



Table of Contents

1	Introduction	1
2	Existing Conditions	3
3	General Infrastructure Recommendations	5
4	Borough-Wide Recommendations	6
8	Iditarod Elementary School	7
9	Machetanz Elementary School	11
22	Dena’ina Elementary and Redington Sr. Jr/Sr High School	15

Figures

Figure 2-1 - Student Enrollment in MSB Schools	4
Figure 8-1 – Iditarod Elementary Inventory	9
Figure 8-2 – Iditarod Elementary Recommendations	10
Figure 10-1 – Machetanz Elementary Inventory	13
Figure 10-2 – Machetanz Elementary Recommendations	14
Figure 22-1 – Dena’ina Elementary and Redington Sr. Jr/Sr High School Inventory	17
Figure 22-2 – Dena’ina Elementary and Redington Sr. Jr/Sr High School Recommendations	18

Tables

Table 8-1 – Iditarod Elementary School Recommendations	8
Table 10-1 – Machetanz Elementary School Recommendations	12
Table 22-1 – Dena’ina Elementary and Redington Sr. Jr/Sr High School Recommendations	16



1 Introduction

The following is an Addendum to the Matanuska-Susitna Borough WALK ZONE INVENTORY AND RECOMMENDATIONS Safe Routes to School Plan Dated December 2014 (SRTS 2014).

Matanuska-Susitna Borough (MSB) continues to be the fastest growing region in Alaska with over 101,000 residents. The Matanuska-Susitna Borough School District (MSBSD) includes 47 schools sites and is attended by over 18,800 students.

Since time of the SRTS 2014, MSBSD, in conjunction with other MSB departments, has constructed two new schools and has relocated an elementary school site.

This Addendum is part of a Safe Routes to School program for the MSB. It contains an update to two (2) of the seventeen (17) school sites discussed and analyzed in the SRTS 2014. They are Iditarod Elementary and Machetanz Elementary schools. Additionally, this Addendum has added Section 22 which contains analysis and discussion for the most recently constructed Dena'ina Elementary and Redington Sr. Jr/Sr High School sites (Evaluated as One School Site).

This Addendum includes an engineering assessment of the walking/biking infrastructure around the 3 schools listed above, with recommendations for improving the walking/biking conditions. This study focuses on a ½-mile radius around the school site, referred to in this addendum as the “walk zone.” The actual extent of students walking or biking to school may extend beyond this boundary.

The Safe Routes to School program has three primary objectives:

- Increase the number of students walking or biking to school
- Improve safety around schools
- Reduce traffic and air pollution near schools

Safe Routes to School programs use the “five E’s” (evaluation, engineering, education, encouragement, and enforcement) to ensure a well-rounded approach to getting more students walking and biking to school. This Addendum focuses on the evaluation and engineering components.



What This Addendum Includes

This addendum provides a comprehensive look at the existing conditions around 2 elementary school sites and 1 elementary/middle/high school site within the MSB and makes recommendations for improving the walking and biking environment. The recommendations are based on the SRTS 2014 as well as our engineering experience and local knowledge of past and future projects within MSB. The recommendations focus on two components of the walking/biking environment:

- The **route to school**: Where students currently walk or could potentially walk if the infrastructure was in place
- The **drop-off/pick-up area**: Ways to reduce vehicle congestion, separate buses from parent vehicles, and provide safe passage between vehicles and the school

How to Use This Addendum

This addendum is a planning document. It is intended to supplement the existing SRTS 2014 as a conceptual vision of the future walking/biking atmosphere around the 3 school sites studied and to help guide future development projects. As such, this planning tool will be subject to more detailed study and design once projects are prioritized and funding is made available. Additional analysis will include, but is not limited to:

- Right-of-way assessment
- Topographic surveying
- Traffic analyses
- Drainage studies
- Public outreach



2 Existing Conditions

Inventory Process

The inventory process included three two components:

- Site visits
- Geospatial data collection

In November 2017, The Boutet Company (TBC) staff visited the walk zone around the 3 school sites to assess existing conditions. Items included:

- Pick-up and drop-off zones
 - ♦ Separate bus and parent areas
 - ♦ Traffic circulation
 - ♦ Parking
 - ♦ Signage
- Pedestrian and bicycle access
 - ♦ Adequacy of facilities
 - ♦ Crosswalks
 - ♦ Trails (formal and informal)
 - ♦ ADA accessibility
 - ♦ Gates and fences
 - ♦ Crossing guards
 - ♦ Lighting
- Adjacent roadway conditions
 - ♦ Signage
 - ♦ Lighting
 - ♦ Line-of-sight issues
 - ♦ Speed limits
- School property features
 - ♦ Bike racks
 - ♦ Entrance areas
 - ♦ Lighting
- Surrounding area
 - ♦ Land use/general setting

TBC engaged MSBSD staff and others regarding ongoing pedestrian issues and reported problems in or around the 3 school sites. TBC also acquired recent civil improvement plans and record documents for each of the 3 sites to evaluate planned pedestrian facilities and to better recommend improvements. Site visits and observations during student drop-off & pick-up gave insight to real-time issues and to better understand public traffic behaviors.

Electronic data using the most recent 2017 aerial imagery, Alaska Department of Transportation & Public Facilities (DOT&PF), the MSB, and the MSBSD were used in developing figures and maps within this addendum.



School District Information

There were over 1,800 students enrolled in the 3 school sites in the project study area. Enrollment varied slightly among the elementary schools however, being Dena’Ina and Redington are evaluated as 1 site, it is the highest enrollment at 1,003 students.

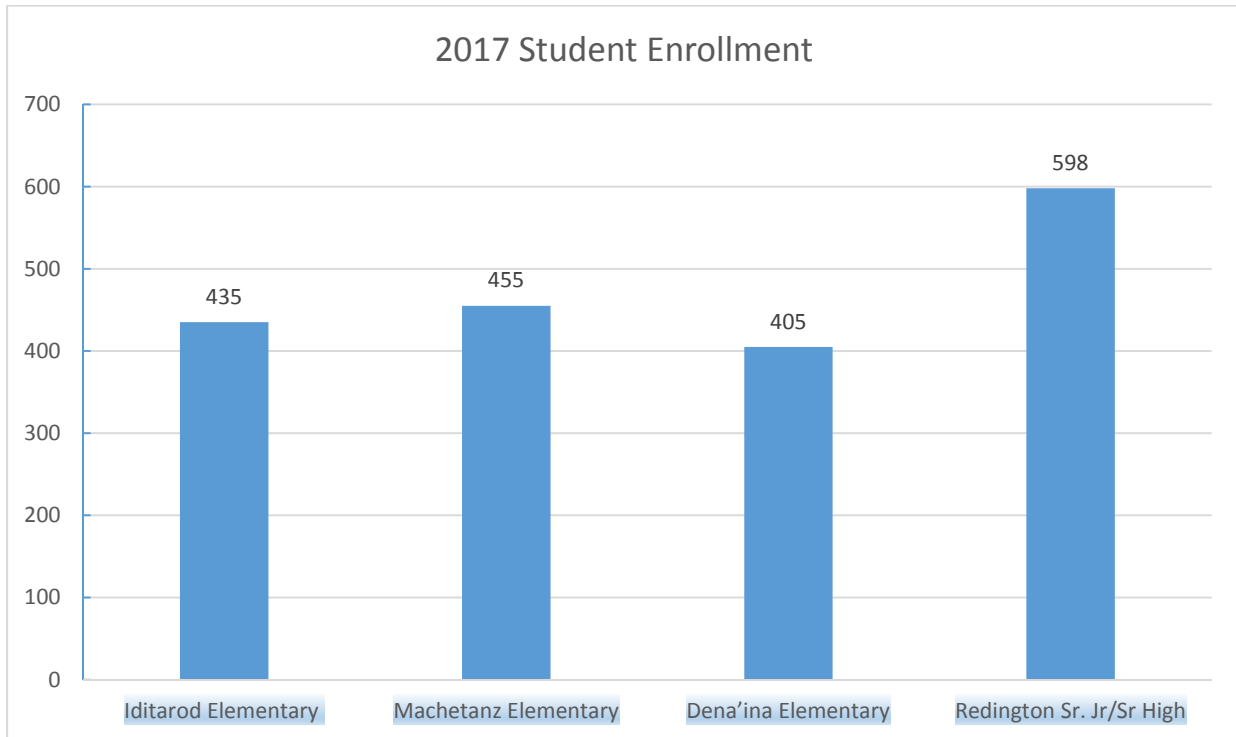


Figure 2-1 - Student Enrollment in MSB Schools

School Inventory Maps

Inventory maps for each school are included following each school’s description. These maps present information gathered during the inventory process.

