

Linden School no. 1 2014 School Travel Plan



720 N. Wood Ave. Linden, NJ



Prepared by Meadowlink
144 Park Pl. East. Wood-Ridge, NJ

For The City of Linden



Acknowledgments

This report was prepared by the Meadowlinds Transportation Brokerage Corporation d/b/a Meadowlink, a non-profit organization dedicated to implementing transportation programs and services that enhance the quality of life, regional mobility, and economic opportunity for people while reducing traffic congestion and improving air quality.

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U.S. Department
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**Federal Highway
Administration**

Report and Design by:
Christopher Rodriguez
Safe Routes to School Assistant Coordinator
CRodriguez@ezride.org

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Introduction

What is Safe Routes to School (SRTS)

Safe Routes to School (SRTS) is a federal, state, and local effort to enable and encourage school aged children, including those with disabilities, to walk and bicycle to and from school. The program focuses on reversing the decline in children walking and bicycling to school. SRTS facilitates the planning, development and implementation of projects that improve safety and air quality and reduce fuel consumption. Safe Routes to School also plays a critical role in reversing the nationwide trend toward childhood inactivity, obesity and heart disease.

Using the 5 Es: Education, Encouragement, Enforcement, Engineering, and Evaluation, Meadowlink's Safe Routes to School Program works to empower and assist the community of Linden to identify issues, create partnerships, and implement projects to encourage walking and biking to and from school.

How to use this Travel Plan

A School Travel Plan (STP) is a written document that outlines a community's actions and methods to encourage children to walk and bike to school. With this plan, a community is able to coordinate the efforts of its local police force, the school, and the municipality towards strengthening their Safe Routes to School Program. This is useful when a community is looking to create a long term plan for their Safe Routes to School program, or if they are applying for SRTS infrastructure funds.

A School Travel Plan sets the groundwork for future engineering studies, coordinates police enforcement efforts, and plans future school activities that all together help make walking and bicycling to school a safe and accessible alternative to being driven. A School Travel Plan can be used to engage and inform key stakeholders in the community about the Safe Routes to School Program. Make sure that your municipal Engineer, municipal Planner, Mayor and school district are aware of your School Travel Plan to maximize its effectiveness.

Executive Summary

Linden is an urban school district with a major county road cutting through it called North Wood Ave. and South Wood Ave, which is also a major truck route for the City of Linden. These two factors create heavy congestion on N.Wood Ave. School 1 Elementary also lies on N.Wood Ave. and parents who drop off and pick up their children from school contribute to traffic in the morning and afternoon.

The City of Linden has made steps to increasing the safety of pedestrians, particularly along N.Wood Ave. A study was commissioned by Linden to have an engineering firm (Neglia Engineering Associates) perform a traffic study along N.Wood Ave. and recommend infrastructure improvements to increase safety along that corridor. Linden's school 1 was included in that study and Meadowlink partnered with local stakeholders to create a School Travel Plan for School 1.

Meadowlink has identified N.Wood Ave. as a focus area due the high number of pedestrians crashes and high number of students who live along N.Wood Ave. Meadowlink has also identified 3 other routes that were of high priority need for pedestrian and bicycle improvements due to the high number of school children who live around those areas: see pg 13 -22.

Currently, 16% of students walk to school in the morning and 22% walk home from school. The majority of children are driven by their parents and zero bicycle to or from school. Linden is a very walkable community with few students walking. This School Travel Plan highlights infrastructure deficiencies and recommends certain infrastructure improvements to increase the safety and ability of children to walk and bicycle to school. These recommendations are highlighted in the 5 Es (Education, Encouragement, Enforcement, Engineering, and Evaluation) on pages 23 - 29.

School Description

The population of students served by School 1 has increased significantly since the 2011-12 school year. This means many more children will require a safe and reliable mode of transportation to get them to school. School 1 is also home to a diverse crowd of students speaking a variety of languages. Spanish, Polish, and Portuguese are the most spoken languages aside from English. (see Figure 1.1)

Linden school 1 is located in a walkable area of Linden, close to the downtown portion of N. Wood Ave. The school district has limited busing and a small number of children walk. The school does have a pair of crossing guards on the intersections of N. Wood Ave. and E. Gibbons St; E. Curtis St. and N. Wood Ave; and E. Gibbons and Washington Ave; E. Curtis St. and Washington Ave. and E. Curtis St. and Maple Ave. (See figure 1.2).

