO	YES	NO	NO	YES
Fairmount St	26-30 ft	Two-way traffic	YES	5 ft	Poor (New at intersection with Madison St)	YES (only at intersection with Lounsbury St and Washington St)	YES	YES	NO	YES
Lounsbury St	27 ft	Two-way traffic	YES (all on north side, partial on south side)	5-6 ft	Poor	NO (new curb ramps with detectable warning strips only at Lounsbury St at Fairmount St)	YES	NO	YES	YES
Madison St	28 ft	Two-way traffic (East of Baldwin St) One-way traffic (West of Baldwin St)	YES (All on east side, partial on west side)	5 ft	Fair to Poor (New portion of concrete, deteriorated asphalt sidewalk)	NO	YES	YES	NO	YES
Xavier St	27 ft	One-way traffic	YES	5-6 ft	Fair to Poor	Yes (not ADA Compliant, no detectable warning strips)	YES	NO	NO	YES
Southview St	28 ft	Two-way traffic	YES	4-6 ft	Poor	NO	YES	YES	NO	YES
Donahue St	20 ft	Two-way traffic	YES (none on east side)	6 ft	Good west side None east side	NO	NO	NO	NO	YES
Keefe St	27-28 ft	Two-way traffic	YES (no sidewalk on south side east of Fairmount St)	4 ft	Fair to Poor	NO	YES	YES	NO	YES
Luke St	27 ft	Two-way traffic	YES	4-5 ft	Poor	NO	YES	NO	NO	YES
Rye St	27 ft	Two-way traffic	YES	5-6 ft	Poor	NO	YES	NO	NO	YES

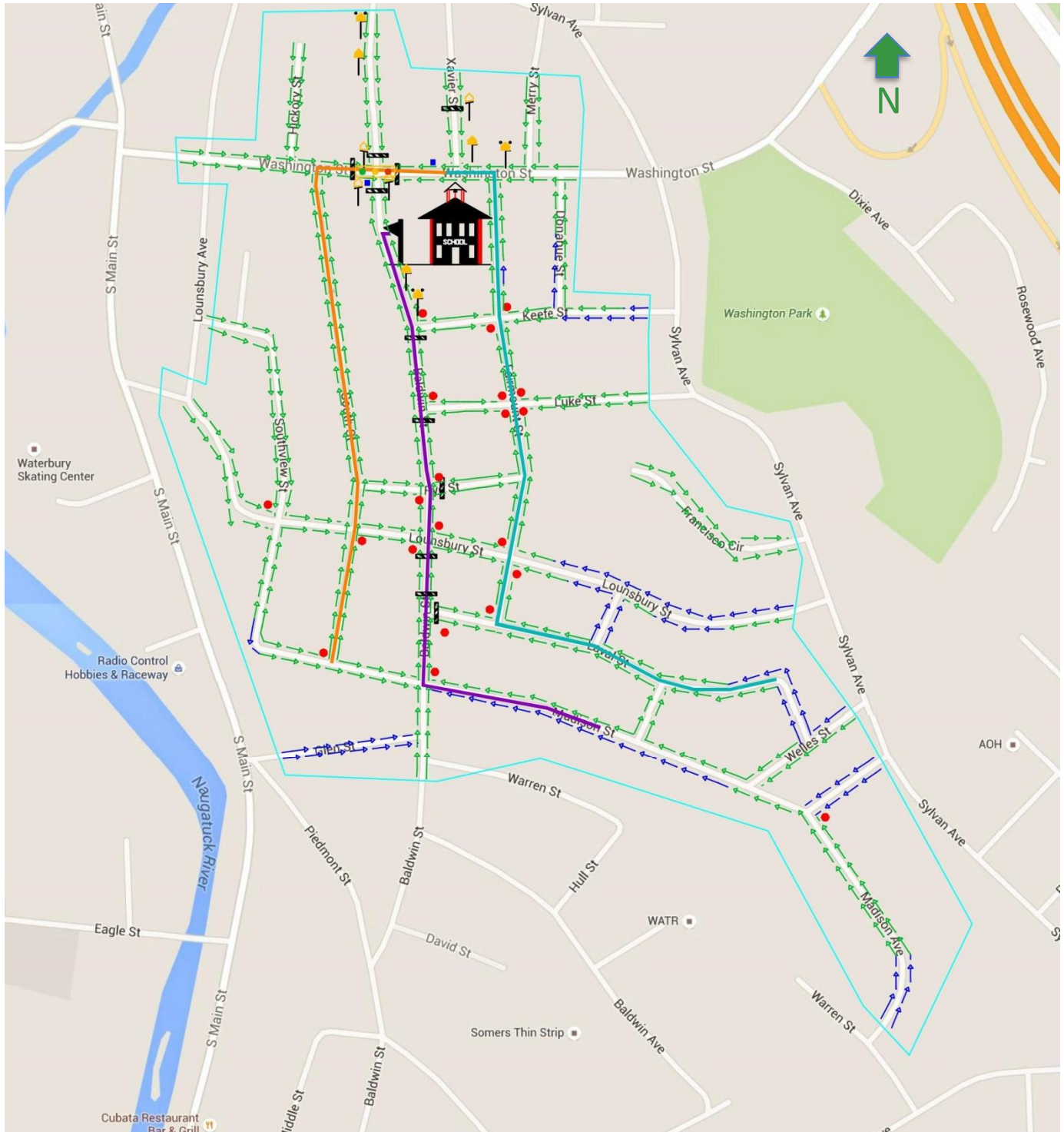


Figure 7: Washington Elementary School Plan Map

KEY :