School Recommendation Maps

Maps depicting the recommendations for each school follow the Inventory Maps.



3 General Infrastructure Recommendations

Section 3 of the SRTS 2014 “General Infrastructure Recommendations” outlines engineering treatments in conjunction with information from engineering guidelines, America Walks¹, ADOT&PF Alaska Traffic Manual and MUTCD and the National Center for Safe Routes to School. While each treatment is addressed individually in the SRTSS 2014, the most successful design often incorporates multiple treatments that work together to provide a safe experience. These treatments include:

- Sidewalks
- Bikeways and Bike Facilities
- School Area Speed Limits and Traffic Signs
- Marked Crosswalks, Pavement Markings, Crossing Guards, and Crossing Islands
- Traffic Signals

The engineering treatments listed above are described, discussed and applied to the goals of the Matanuska-Susitna Borough WALK ZONE INVENTORY AND RECOMMENDATIONS SRTS 2014 Plan and are hereby referenced as applicable treatments within this addendum.

¹ America Walks (www.americawalks.org) is a national resource that fosters walkable communities by engaging, educating, and connecting walking advocates.



4 Borough-Wide Recommendations

Section 4 of the SRTS 2014 provides recommendations and policy guidelines regarding SRTS program goals that can/should be implemented on a borough wide scale. They include:

- Monitor Bicycle and Pedestrian Activity
- Educational and Outreach Activities
- Crossing Guards
- Bike Parking Upgrades

The recommendations listed above are described, discussed and applied to the goals of the Matanuska-Susitna Borough WALK ZONE INVENTORY AND RECOMMENDATIONS SRTS 2014 Plan and are hereby referenced as applicable recommendations within this addendum.



8 Iditarod Elementary School

Existing Conditions

Iditarod Elementary is located within the Wasilla city limits, northeast corner of the intersection of East Carpenter Circle and North Wasilla Fishhook Road. The physical address is:

455 E Carpenter Circle, Wasilla, AK 99654

Iditarod Elementary was originally located at the northeast corner of the intersection of East Bogard Road and North Wasilla Fishhook Road but 2016 was relocated to its current location.

Wasilla High School lies to the east and is connected to the elementary school by an unofficial unlit earthen path at the east end of East Carpenter Circle. This path connects to the western edge of the Wasilla High Parking lot where there is no official pedestrian improvement.

With its reconstruction/relocation, some of the pedestrian improvement recommendations suggested in the SRTS 2014 were constructed. These improvements included:

- Ladder-style crosswalk located on the south side of East Carpenter Circle crossing over North Wasilla Fishhook Road to East Kalli Circle
- Separated multiuse pathway on the north side of East Carpenter Circle connecting the existing pathway on the west side of North Wasilla Fishhook Road to the new school entrance
- Relocated 20 mph flashing school zone signs in front of new school location. Said signs are active during morning and afternoon (drop-off / pick-up) hours.

Wasilla Fishhook Road is a fairly busy streets, averaging an annual average daily traffic volume of 5,081. North Wasilla Fishhook Road is quite wide, with two travel lanes, a center turning lane for half the school frontage, and paved shoulders. There are highway streetlights at the intersection of East Carpenter Circle and North Wasilla Fishhook Road. There is one parking lot light at the entrance to the school off of East Carpenter Circle.

School staff reports and field observations suggest very few students walk and/or bike to school. This is likely due to the absence of adjacent residential areas and associated high traffic volumes on North Wasilla Fishhook Road.

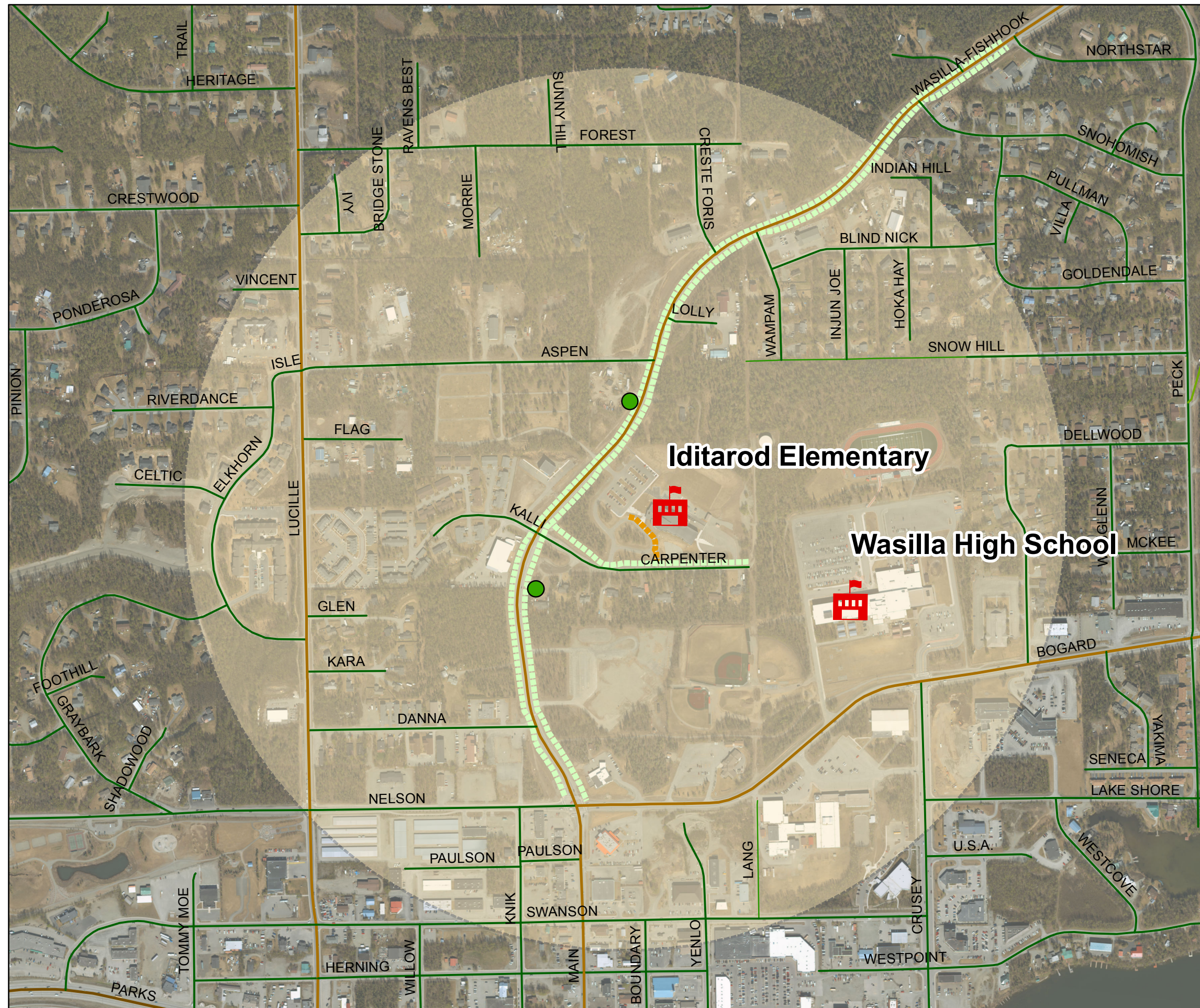
Additional observations during pick-up hours showed parents using the drop-off zone and consequently traffic queued beyond the drop-off zone and onto East Carpenter Circle. Aggressive driving and blocked intersections caused by traffic over queueing can, and in this case did, conflict with existing pedestrian facilities.