Student Enrolment 2010 - 2013

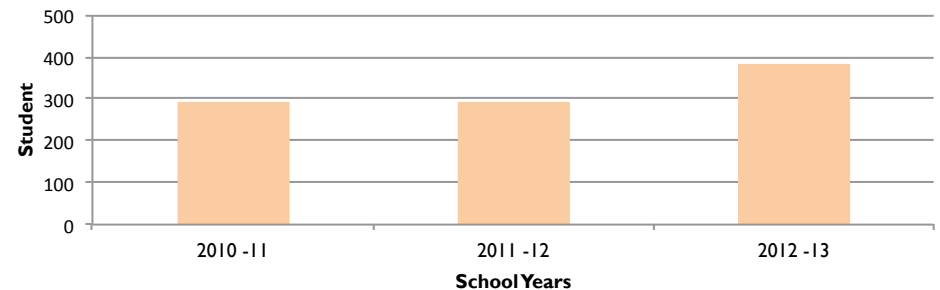


Figure 1.0 Source: NJ School Performance Report (Appendix 1.b)

2012 - 13 Languages Spoken at Home

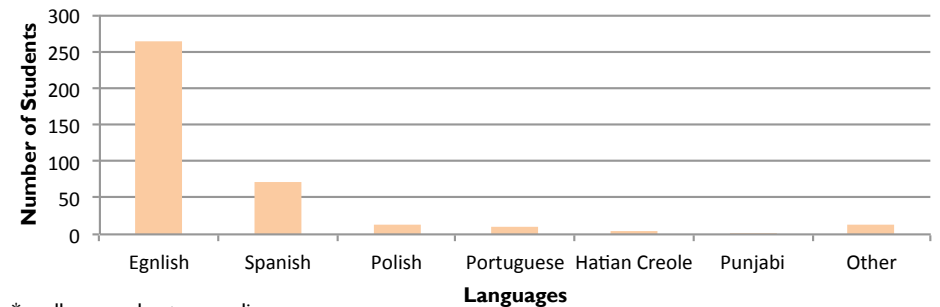


Figure 1.1 Source: NJ School Performance Report (Appendix 1.b)