- CROSSWALK
- STOP SIGN
- TRAFFIC SIGNAL
- CROSSING GUARD
- SCHOOL CROSSING
- CROSSWALK SIGN
- FLASHING SCHOOL SIGN



- WALKING DIRECTION
- WALKING DIRECTION WITH SIDEWALK
- SCHOOL ZONE
- TOWN LINE
- ROUTE # 1
- ROUTE # 2
- ROUTE # 3
- ROUTE # 4



1.2 Pedestrian Zone# 1: West of Washington Elementary School

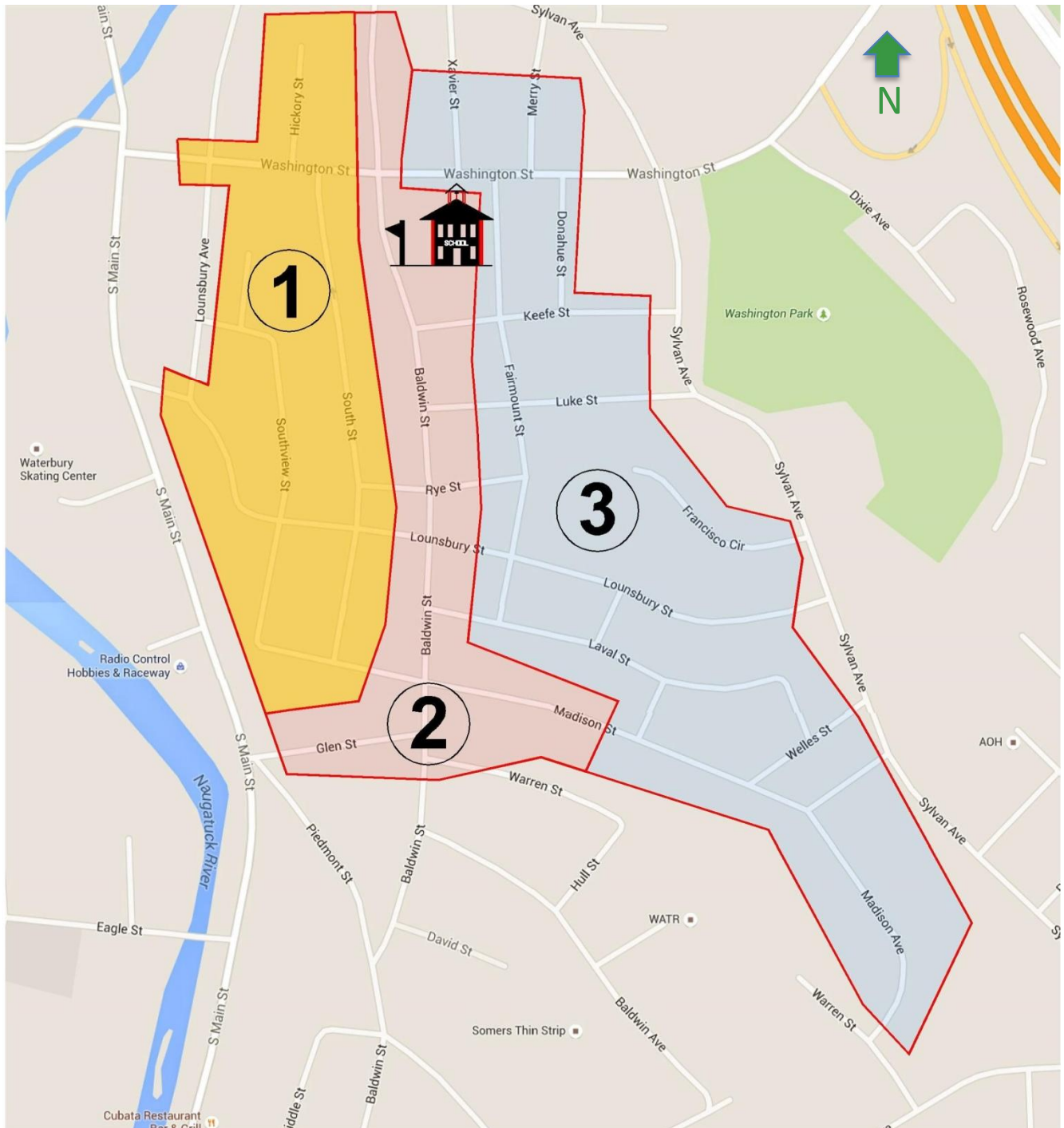


Figure 8: Pedestrian Zone # 1

Pedestrian Zone #1 is bounded by Lounsbury Avenue to the west, South Street to the east, Madison Street to the south and Washington Street to the north (orange fill). The main roads for pedestrian access to Washington Elementary School in Pedestrian Zone #1 include Lounsbury Street, South Street and Washington Street. From the furthest point at South Street and Madison Street, the route is about 0.4 miles to the front entrance of Washington Elementary School, as shown in **Figure 8**.

1.2.1 Roadway and Pavement Marking Conditions

In general, the sidewalk pavement quality is in poor condition. The roadway along South Street appears deteriorated along the entire length. There are no stop bars, crosswalks or double yellow center lines on South Street, Southview Street, Lounsbury Street or Hickory Street. There are only double yellow center lines along Washington Street within this pedestrian zone. There are no designated “SCHOOL ZONE” pavement markings or “SCHOOL SLOW” pavement markings within the immediate vicinity of the school.