Recommendations
















Table 8-1 – Iditarod Elementary School Recommendations

Project	Description	Reasoning
Multi-Use Path	Construct a paved, lighted multi-use path between west end of East Carpenter Circle and Wasilla High School parking lot.	Provides a connection between the elementary school and the high school
Sidewalk	Construct a sidewalk along eastern edge of Wasilla High parking lot and connect to existing pedestrian improvements	Provides final pedestrian continuity between the elementary school and the high school
Sidewalk	Construct a sidewalk along the south side of East Kalli Circle aligned with the existing ladder-style crosswalk on North Wasilla Fishhook Rd.	Provides a designated pathway for children walking from the high-density residential area along Kalli Circle to the elementary school
Pedestrian Crossing	Reconstruct existing ladder-style crosswalk located on the south side of East Carpenter Circle crossing over North Wasilla Fishhook Road to East Kalli Circle using inlaid methyl methacrylate markings	This crossing is a predominant access route from the west side of North Wasilla Fishhook Rd. to the elementary school; the crosswalk is currently painted and has experienced wear to the point that it is not recognizable
Pedestrian Crossing	Install a ladder-style crosswalk on East Carpenter Circle connecting existing multi-use pathway on east side of North Wasilla Fishhook Rd.	Provides final pedestrian continuity between from East Kallie Circle to the elementary school
Pick-up Policy Modification	Adopt “The Little Sign Company” policy for parents picking up students. Policy allows teacher verification with parents at a distance within the drop-off/pick-up zone and has increased peak pick-up by up to <i>*10 minutes</i> http://www.carvisorsign.com/	Over queuing of traffic and conflicts with official and unofficial existing pedestrian patterns.



Inventory
Iditarod Elementary
 Matanuska - Susitna Borough

Legend

-  Schools
- Traffic Class**
-  HIGHWAY
-  MAJOR
-  MEDIUM
-  MINOR
-  PRIMITIVE
-  PRIVATE
- Inventory**
-  Sidewalk
-  Paved Multi-Use Path
-  Narrow Shoulders
-  Unpaved Path
-  Wide Paved Shoulders
-  Resources
-  Conflicts
-  Walk Zones

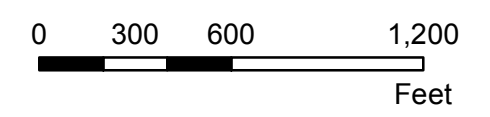

















Figure 8-1



Recommendations
Iditarod Elementary
 Matanuska - Susitna Borough

Legend

-  Schools
- Traffic Class**
-  HIGHWAY
-  MAJOR
-  MEDIUM
-  MINOR
-  PRIMITIVE
-  PRIVATE
- Recommendations**
-  Multi-Use Path
-  Sidewalk
-  Add Lighting
-  Make Connection
-  Sidewalk and Lighting
-  Widen Path and Lighting
-  Point Recommendations
-  Walk Zones

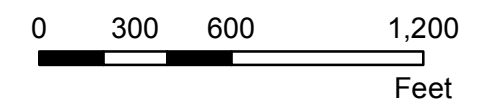


Figure 8-2



9 Machetanz Elementary School

Existing Conditions

Machetanz Elementary is located on Nelson Road approximately 1.25 miles south of the Parks Highway. The physical address is:

4961 E Nelson Road, Wasilla, AK 99654

The school's walk zone includes undeveloped land east and west of the school, with new residential development to the north. The property area to the east and west currently being subdivided as residential and will increase both localized pedestrian and traffic volumes. Current school policy only allows students to walk to the school with a pre-negotiated walking contract and is highly dependent on physical location adjacent to the school.

The only pedestrian facility within the walk zone is an unpaved path that perpetuates north/south travel from the school to East Fetlock Drive. Residential streets in surrounding neighborhoods are fairly narrow with narrow, unpaved shoulders. Streetlights are found at street intersections.

Though outside the walk zone, the recent construction of Trunk Road South included an adjacent unlit multiuse pathway. Said pathway currently ends at the intersection of the east end of East Fetlock Drive and Nelson Road. According to MSB Capital Project Department, this pathway will be extended along the north side of Nelson Road and terminate into the school site. This pathway is aligned with numerous planned future residential developments and some existing neighborhoods east of the school site. It should be expected that pedestrian travel to the school will increase once this pathway is constructed.

Currently parents, staff, and buses each have separate parking areas. Five school staff members assist with traffic monitoring during mornings and afternoon (drop-off / pick-up) hours. Traffic congestion during these peak times have been reportedly getting worse. Field observations showed traffic queuing for drop-off / pick-up zone is backing up onto Nelson Road and creating issues for both through traffic and left turn movement when leaving the school post drop-off.

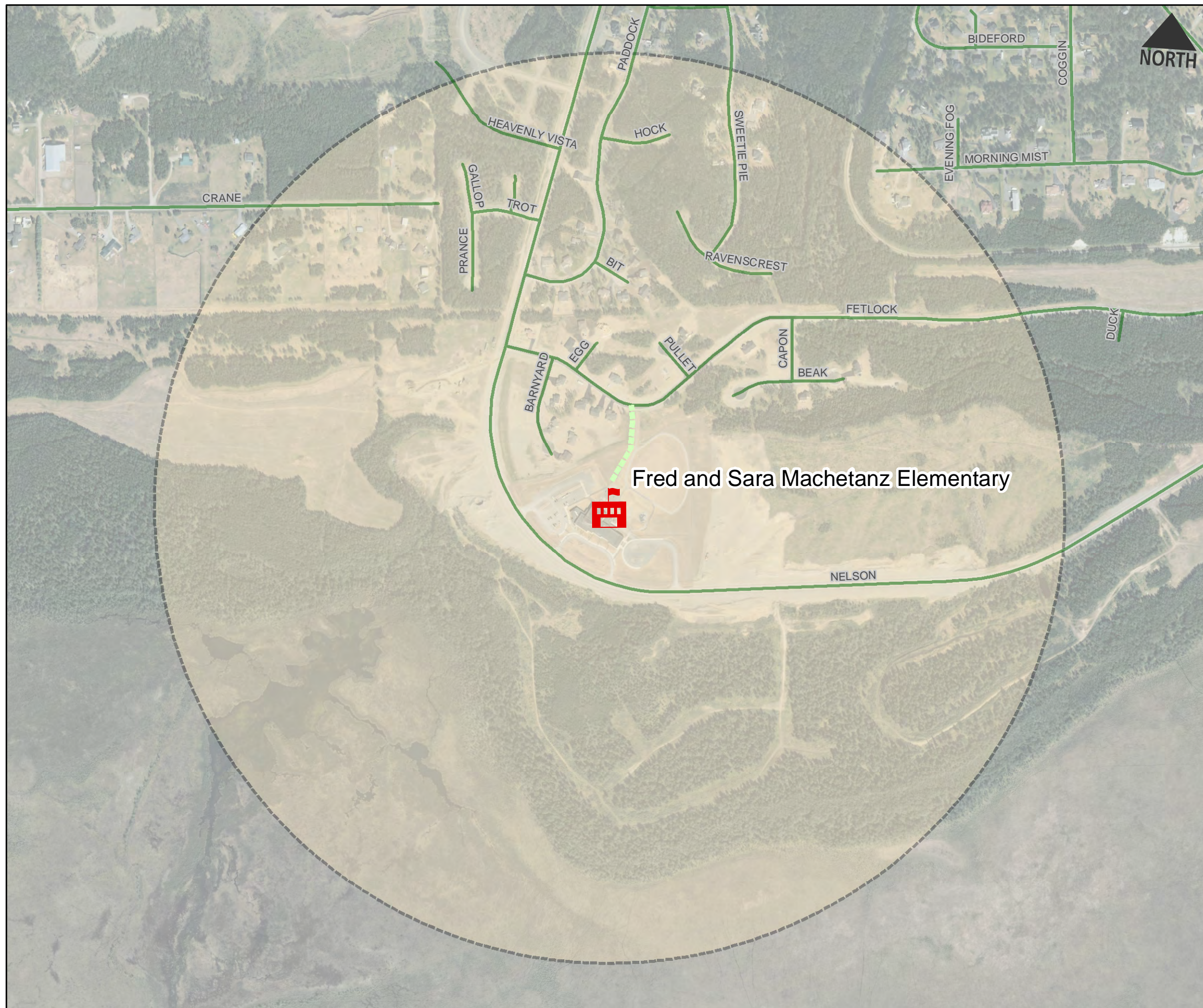
Though traffic patterns and/or the correction thereof are not the primary focus of the SRTS, they become important when conflicting with pedestrian patterns. Observations show that parents are utilizing the undeveloped area to the west of Nelson Road to park and walk their children across to the school site. With no official pedestrian crossing on Nelson Road, safety concerns are growing.
