Map of a 10 minute walk to School 1

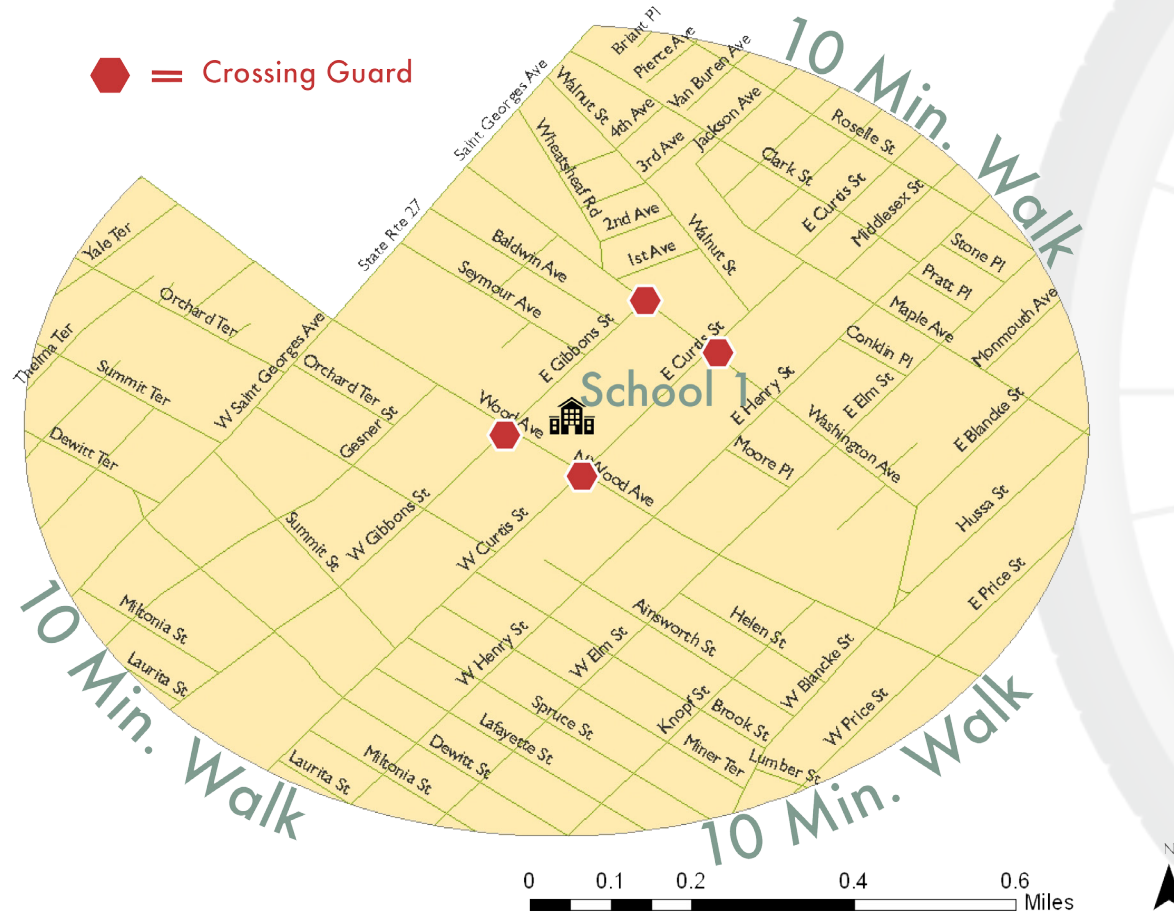


Figure 1.2

Travel Plan Working Group

Partner Organizations		
Organization	Role/Responsibility	Contact
School 1 Elementary/SRTS Champion	Program/Activity Implementation	Dona Preston Principal 720 N.Wood ave. Linden, NJ dpreston@linden.k12.nj.us (908) 486-2668
Meadowlink	SRTS Program Assistance, Community Resource, Safety Education	Christopher Rodriguez Safe Routes to School Assistant Coordinator 144 Park place East Wood-Ridge, NJ Crodriguez@ezride.org (201) 939-4242
Tri-State Transportation Campaign	Advocacy, Community Resource	Janna Chernetz New Jersey Advocate 350 West 31st Street New York, New York janna@tstc.org (609) 271-0778
NJ DOT	Grant Funding, State SRTS Resource, SRTS Best Practices	Elise Bremer-Nei, AICP/PP Safe Routes to School Program Coordinator P.O Box 600 Trenton, NJ elise.bremer-nei@dot.state.nj.us (609) 530-0600
Alan M. Vorhees Transportation Center	Web based Resources, Technical Assistance, SRTS Recognition Program, SRTS Tools and Training	Leigh Ann Von Hagen, AICP/PP Senior Research Specialist 33 Livingston Ave. New Brunswick, New Jersey lavh@ejb.rutger.edu (848) 932-2854
City of Linden Department of Engineering	Engineering Project Implementation	Joseph Chrobak Linden City Engineer 301 N.Wood Ave Linden, NJ engineering@linden-nj.org 908-486-0725

Figure 1.3

This Safe Routes to School program was initiated when Tri-State Transportation Campaign introduced Meadowlink to the Linden Police Department in the fall of 2013. With assistance from the municipal Police Department, Meadowlink was able to reach out to School 1 and conduct a pedestrian safety presentation during the winter.

In the winter, a dismissal observation was held to observe pedestrian and driver behavior around each school. Surveyors noticed heavy congestion and unsafe behavior on the part of pedestrians and motorists.

On May 29th 2014 a walkability audit was conducted to evaluate the walking and biking conditions around each school. The conditions for this audit were warm and sunny. The organizations that participated in the audit were the Linden Police Department, Meadowlink and Tri-State Transportation Campaign.

The full “working group” for School 1’s Safe Routes to School program can be seen on Figure 1.3.

Travel Tallies

Travel Tallies document how children travel to and from school. Tallies are taken by teachers three times a week for one week. In total, 618 tallies were taken for arrival and 585 tallies for dismissal.

About half of the children at School 1 arrive and leave school in their parent's/guardian's car. Pick-ups and drop-offs contribute to morning and afternoon congestion along corridors surrounding the school. N. Wood Ave. experiences a significant amount of traffic during arrival (8:00 AM) and dismissal (3:00 PM), noted during an observation of School 1's dismissal.