Along the potential walking and biking route there are no handicap ramps and detectable warning strips on South Street at Washington Street, Hickory Street at Washington Street, and South Street at Lounsbury Street.

The intersection of Lounsbury Street and Lounsbury Avenue is approximately 58 feet wide on the west leg, and has no stop control on Lounsbury Street. This could potentially cause issues for pedestrians crossing the roadway. There are also no handicap ramps, crosswalks or refuge islands for pedestrians crossing at this location. There are also obstructions along South Street such as trash bins and mattresses on the sidewalk as seen in **Figure 9**. There was a wire hanging from overhead as seen in **Figure 10**. Improvements for sidewalk obstructions, handicap ramps and crosswalks can be made throughout all three zones. **Table 2** lists issues found in Pedestrian Zone #1.



Figure 9: Trash Bins and Mattress Obstructions on South Street



Figure 10: Hanging Overhead Wire on South Street

Table 2: Sidewalk Obstructions/ Crosswalk/ Handicap Ramp Locations in Pedestrian Zone # 1

Location	Leg of Approach(es)	Issue	Quantity
South Street	Mid-block	Dangling overhead wire	1
Lounsbury Street/ Lounsbury Avenue	N/ E/ W	No handicap ramps for any approaches and no crosswalks	4
South Street/ Washington Street	W	No ADA compliant handicap ramps	2
TOTALS			7

1.2.2 Signs

There are no posted speed limit signs in the eastbound direction along Washington Street in Pedestrian Zone # 1. There is a 25 mph sign on Lounsbury Street at Lounsbury Avenue and on South Street north of Rye Street with an outdated "WATCH CHILDREN" sign as seen in **Figure 11**. On Washington Street there are no school warning signs on the eastbound approach towards the school in this pedestrian zone. There are also a number of NO PARKING ANYTIME signs and a CRIME STOPPERS warning sign.



Figure 11: Speed Limit and Watch Children Sign on South Street

There are one-way signs for South Street only at the intersection with Washington Street, and there is a one-way sign for Madison Street within this pedestrian zone at South Street. It is unclear if South Street is two-way between Lounsbury Street and Madison Street¹. There are TURN AHEAD signs on Lounsbury Street east of Southview Street and on Madison Street west of South Street. None of these signs are yellow-green fluorescent as specified by the Manual on Uniform Traffic Control Devices (MUTCD).

1.2.3 Sidewalks

With the exception of a portion of Madison Street at Southview Street, all streets within Pedestrian Zone #1 have sidewalks on both sides of the road. None of these sidewalks have grass buffers between the sidewalk and the roadway. Sidewalks in Pedestrian Zone #1 are typically 5-6 feet wide. The sidewalk pavement at all locations along potential walking and biking routes were in poor condition. Most were deteriorated, upheaved with vegetation overgrowth between the cracks. The sidewalk on the west side at South Street south of Lounsbury Street is completely deteriorated as seen in **Figure 12**. There are areas with utility poles obstructing the width of the walking path, and at some locations there were two utility poles side-by-side. There are also no ADA compliant handicap ramps with detectable warning strips within this pedestrian zone.



Figure 12: Deteriorated Sidewalk on South Street

1.2.4 Crime

The school principal stated that crime is an issue throughout the neighborhood. However, this does not prevent parents and children from walking in the area.

¹ If South Street is one-way for the northbound direction for the entire length, then there would be no need for the one-way sign on Madison Street South of South Street.