Recommendations

Table 10-1 – Machetanz Elementary School Recommendations

Project	Description	Reasoning
Multi-Use Path	Install 1 mile of paved, multiuse path on the east side of Nelson Rd. from the north end of S. Withers Loop south to the school	Provides safe walking route along Nelson Rd.; high interest from parents
Sidewalk	Install sidewalks along S. Paddock Dr. and E. Fetlock Dr.	High potential for pedestrians in this neighborhood; high interest from parents
Lighting and Surfacing	Add lighting along 400 feet of the path behind the school; surface the path with asphalt	The path to the back side of the school is unpaved and unlit
Traffic Improvements	Construct left turn pocket for Nelson Road southbound traffic into drop-off zone	Allows traffic queuing without stopping Nelson Road through traffic
Traffic Improvements	Construct right turn lane for Nelson Road westbound traffic into drop-off zone	Allows traffic queuing without stopping Nelson Road through traffic; allows right turn movement currently conflicting with queued traffic from southbound traffic turning left into the drop-off zone
Connect Ed	Provide more frequent messaging to parents regarding the do's and don'ts of student drop-off/pick-up	Over queuing of traffic and conflicts with official and unofficial existing pedestrian patterns.



Inventory
Fred and Sara Machetanz Elementary
Matanuska - Susitna Borough

-  Schools
- Traffic Class**
-  HIGHWAY
-  MAJOR
-  MEDIUM
-  MINOR
-  PRIMITIVE
-  PRIVATE
- Inventory**
-  Paved Multi-Use Path
-  Wide Paved Shoulders
-  Narrow Shoulders
-  Unpaved Path
-  Conflicts
-  Resources
-  Moose Concerns
-  Walk Zones

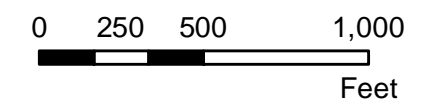


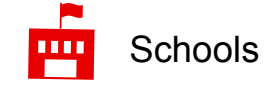
Figure 10-1



Recommendations

Fred and Sara Machetanz Elementary
Matanuska - Susitna Borough

Legend



Schools

Traffic Class



HIGHWAY



MAJOR



MEDIUM



MINOR



PRIMITIVE



PRIVATE

Recommendations



Multi-Use Path



Sidewalk



Add Lighting



Make Connection



Sidewalk and Lighting



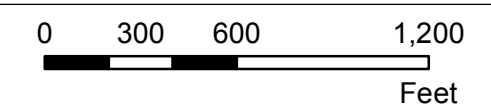
Widen Path and Lighting



Point Recommendations



Walk_Zone



Fred and Sara Machetanz Elementary

Figure 10 - 2



22 Dena'ina Elementary and Redington Sr. Jr/Sr High School

Existing Conditions

Dena'ina Elementary and Redington Sr. Jr/Sr High School (DE/RH) sites are located around mile 10 down Knik Goose Bay Road (KGB) and about $\frac{3}{4}$ mile to the west. More specifically they are located at the northwest corner of Alix Drive and Knik Knack Mud Shack Road. The physical address is:

7068 S Knik Knack Mud Shack Rd., Wasilla, AK 99687

The two schools are the newest additions to the MSBSD. Redington Sr. Jr/Sr High School opened in fall of 2015 followed by Dena'ina Elementary which opened in fall of 2016. The primary access to the school sites is from the east on Knik Knack Mud Shack Road (KKMS) which was constructed/upgraded with the 2013 MSB Road Bond Projects. KKMS consist of two travel lanes and narrow shoulders with no pedestrian facilities. Other school site access roads are as follows:

- (West) W. Clay Chapman Road – Paved, no pedestrian facilities
- (South) S. Alix Drive – Gravel, no pedestrian facilities
- (North) S. Knik Knack Mud Shack Road – Paved, no pedestrian facilities

Though not truly rural in comparison to many of the MSB schools, the areas surrounding DB/RH sites are best characterized as rural. There are large undeveloped parcels to the north, west, southwest and southeast. Immediately to the south is 1 acre residential and directly to the east is 5 acre residential lots. Many of these area are heavily wooded, access via gravel roads and the area is fairly unlit. It should be noted that as the area develops, vehicular, bicycle and pedestrian traffic will undoubtedly increase.

Currently there is only one pedestrian facility which is a paved multiuse pathway extending from RH site easterly down W. Redington Drive for approximately 450 feet. This pathway is on the north side of the roadway fronting only 3 undeveloped residential lots. Immediately to the south is a lot that has multifamily (16 units) which requires pedestrians to traverse W. Redington Drive. Consequently traffic congestion on W. Redington Drive during morning and afternoon peak hours discourages use of the multiuse pathway to the effect that there is now a scheduled bus stop just shy of the RH school site.

There are virtually no other pedestrian improvements within the walk zone. All of the approach roads are narrow and have little to no shoulders. None of the driveway approach and/or access road intersections have street lights and there is no pedestrian signage fronting and/or surrounding the school sites.



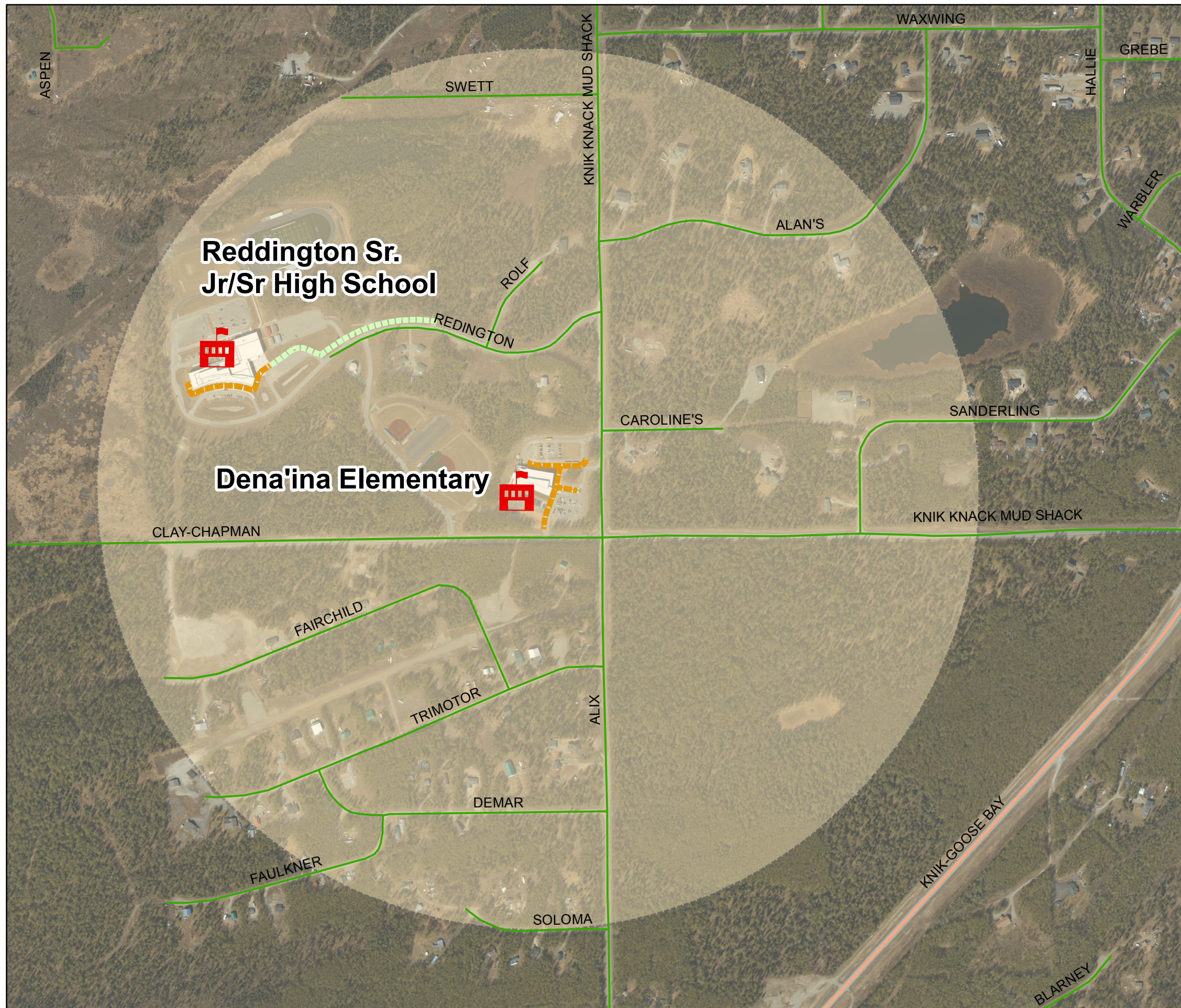
Currently parents, staff, and buses each have separate parking areas. School staff members assist with traffic monitoring during mornings and afternoon (drop-off / pick-up) hours. Traffic congestion within the sites during these peak times appear to be adequate. Field observations showed poor intersection lighting and sight distances slowed traffic flows and minor congestion occurred at intersections.