Currently, no children bicycle to school and this is likely due to various factors such as a lack of bike parking, lanes and signage. The Safe Routes to School team will seek to understand these factors and address them in this Travel Plan.

With 16% of students walking to and from school, Linden School 1 is just above the national average percentage of children who walk to school and from school - 15% (Appendix 1.a). As the Safe Routes to School program progresses, we will focus on taking advantage of Linden's walkability and increase the safety and accessibility of children walking and bicycling to school.

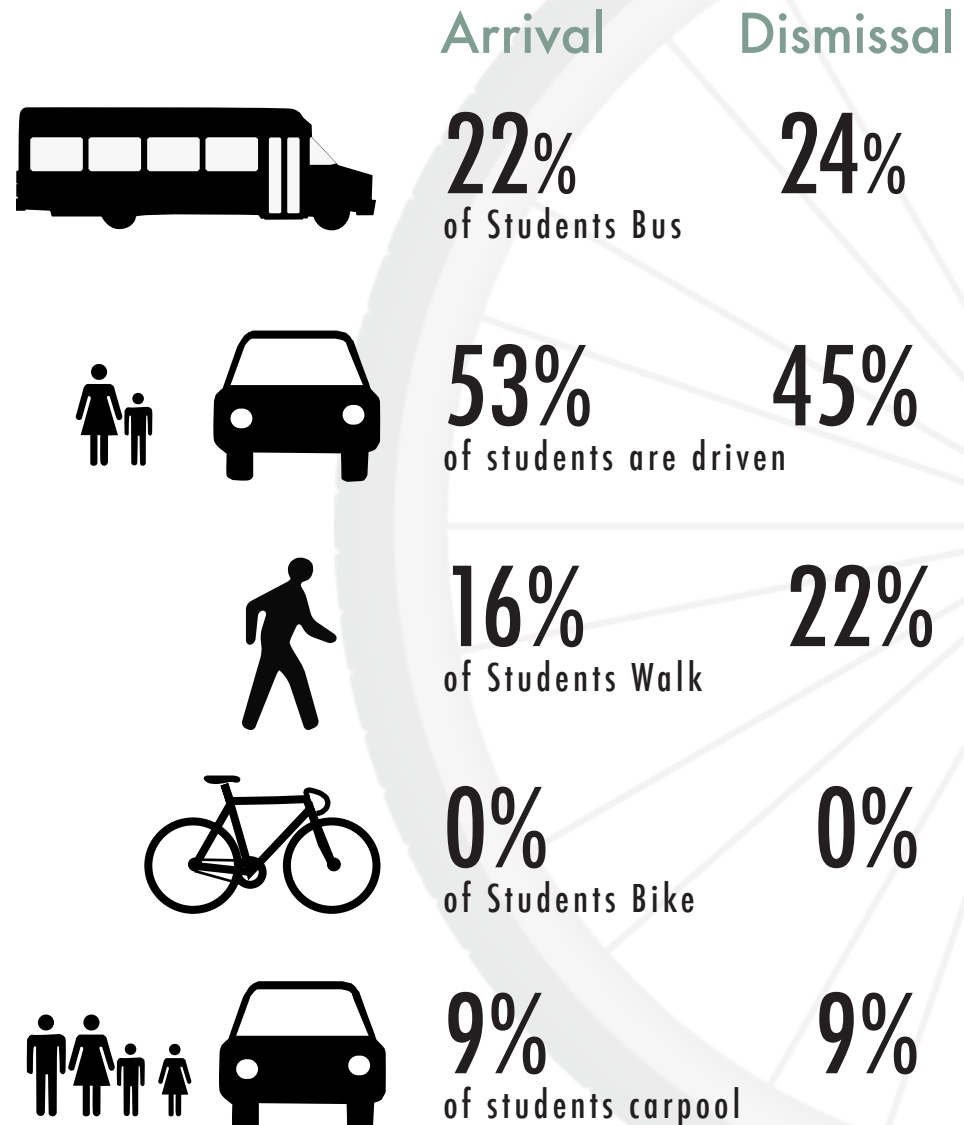


Figure 1.3

Parent Survey*

Method

Parent Surveys were distributed to students in the winter of 2014. Surveys were filled out and returned to Meadowlink. The Voorhees Transportation Center at Rutgers University compiled the data. 26 survey in total were analyzed.