1.3 Pedestrian Zone # 2: Central to Washington Elementary School

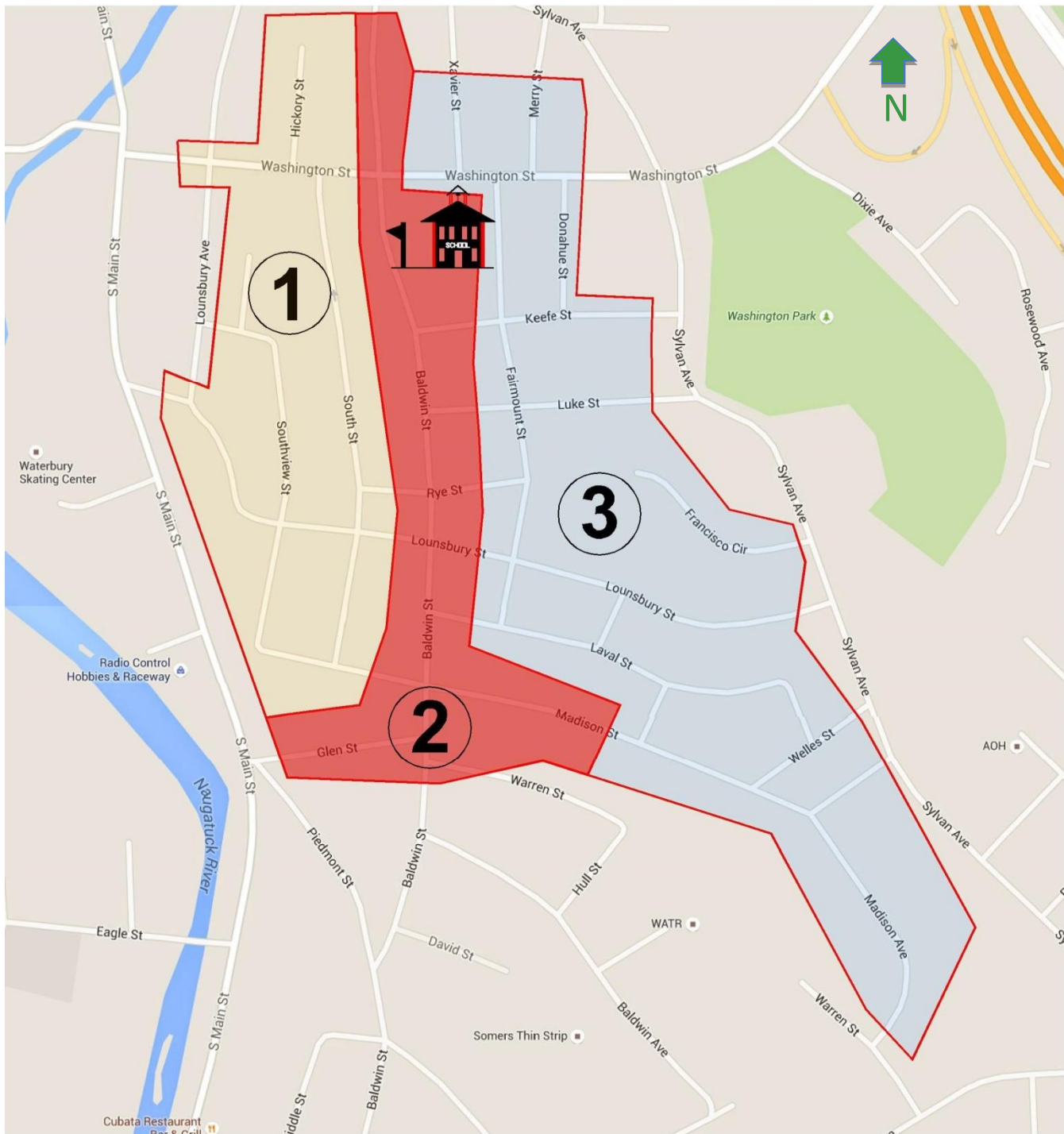


Figure 13: Pedestrian Zone # 2

Pedestrian Zone # 2 is bounded by South Street to the west, Fairmount Street to the east and Madison Street and Glen Street to the south (maroon fill). The main roads for pedestrian access to Washington Elementary School in Pedestrian Zone # 2 include Baldwin Street and Madison Street. The longest walking route is approximately 0.4 miles long from the southernmost point on Glen Street and Baldwin Street to the front entrance of Washington Elementary School, as shown in **Figure 13**.

1.3.1 Roadway and Pavement Marking Conditions

In general, the sidewalk pavement quality in Pedestrian Zone # 2 is in poor condition. Pavement markings along this route are comprised of stop bars and crosswalks with double yellow center lines on Baldwin Street. There are no edge lines along any roadways within this pedestrian zone. There are no designated “SCHOOL ZONE” pavement markings or “SCHOOL SLOW” pavement markings within this pedestrian zone. The intersection of Baldwin Street at Washington Street has recently been updated with newly installed pedestrian push buttons on all approaches.



Figure 14: Mid-block Crosswalk at Keefe Street without handicap ramps

There are crosswalks on all approaches at the intersection of Baldwin Street and Washington Street. Along Baldwin Street there are crosswalks across the minor roadway at the intersections with Lounsbury Street, Rye Street and Laval Street. There are also mid-block crosswalks on Baldwin Street at Keefe Street, Luke Street, Lounsbury Street, Laval Street and Madison Street. All mid-block crosswalks do not have handicap ramps at each end as shown in **Figure 14**. A vehicle was seen parked in the mid-block crosswalk on Baldwin Street at Lounsbury Street. The southeast corner of the intersection of Laval Street and Baldwin Street has a utility pole in the path of a potential handicap ramp for the mid-block crosswalk. All of these mid-block crossing locations could be improved as listed in **Table 3**.

Table 3: Sidewalk Obstructions/ Crosswalk/ Handicap Ramp Locations in Pedestrian Zone # 2

Location	Leg of Approach(es)	Issue	Quantity
Baldwin Street/ Keefe Street	S	Mid-block crosswalk without handicap ramps	1
Baldwin Street/ Luke Street	S	Mid-block crosswalk without handicap ramps	1
Baldwin Street/ Lounsbury Street	S	Mid-block crosswalk without handicap ramps Vehicles parked within crosswalk	2
Baldwin Street/ Laval Street	N	Mid-block crosswalk without handicap ramps	1
Baldwin Street/ Madison Street	S	Mid-block crosswalk without handicap ramps Utility Pole in middle of potential handicap ramp location	2
TOTALS			7

1.3.2 Signs

Within Pedestrian Zone #2, the posted speed limit for Baldwin Street in the immediate vicinity of the school is 25 mph. There is a 25 mph SPEED LIMIT WHEN FLASHING sign for the northbound direction on Baldwin Street north of Keefe Street and a standard speed limit sign at Glen Street for the northbound direction. A 25 mph sign on Baldwin Street for the southbound direction south of Laval Street, is obstructed by vegetation. For the southbound direction, there is a 25 mph SPEED LIMIT WHEN FLASHING sign on Baldwin Street south of Sylvan Avenue.