To the south of the school sites along Alix Drive, a vertical sag grade exists at the intersection of West Demar Avenue and Alix Drive. During winter conditions, buses along this route cannot adequately climb the northbound vertical grade and therefore the route is forced to travel south to KGB where it redirects north on KGB and then west again along KKMS to the school sites. Though not directly related to pedestrian traffic, correcting this solution will allow for future pedestrian improvements leading from a more densely populated area within the walk zone.

Recommendations

Table 22-1 – Dena’ina Elementary and Redington Sr. Jr/Sr High School Recommendations

Project	Description	Reasoning
Intersection Lighting and Signage	Install street lights at all major approaches and intersection within a 1 mile radius of the school sites. Provide school zone flashing lights and signage	Provides safer traffic conditions in and around congested areas; creates safer conditions for both pedestrian and bicycle traffic users
Multi-Use Path	Install 2,460 LF of paved multi-use path on Redington Drive and south on Knick Knack Mud Shack	Provides safe walking route fronting Dena’ina School and completes a walking route to Redington Sr. JR/Sr
Multi-Use Path	Install 2,340 LF of paved multi-use path on the west side of Alix Drive to W. Trimotor Street	Provides safe walking route along Alix Drive; high density area
Multi-Use Path	Install 3,475 LF of paved multi-use path on the north side of Knik Knack Mud Shack Road	Provides safe walking route along Knik Knack Mud Shack Road; high density area
Multi-Use Path	Install 2,640 LF of paved multi-use path on the north side of Clay Chapman Road	Provides safe walking route along Knik Clay Chapman Road; high density area



Inventory

Dena'ina Elementary and Reddington Sr. Jr/Sr High School Matanuska - Susitna Borough

Legend



Schools

Traffic Class

HIGHWAY

MAJOR

MEDIUM

MINOR

PRIMITIVE

PRIVATE

Inventory

Sidewalk

Paved Multi-Use Path

Narrow Shoulders

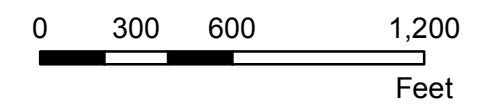
Unpaved Path

Wide Paved Shoulders

Conflicts

Resource

Walk_Zone



SafeRoutes
National Center for Safe Routes to School



Figure 22-1

Recommendations
Dena'ina Elementary and
Reddington Sr. Jr/Sr High School
Matanuska - Susitna Borough



Legend

- Schools
- Traffic Class**
- HIGHWAY
- MAJOR
- MEDIUM
- MINOR
- PRIMITIVE
- PRIVATE
- Recommendations**
- Multi-Use Path
- Sidewalk
- Add Lighting
- Make Connection
- Sidewalk and Lighting
- Widen Path and Lighting
- Point_Recommendations
- Walk_Zone

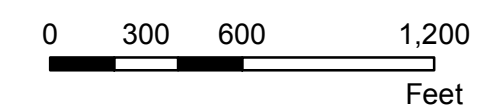
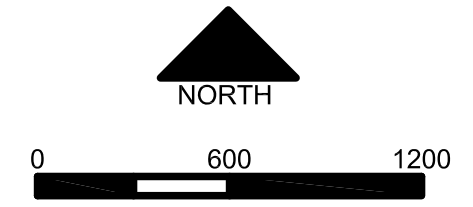
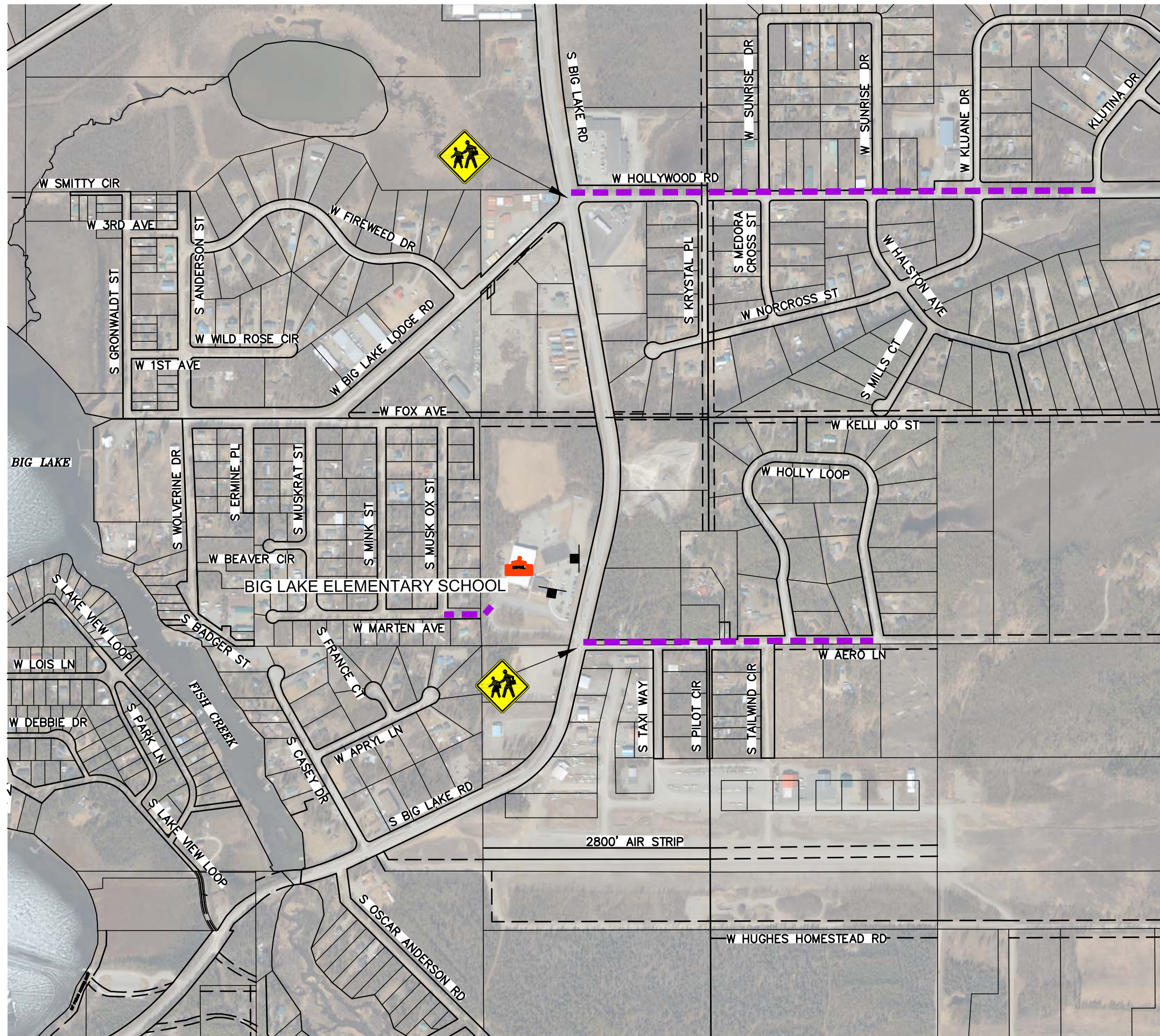