Student Information

Of all the respondents: 8% were in Pre-K, 12% were in Kindergarten, 25% were in 1st Grade, 8% were in 2nd Grade, 4% were in 3rd Grade, 21% were in 4th Grade, and 21% were in 5th Grade.

64% of the respondents had male children, and 36% had female children attending School 1.

Areas of Concern

The four things parents cited as the most important issues in allowing their child to walk or bike to school were

- unsafe crossings/intersection
- availability of crossing guards

- stranger danger, and
- personal safety

The least important factors were

- availability of bicycle parking
- weight of the child's book bag

Room for Growth

- 40% of respondents stated that when their child walks to school, they have adult supervision of either a parent or another adult
- 10% of parents cited their children walking alone
- 7% of children walk with a sibling and
- 7% of children walk with another child
- 36% of respondents stated their child does not walk or bike to school
- 44% of respondents reported their child not having a bicycle

* Full parent survey is available on request from Meadowlink or the Voorhees Transportation Center

Pedestrian & Bicycle Crashes

City of Linden Pedestrian Crashes by Age

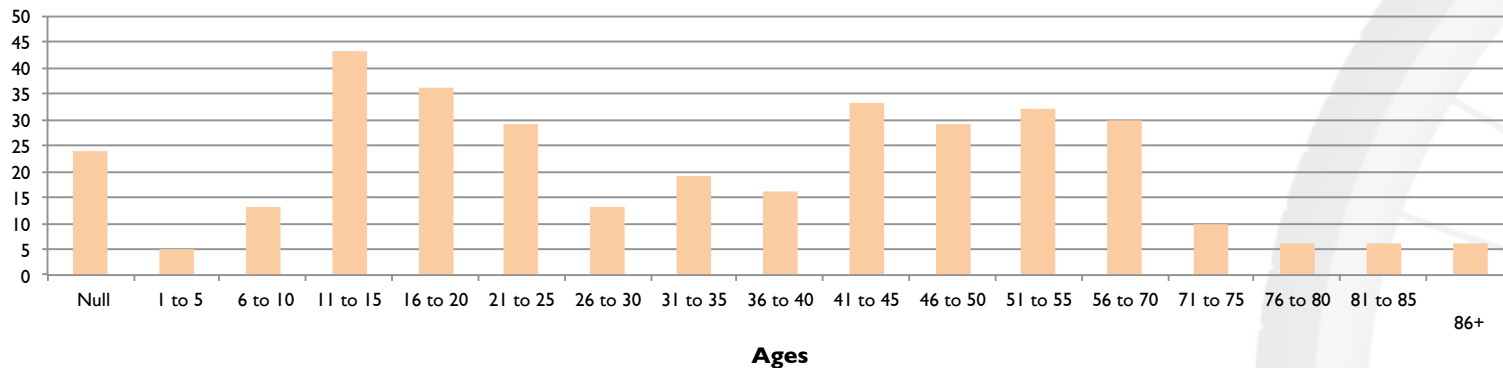


Figure 1.4

Pedestrian Injuries and Fatalities:

Between the years of 2003 and 2013 the number of pedestrians injured or killed due to traffic related incidents has not significantly improved (figure 1.5).

A study has been conducted along N.Wood Ave. by Neglia Engineering to understand what improvements can be made to increase pedestrian safety along N.Wood Ave. This School Travel Plan will highlight strategies being considered in the municipal traffic study and propose how to build on them to reduce pedestrian injury.

Linden Ped Crashes by Injury and Fatality

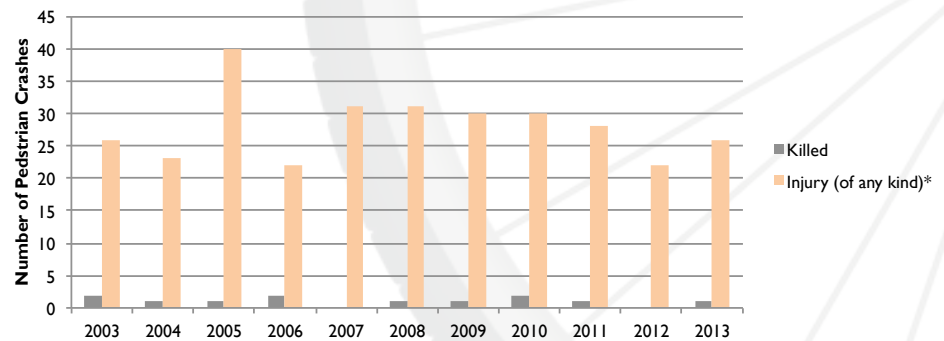


Figure 1.5 Source: Plan 4 Safety 2014 (Appendix 1.c)