On Baldwin Street north of Keefe Street, there is a SCHOOL CROSSING sign with a NO PARKING FIRE LANE sign mounted below. This sign is missing an AHEAD sub-plate. Further north at the intersection with Washington Street is another SCHOOL CROSSING sign with a downward arrow sub-plate. Approximately 80 feet south of the flashing speed limit sign mentioned earlier on Baldwin Street south of Sylvan Avenue, is another SCHOOL CROSSING sign for the southbound direction. This sign is also missing an AHEAD sub-plate. At the intersection with Washington Street is a SCHOOL CROSSING sign with a downward arrow sub-plate for the southbound direction. All four of these SCHOOL CROSSING assemblies are new MUTCD specified yellow-green fluorescent.

There are also a number of NO PARKING ANYTIME signs, NO PARKING FIRE LANE signs and NO PARKING SNOW ROUTE warning signs on Baldwin Street. Ideally, these signs prevent cars from parking in the vicinity of the school, which should positively impact the visibility and travel space for both walkers and bikers. There is a one way sign for the portion of Madison Street that is west of Baldwin Street. There is a bus route along Baldwin Street that has bus route stops at Glen Street, Rye Street and Washington Street for both approaches. The street name sign for Glen Street has been bent between two poles as seen in **Figure 15**. Along this route, there is a fire station at the intersection of Baldwin Street and Luke Street with a "SAFE PLACE" sign on the front of the building facing Baldwin Street.



Figure 15: Glen Street Sign Bent between Two Poles

1.3.3 Sidewalks

There are sidewalks on both sides of the street throughout Pedestrian Zone # 2 with the exception of Madison Street east of Baldwin Street which has sidewalk only on the north side. There are no grass strips throughout this pedestrian zone, which typically serves as a buffer between traffic and pedestrians using the sidewalk. The sidewalks are typically 4-6 feet wide. Sidewalks in the immediate vicinity of the school on Baldwin Street are in fair condition, with the exception of the completely deteriorated curbing along the sidewalk in front of the school as seen in **Figure 16**. The remaining sidewalks



Figure 16: Completely deteriorated curb along Baldwin Street

throughout this pedestrian zone are in poor condition; particularly the deteriorated sidewalks on the side streets between Baldwin Street and Fairmount Street.

1.3.4 Crime

The school principal stated that crime is an issue throughout the neighborhood. However, this does not prevent parents and children from walking in the area.