Figure 22-2

MSBSD 2018 PEDESTRIAN PROJECTS

BIG LAKE ELEMENTARY SCHOOL

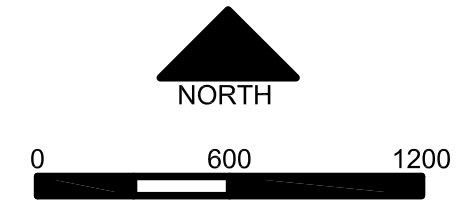
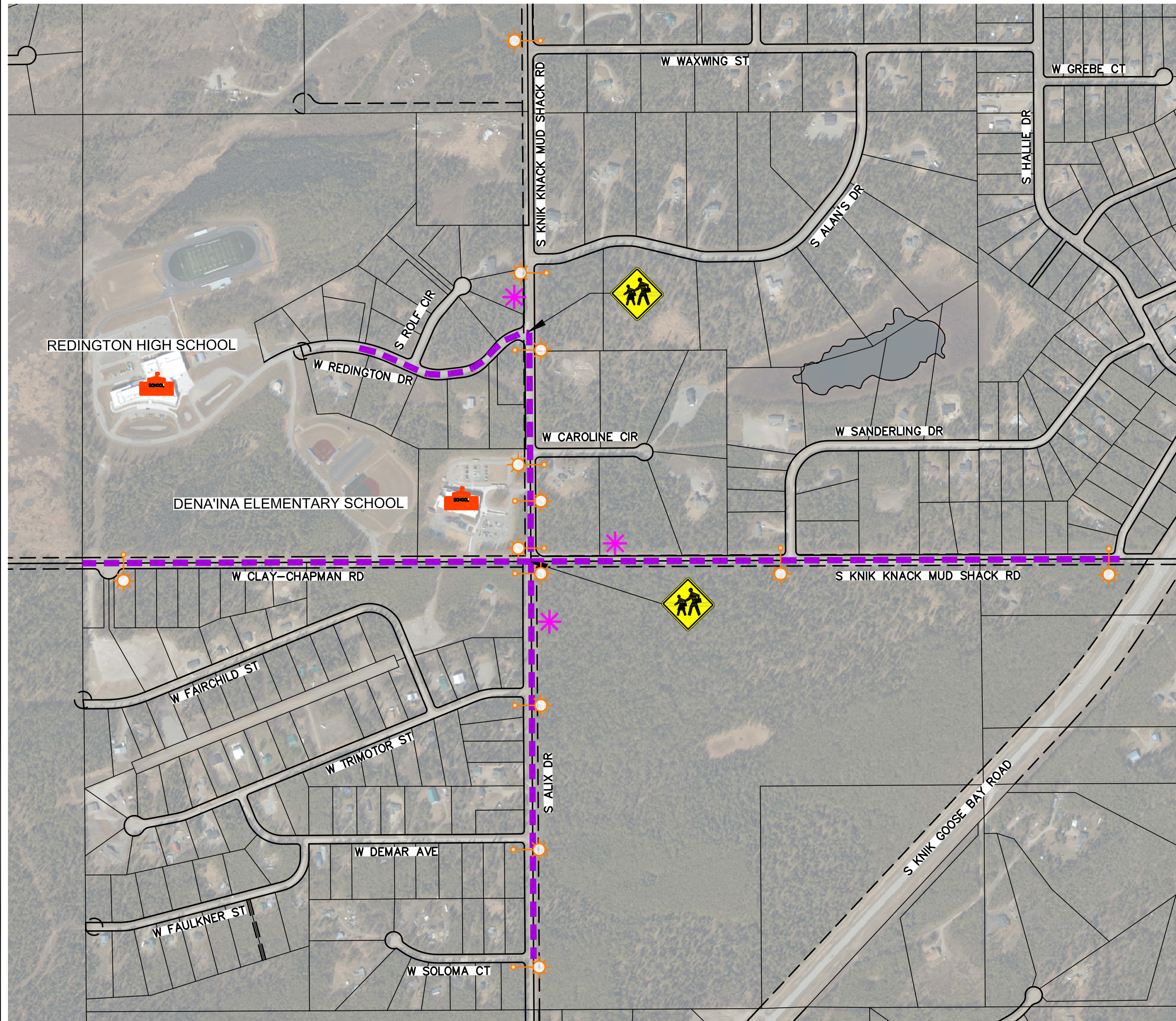


LEGEND	
	SCHOOL
	CROSS WALK SIGNAGE AND STRIPING
	SCHOOL ZONE FLASHING LIGHT & SIGNS
	STREET LIGHT
	PARKING LOT SIGNAGE
	8' MULTI-USE PATHWAY
	4' SIDEWALK
	TURN POCKET/LANE
	BUS STAGING
	PARKING LOT ADDITION

FIGURE 1

MSBSD 2018 PEDESTRIAN PROJECTS

DENA'INA ELEMENTARY SCHOOL













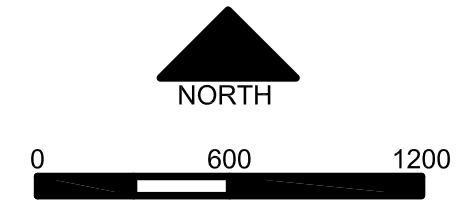
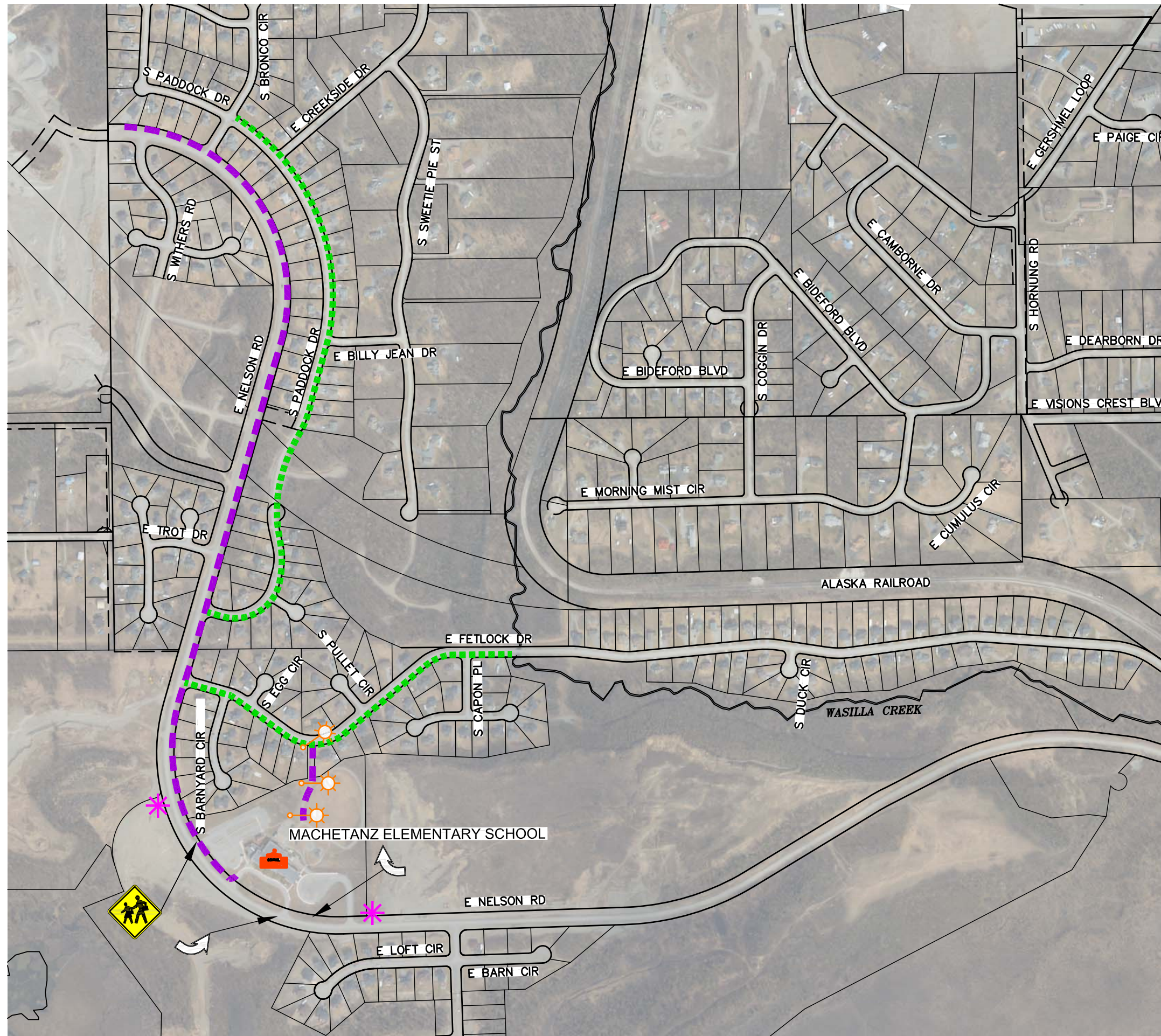
LEGEND	
	SCHOOL
	CROSS WALK SIGNAGE AND STRIPING
	SCHOOL ZONE FLASHING LIGHT & SIGNS
	STREET LIGHT
	PARKING LOT SIGNAGE
	8' MULTI-USE PATHWAY
	4' SIDEWALK
	TURN POCKET/LANE
	BUS STAGING
	PARKING LOT ADDITION