Crash Data of Children

2003 - 2013 Linden Children Crashes

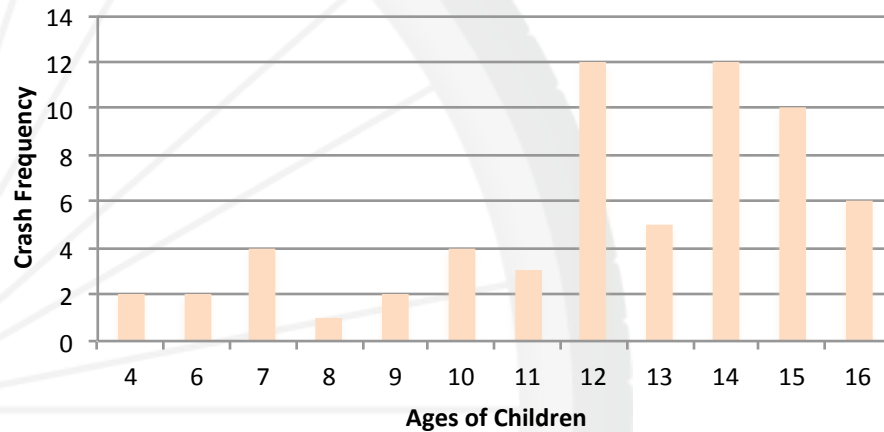


Figure 1.6 Source: Plan4Safety 2014 (appendix 1.c)

Children Involved in Automobile Crashes

According to the crash data provided by Rutgers CAIT (Center for Advanced Infrastructure and Transportation) from 2003 - 2013, six children have been struck on their way to school. These statistics should also make clear the need more safe pedestrian accommodations, with an emphasis on school age children.

In total 63 children from the ages of 4 - 16 have been struck by an automobile in Linden, NJ (see Figure 1.6). Of these crashes 17 were due to unsafe crossing - indicating a need for pedestrian safety education, which Meadowlink provides.

Focus areas

Method for Choosing the Routes

The Meadowlink Safe Routes to School team, Tri-State Transportation Campaign and the Linden Police Department audited several routes that were identified as being heavily walked by students of School 1. The walkability/bikeability audit examined the safety of children traveling to school on foot or bicycle.

These routes were identified by plotting student addresses and choosing routes that serviced the highest number of students that could potentially walk to school. The majority of students live close to N. Wood Ave, East Curtis St., West Curtis St, E. Gibbons St, Linden Ave. and Wheatsheaf Rd. There were the routes that were included in the audit. A detailed display of the four routes chosen can be seen on Figure 1.7. All of these routes have a speed limit of 25 MPH. The audit was conducted on a sunny day, May 29, 2014.

The concerns highlighted in the following section are based on a combination of discussions with the school administrators, crossing guards, police officers, observations of dismissal, and the audits of the routes chosen.