1.4 Pedestrian Zone # 3: East of Washington Elementary School

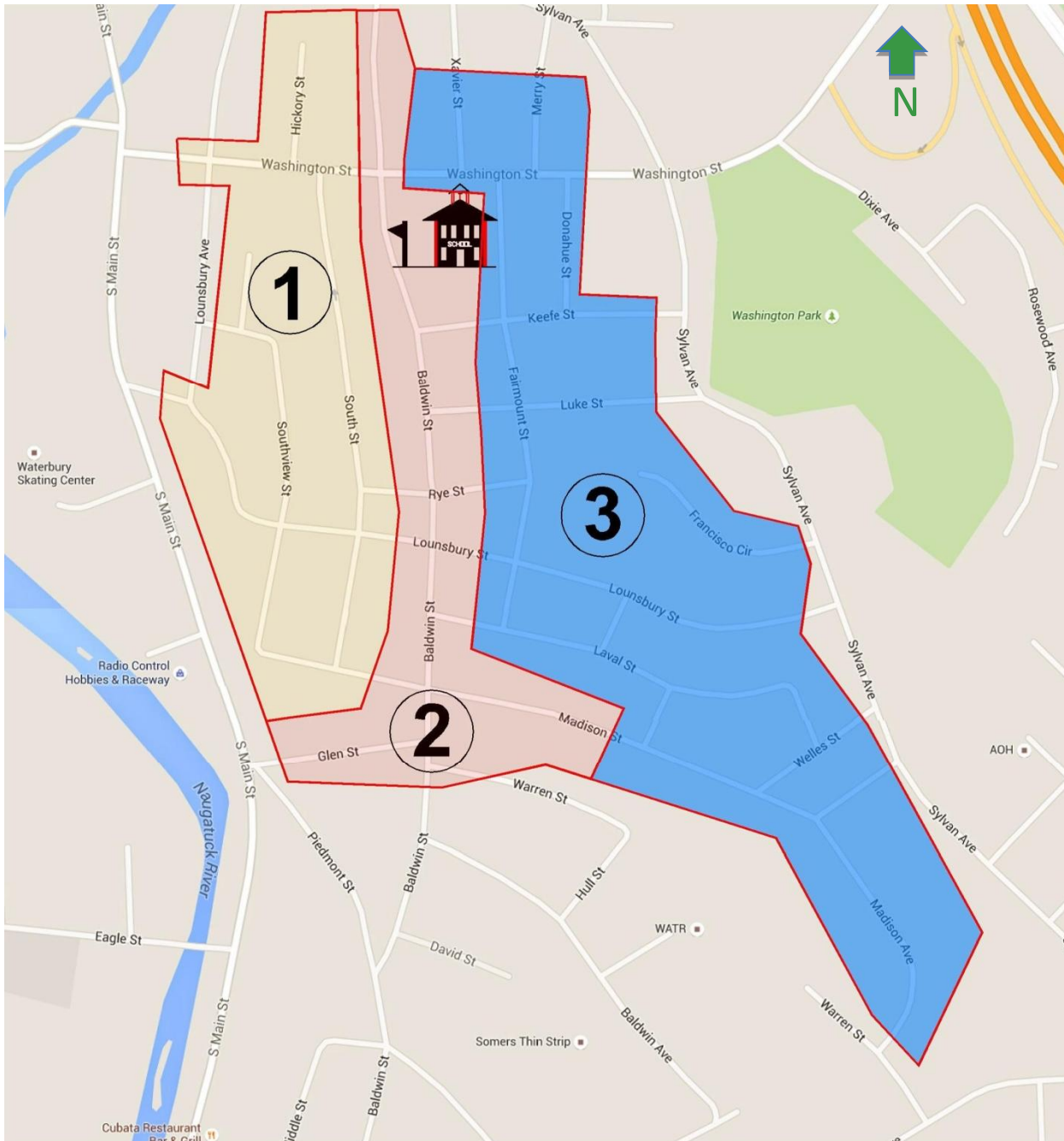


Figure 17: Pedestrian Zone # 3

Pedestrian Zone # 3 is bounded by Washington Street to the north, Madison Street and Madison Avenue to the south, Sylvan Avenue to the east, and Fairmount Street to the west (blue fill). The main roads for pedestrian access to Washington Elementary School in Pedestrian Zone # 3 include Washington Street, Fairmount Street, Laval Street and Madison Avenue. The longest walking route is approximately 0.5 miles long from the south-easternmost point on Madison Avenue to the east side entrance to the paved playground of Washington Elementary School, as shown in **Figure 17**.

1.4.1 Roadway and Pavement Marking Conditions

In general, the pavement quality is in fair to good condition in the majority of Pedestrian Zone #3, with the exception of Fairmount Street, Lounsbury Street and Xavier Street which showed cracked pavement. The good pavement conditions are limited to the immediate area around the school on Washington Street and the area around Francisco Circle and Madison Avenue south of Welles Street.



Figure 18: New Pavement Markings Along Washington Street

Pavement markings along this route are comprised of stop bars, crosswalks and double yellow center lines on Washington Street. Double yellow center line pavement markings along Washington Street are fairly new as seen in **Figure 18**. There are no edge lines along any roadways within this pedestrian zone. There are few crosswalks in this pedestrian zone. They are limited to Xavier Street and the intersection of Fairmount Street and Luke Street. The crosswalk on Xavier Street was paved over and not repainted as seen in **Figure 19**. The crosswalk pavement markings on the east and west leg of Fairmount Street and Lounsbury Street were recently painted. There are no designated “SCHOOL ZONE” pavement markings or “SCHOOL SLOW” pavement markings within this pedestrian zone.



Figure 19: Crosswalk Paved Over on Xavier Street

Improvements for sidewalks, handicap ramps and crosswalks can be made in Zone #3, as listed in **Table 4**.

Table 4: Sidewalk Obstructions/ Crosswalk/ Handicap Ramp Locations in Pedestrian Zone # 3

Location	Leg of Approach(es)	Issue	Quantity
Xavier Street	Mid-Block	Crosswalk painted over school crossing sign blocked by pole Crosswalk missing at Washington St	3
Xavier Street/ Washington Street	W	No mid-block crosswalk across busy street where crossing guard is stationed	1
Fairmount Street/ Washington Street	S	No detectable warning strips on handicap ramps No crosswalk along major route	1
Fairmount Street	Mid-Block	Low hanging vegetation	1
Madison Street	Mid-Block	Overgrown hedges onto sidewalk	1
TOTALS			7

1.4.2 Signs

The posted speed limit for Washington Street in the immediate area of the school within Pedestrian Zone # 3 is 25 mph. There is a REDUCE 25 MPH SPEED sign for the westbound direction on Washington Street west of Merry Street. East of Xavier Street is a SCHOOL CROSSING sign; this sign is missing an AHEAD sub-plate. On Xavier Street there is a one way sign for the northbound direction at the intersection of Washington Street. Further north of this intersection is a SCHOOL CROSSING sign. This sign is missing an AHEAD sub-plate and it is no longer perpendicular to the ground; it is angled towards the street. Directly behind the St. Francis Xavier School main building on Xavier Street is another SCHOOL CROSSING sign with a downward arrow sub-plate. This sign is obscured by a utility pole that was installed directly in front of the sign as seen in **Figure 20**. These two SCHOOL CROSSING assemblies are new MUTCD specified yellow-green fluorescent. There are also crime alert signs such as the one at the intersection of Fairmount Street and Lounsbury Street where there is a NEIGHBORHOOD WATCH sign on the pole at the northwest corner.



Figure 20: School Crossing sign hidden behind pole

1.4.3 Sidewalks

Unlike the other pedestrian zones, this zone has a number of streets that do not have sidewalks on both sides of the roadway. The majority of Lounsbury Street east of Fairmount Street, Madison Street east of Baldwin Street, Keefe Street East of Donahue Street and the majority of Donahue Street have sidewalk on only one side of the roadway. Fairmount Street has sidewalk on both sides of the roadway with the exception of a small portion on the east side of the roadway within the immediate school area. Throughout this area there are no grass strips to serve as a buffer between traffic and pedestrians and sidewalks are typically 5-6 feet wide.



Figure 21: New Handicap Ramps at Lounsbury Street/ Fairmount Street

Most of the handicap ramps in this zone are either deteriorated or have raised curb in place of a ramp. There are two handicap ramps with no detectable warning strips at the intersection Washington Street and Fairmount Street. There is also a newly installed handicap ramp at all corners on Fairmount Street and Lounsbury Street as seen in **Figure 21**.



Figure 22: Overgrown Hedges on Madison Street

There are not as many obstructions on the sidewalk in this zone caused by residents. There is a section of vegetation on Madison Street that is blocking the sidewalk as seen in **Figure 22**.

1.4.4 Crime

The school principal stated that crime is an issue throughout the neighborhood. However, this does not prevent parents and children from walking in the area.