FIGURE 2

MSBSD 2018 PEDESTRIAN PROJECTS

MACHETANZ ELEMENTARY SCHOOL













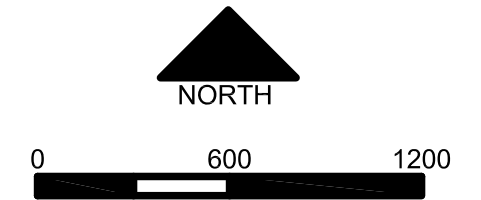
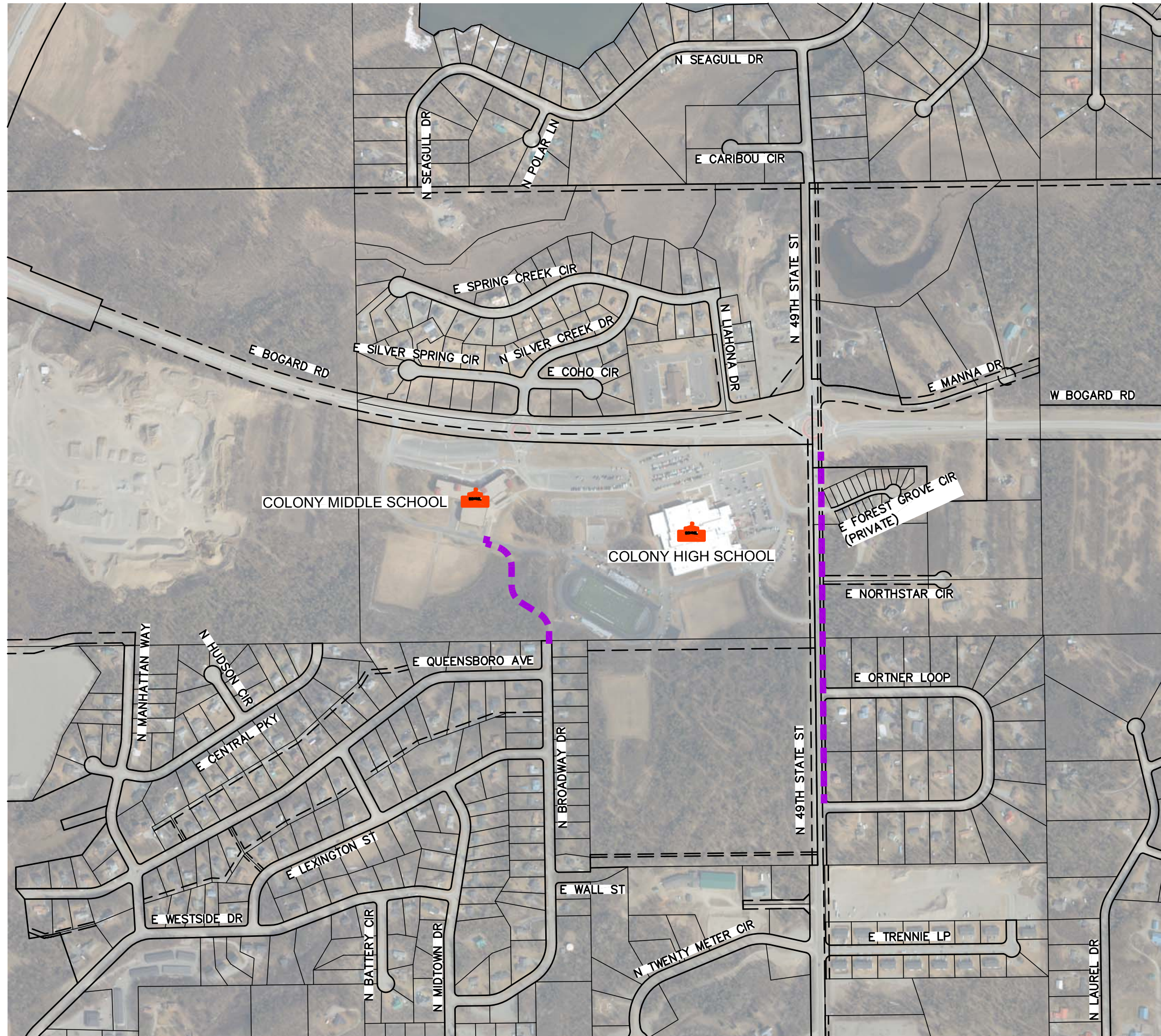
LEGEND	
	SCHOOL
	CROSS WALK SIGNAGE AND STRIPING
	SCHOOL ZONE FLASHING LIGHT & SIGNS
	STREET LIGHT
	PARKING LOT SIGNAGE
	8' MULTI-USE PATHWAY
	4' SIDEWALK
	TURN POCKET/LANE
	BUS STAGING
	PARKING LOT ADDITION