2 ASSESSMENT OF WALKING ROUTES AND SCHOOL GROUNDS

This section summarizes an assessment of the three walking routes in accordance with SRTS practices. Best Practices and Key Issues are discussed below.

2.1 Best Practices

The following SRTS best practices were observed during the walk audit:

- Although sidewalks are generally in poor condition, the majority of the streets have sidewalks on both sides of the road within all three pedestrian zones.
- Crossing guards were stationed at high density traffic areas and walking routes. These crossing guards wore proper safety vests and used handheld stop signs (**Figure 23**).
- School buses line up along Washington Street and let students out for arrival and wait for dismissal in an orderly manner after the bell rings.
- Most of the walking routes in the immediate area of the school are through residential neighborhoods and have posted 25 mph speed limits.
- There are new yellow-green fluorescent signs at the high density intersection of Washington Street and Baldwin Street and on Xavier Street as specified by the MUTCD.
- Newly installed handicap ramps with detectable warning strips and crosswalks were installed at the intersection of Lounsbury Street and Fairmount Street and at the intersection of Baldwin Street and Washington Street.
- The percentage of pedestrians that walk to Washington Elementary School (80% as reported by the school) is high.



Figure 23: Crossing Guard with Appropriate Gear

2.2 Key Issues

Operational issues that were noted and can be improved include:

- The majority of the sidewalks and curbing within all of the pedestrian zones are deteriorated.
- Residents and parents were parked on the Washington Street sidewalk during drop-off, making it difficult for walkers to use the sidewalks (**Figure 24**).
- There are five mid-block crosswalks along Baldwin Street as noted previously in **Table 3**, all of which do not have crosswalk signs to alert the drivers where pedestrians may be crossing.



Figure 24: Residents and Parents Parking on Sidewalk within School Area

None of these mid-block crosswalks had handicap ramps. Vehicles traveling along this road did not stop unless pedestrians were already in the street.

- There are only a few handicap ramps within all three pedestrian zones. Of the few that do exist most are deteriorated, do not have detectable warning strips and/or are not ADA compliant. This makes it more difficult for pedestrians with handicaps to cross the street.
- Due to the number of locations with obstructions and overgrown hedges in the sidewalk, and vehicles parked on the sidewalk, pedestrians are forced to walk in the street to navigate around these obstructions.
- The SRTS team can come to the school and talk to the PTA and introduce the SRTS program. They will offer pedestrian and bike training, while helping to inform parents about the safest way to pick-up and drop-off their children. The team could also further explain the drop-off and pick-up processes.
- There are no designated school zone pavement markings around the facility. On Washington Street, west of Baldwin Street there are no speed limit or school crossing signs to provide an enforceable speed limit during the arrival and dismissal times.
- Even though the percentage of students walking to school is high, the principal reported that walking decreases during the winter when the parents do not allow their children to walk to school because the sidewalks are not accessible and the roadways are too dangerous to walk on.
- Crossing guards were seen entering traffic not at the optimally safest point in time, and parents and students were seen crossing at long distances away from the crossing guard as seen in **Figure 25**.
- The principal noted that crime was present within all of the pedestrian zones.
- The school has no bike rack to accommodate cyclists.



Figure 25: Crossing Guard Crossing Pedestrians Over Long Distances

3 RECOMMENDATIONS

The CTDOT SRTS team developed a list of improvements to address the issues affecting the various walking routes to Washington Elementary School. They have been separated into two categories: short-term and long-term improvements.

3.1 Short-Term Improvements

The SRTS audit team recommends the following short-term low cost improvements to be considered for Washington Elementary School in the Five E's² framework:

1. Education:

- The SRTS Program provides free pedestrian and bike education for students and parents. The SRTS committee could contact the SRTS team to arrange follow up training. These education programs would clarify for parents where to walk their children safely within the pedestrian zones in the immediate school area.
- Attend a Driver and Passenger Educational program to clarify drop-off/ pick-up procedures to new parents at the beginning of the school year, taking into account the arrival of the buses during drop-off. This will reduce issues with parents parking on sidewalks along Washington Street or in no parking areas.
- Crossing guards should be trained by the City of Waterbury for their own safety and to safely cross students to school.
- SRTS has programs involving crime prevention that can make students and parents aware of troubled areas and techniques for walking and biking safely. The SRTS committee could contact the SRTS team to explore and implement some of these strategies.
- Initiate a media campaign to encourage residents to maintain sidewalks during winter months and for parents to form shoveling volunteer groups to maintain priority sidewalks during winter months.
- Initiate a media campaign to encourage residents to clear sidewalks of obstructions such as garbage and recycling bins.

2. Encouragement:

- Walking Wednesdays, Walking / Biking contests, and mileage tracking could help continue encouraging walking and biking to school throughout the year.
- Encourage city to provide salt and/or sand to help residents maintain sidewalks.

² Five E's of Safe Routes to School are Education, Encouragement, Engineering, Enforcement and Evaluation
<http://www.walkitbikeitct.org/The5Es.html>

3. Enforcement:

- Encourage school staff or if necessary law enforcement to monitor temporary illegal parking and drop-off along Washington Street. Place safety cones in areas along Washington Street where parking is not allowed.
- Encourage law enforcement to monitor speeding along Washington Street.

4. Engineering

- Install SCHOOL ZONE pavement markings and the appropriate corresponding school zone signage with recommended speed for school zones for Washington Street and Baldwin Street per the MUTCD guidelines to alert motorists that they have entered a school zone. There is currently no signage for the eastbound direction on Washington Street.
- It is recommended that over time all signage around the school be updated to meet MUTCD current specifications, particularly with regards to mounting height, size, reflectivity, and the fluorescent yellow-green color. An example of this MUTCD S1-1 school sign is shown in **Figure 26**. It is recommended that for advanced S1-1 signs on all approaches, an APPROACH sub-plate should be installed. All S1-1 assemblies at the time of the walk audit are updated with the exception of Washington Street west of Baldwin Street.



Figure 26: MUTCD S1-1 Sign

- Install a new street sign for Glen Street that was bent between two poles, and reinstall the S1-1 sign on Xavier Street located between two utility poles onto one sign post.
- Install a bicycle rack within the school grounds.
- Restripe all crosswalks that are faded or missing within the immediate vicinity of the school, such as Washington Street at Xavier Street. There appears to have been an existing crosswalk before Washington Street was repaved.
- Trim vegetation along the west sidewalk of Fairmount Street within the school area; Madison Street along the north sidewalk; and Baldwin Street on the west sidewalk south of Laval Street to improve visibility of the posted 25 MPH sign.
- Remove unsafe wire that is hanging low over the sidewalk on South Street.

3.2 Long-Term Improvements

The areas surrounding Washington Elementary School are missing amenities that are conducive to walking and bicycling to school safely. Even though the landscape is largely residential, with sidewalks present along all major walking routes, there are obstructions on the sidewalks caused by residents, such as disposal of personal items or parking on sidewalks. Employing the Five E's Guidelines, the following improvements are recommended:

1. Education:

- The SRTS Program provides free pedestrian and bike education for students and parents. The SRTS committee could contact the SRTS team to arrange regular follow up training when there are new faculty and staff members.
- Attend Driver and Passenger Educational program to clarify drop-off and pick-up procedures including the arrival of the buses during drop-off.
- Work with the City of Waterbury Public Works Department on a media campaign to both encourage and educate property owners about increased pedestrian safety as a result of better sidewalk maintenance. This media campaign can issue press releases and newspaper columns, among other forms of communication.

2. Encouragement:

- Walking Wednesdays, Walking / Biking contests, and mileage tracking could continue the encouragement of walking and biking to school throughout the year.
- Encourage faculty and staff to be a part of drop-off/pick-up procedures. Those directing traffic should wear safety vests.

3. Enforcement

- Request an increase in police presence to encourage parents and residents not to park on sidewalks.

4. Engineering

- Replace sections of deteriorated/ upheaved sidewalk and curbing at the following locations:
 - Sidewalk on both sides of Washington Street (from Lounsbury Street to Donahue Street);
 - Sidewalk on west side of Baldwin Street (from Sylvan Avenue to Washington Street);
 - Sidewalk on both sides of Baldwin Street (from Washington Street to Glen Street); and
 - Curbing on Baldwin Street (from Washington Street to Keefe Street).
- Replace sidewalk on both sides of the roadway with the most degradation such as (1) South Street; (2) Fairmount Street; and (3) Lounsbury Street on the south side and a portion of the north side between Baldwin Street and Fairmount Street.
- Install new sidewalk along the east side of Fairmount Street north of Keefe Street.
- Add pedestrian handicap ramps, regrade the handicap ramps and/or relocate the crosswalks mentioned in **Table 2**, **Table 3** and **Table 4**. Install crosswalk signs (W11-2)

with downward arrow (W16-7P) as needed for both approaches at all of the below mentioned relocated or newly installed crosswalks:

- a. Install a new crosswalk and SCHOOL CROSSING sign with downward plaque in front of the school on Washington Street west of Xavier Street to increase safety and to clarify crossing points for pedestrians and drivers. Install handicap ramps and detectable warning strips on both approaches of crosswalk.
 - b. Install new crosswalk on north leg across Baldwin Street at Madison Street . Install handicap ramps with detectable warning strips on all approaches to the crosswalks.
 - c. Restripe the crosswalk at Keefe Street and Baldwin Street and install handicap ramps with detectable warning strips for both approaches.
 - d. Restripe the mid-block crossing at Lounsbury Street and Baldwin Street. Install new handicap ramp on the southwest corner of the intersection.
 - e. At the intersection of Laval Street and Baldwin Street, install handicap ramps with detectable warning strips for the northeast, southeast and southwest corners.
 - f. Install crosswalks on the north and west legs at the intersection of Lounsbury Street and Lounsbury Avenue. Install new handicap ramps with detectable warning strips for all corresponding approaches.
 - g. Install detectable warning strips on handicap ramps at Fairmount Street and Washington Street.
 - h. Install new handicap ramps along the west side of the roadway on Fairmount Street at Keefe Street, Luke Street and Rye Street.
- Consider redesign of the geometry at Lounsbury Street and Lounsbury Avenue by decreasing the roadway width for Lounsbury Street and installing curb extensions to the north leg to decrease the curb radius and walking distance on the west leg.

The aforementioned Safe Routes to School Walk Audit Report is an objective review intended for the School's Safe Routes Committee use to help assess the existing conditions surrounding the school. This document is an innovative planning tool to help identify bicycle, pedestrian and non-motorized transportation needs that encourage walking and bicycling to the school, as well as assists in developing recommendations to improve existing conditions. The contents of this report are not intended to be legally binding, but rather offer recommendations to improve safety in the vicinity of the school and create a more appealing transportation alternative.

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