FIGURE 3

MSBSD 2018 PEDESTRIAN PROJECTS

COLONY MIDDLE SCHOOL













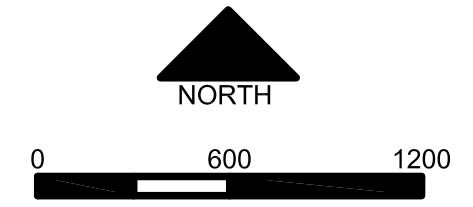
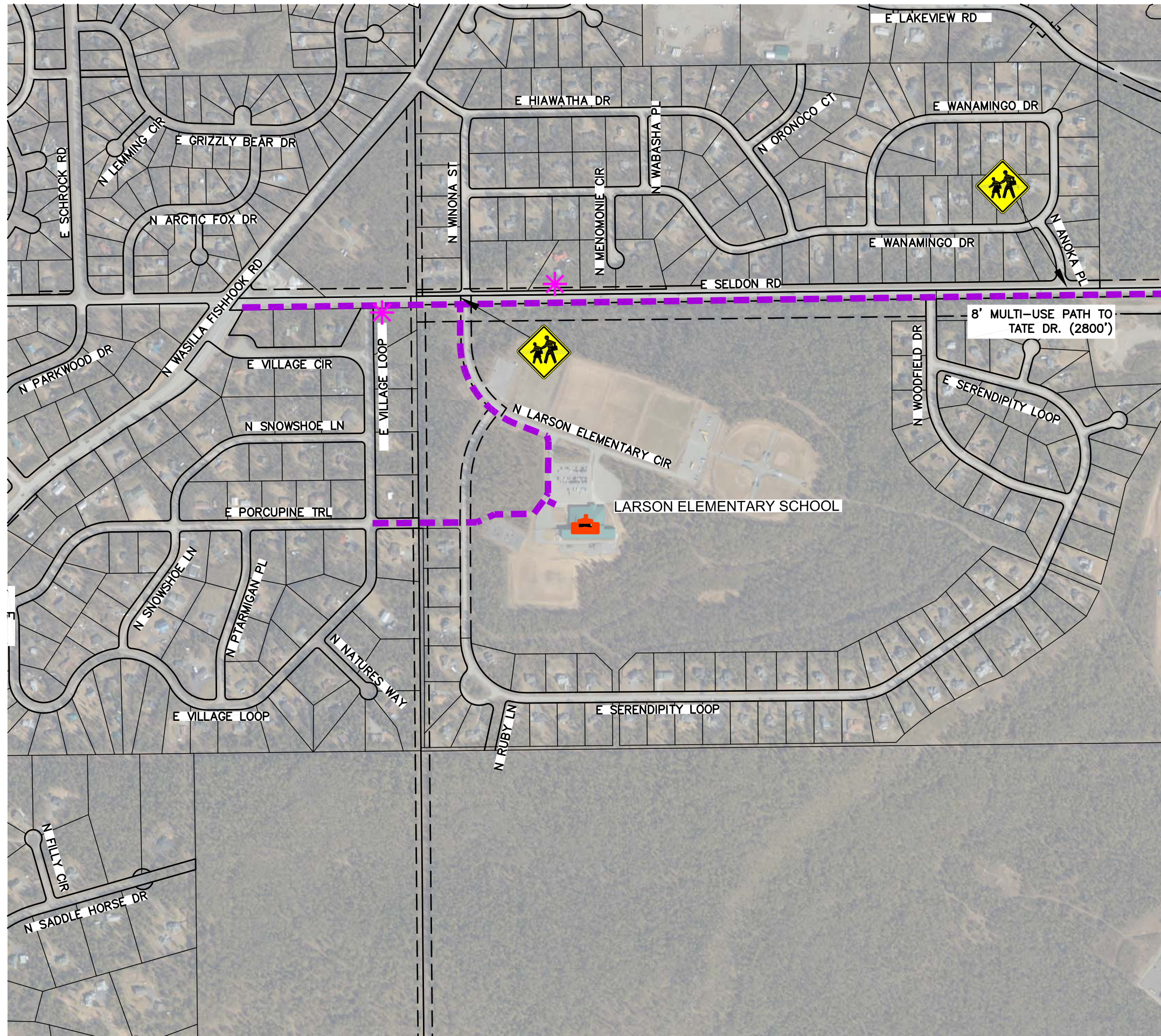
LEGEND	
	SCHOOL
	CROSS WALK SIGNAGE AND STRIPING
	SCHOOL ZONE FLASHING LIGHT & SIGNS
	STREET LIGHT
	PARKING LOT SIGNAGE
	8' MULTI-USE PATHWAY
	4' SIDEWALK
	TURN POCKET/LANE
	BUS STAGING
	PARKING LOT ADDITION

FIGURE 4

MSBSD 2018 PEDESTRIAN PROJECTS

LARSON ELEMENTARY SCHOOL

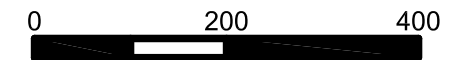
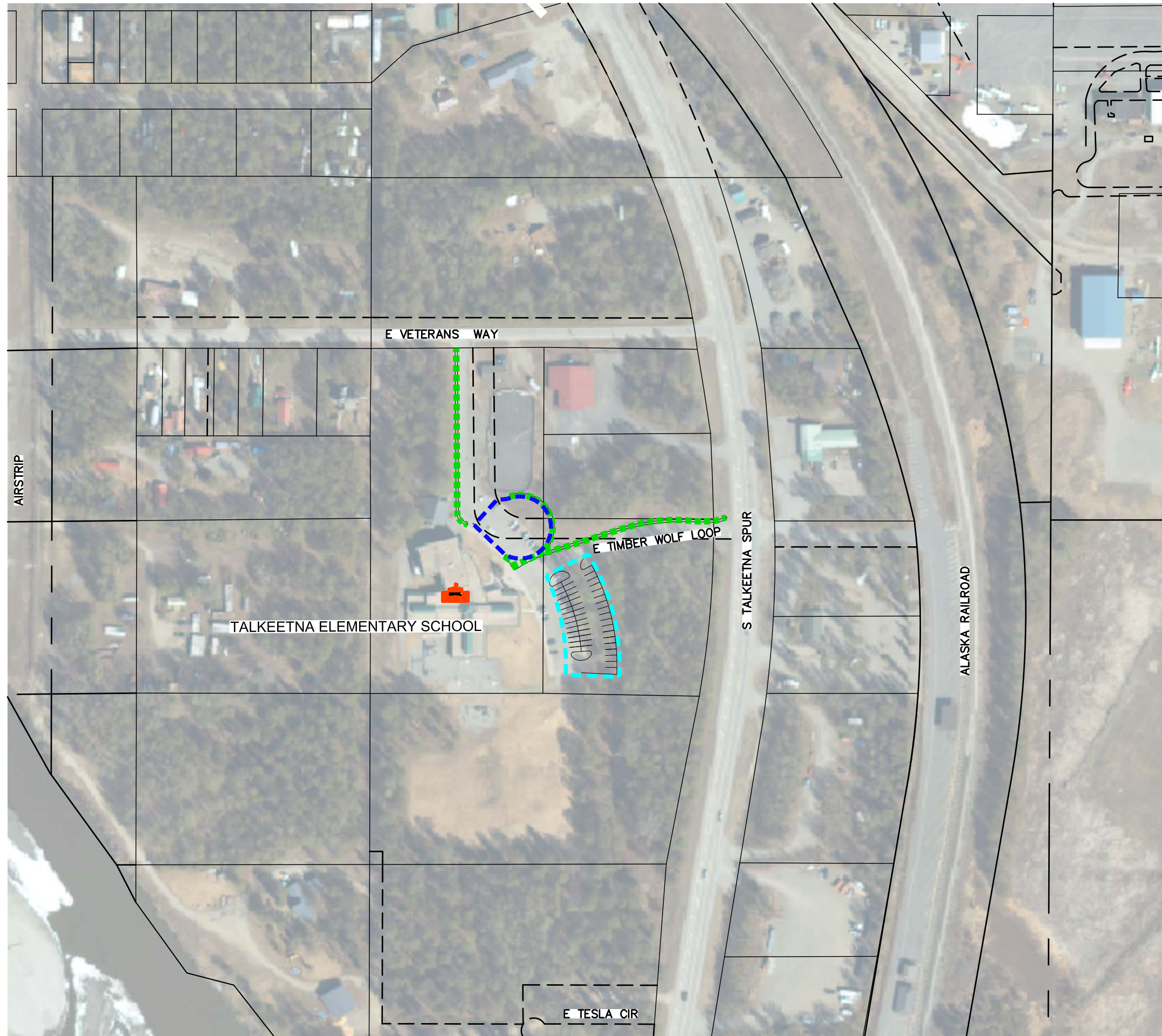


LEGEND	
	SCHOOL
	CROSS WALK SIGNAGE AND STRIPING
	SCHOOL ZONE FLASHING LIGHT & SIGNS
	STREET LIGHT
	PARKING LOT SIGNAGE
	8' MULTI-USE PATHWAY
	4' SIDEWALK
	TURN POCKET/LANE
	BUS STAGING
	PARKING LOT ADDITION

FIGURE 5

MSBSD 2018 PEDESTRIAN PROJECTS

TALKEETNA ELEMENTARY SCHOOL



LEGEND











-  SCHOOL
-  CROSS WALK SIGNAGE AND STRIPING
-  SCHOOL ZONE FLASHING LIGHT & SIGNS
-  STREET LIGHT
-  PARKING LOT SIGNAGE
-  8' MULTI-USE PATHWAY
-  4' SIDEWALK
-  TURN POCKET/LANE
-  BUS STAGING
-  PARKING LOT ADDITION

FIGURE 6