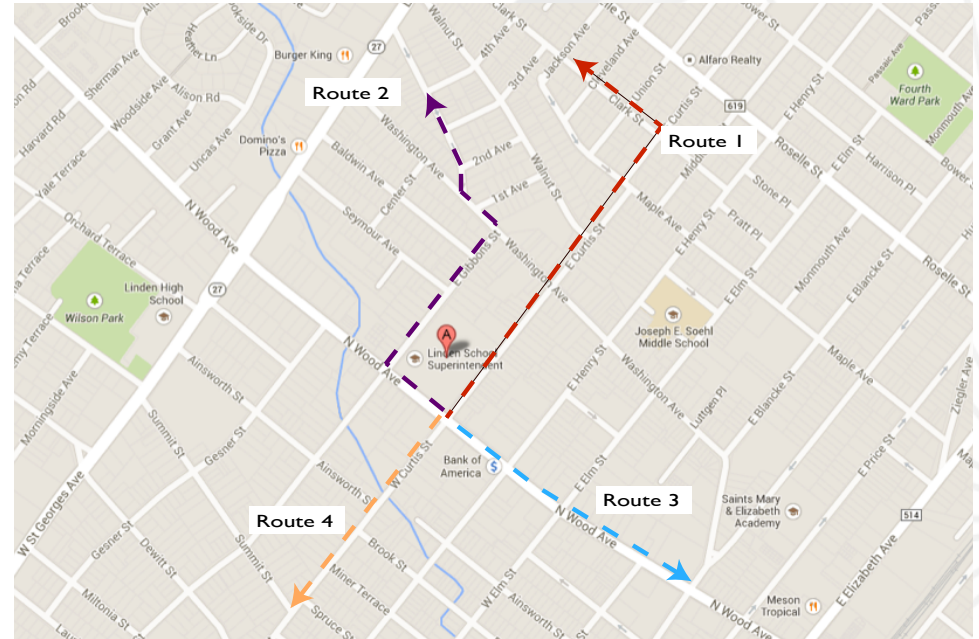


Figure 1.7 Source: Google Earth 2014

Focus Areas

Observations: Route 1

E. Curtis St. and Clark St.

E. Curtis St. and Clark St. are both residential streets with E. Curtis St. experiencing heavy traffic during dismissal and arrival and feeding into N. Wood Ave. The wide lanes on both these roads encourage excessive speeding. The majority of E. Curtis St. has no striping of its travel or parking lanes. Many intersections on this route lack crosswalk striping and need to be reviewed for ADA* compliance.

The intersection of E. Curtis and Washington has marked crosswalks on all sides and has a crossing guard during school arrival and dismissal (Figure 2.1). Other intersections on this route such as E. Curtis St. and Walnut St; and E. Curtis St. and Clark St. (Figure 2.4) do not have the same pedestrian facilities, making these intersections less accommodating to pedestrians. The intersection of E. Curtis and Maple Ave. has only one marked crosswalk across Maple Ave. making crossing the street difficult, (Figure 2.2) despite the presence of a crossing guard.

*Americans with Disabilities Act



Figure 2.1 E. Curtis St. and Washington Ave.



Figure 2.2 E. Curtis St. and Maple St.

Focus Areas

Route 1 (continued)

Clark St. is a low volume residential street. Clark St. has some curb ramps at its intersections meant to conform to ADA. There are few marked crossings across or along Clark St. (Figure 2.3).

This route has seen one crash between a pedestrian and a motorist at the intersection of E. Curtis St. and Washington Ave.

There are no bicycle sharrows, lanes, or parking on this route.

Potential Solutions:

- Bicycle lanes or sharrows can help accommodate cyclists
- Striping of parking lanes to narrow the lanes
- Make consistent crosswalk striping across all intersections
- Curb extensions at wide crossings can decrease the distance pedestrians need to walk to cross the street
- Survey intersections for compliance with ADA



Figure 2.3 Clark St.



Figure 2.4 E. Curtis and Clark St.

Focus Areas

Observations: Route 2

E. Gibbons St. and Wheatsheaf Rd.

E. Gibbons St. is a residential street that has fast traffic and congestions during school dismissal and arrival. From N. Wood Ave. to Washington St. there is no lane striping, making the road seem very wide, which encourages speeding. Congestion is common during school dismissal. When children are dropped off and dismissed, there is a backlog of cars.

The intersection of N. Wood Ave. and E. Gibbons St. has a crossing guard that is present during dismissal and arrival. The crossing guard mentioned poor driver behavior, which includes ignoring the crossing guard and driving through red lights. Between 2003 and 2013, two off pedestrians were struck at this intersection.

The intersection of Washington and E. Gibbons also has a crossing guard who struggles with motorists that ignore him and speed through the intersection (Figure 2.6). Not all crosswalks are marked at this intersections, which according to the crossing guard encourages unsafe mid-block crossings and pedestrian/motorist conflicts.



Figure 2.5 E. Gibbons and Seymour Ave.



Figure 2.6 E. Gibbons and Washington Ave.

Focus Areas

Route 2 (continued)

There are no marked crosswalks on the majority of the intersections along E. Gibbons Ave. and Wheatsheaf Rd. The majority of the curbs look as though they need to be reviewed to ensure they conform with ADA.

There are no bicycle sharrows, lanes, or parking on this route.

Potential Solutions:

- Bike lanes or sharrows depending on available space
- Lane striping to help narrow lanes
- High visibility crosswalks at the intersections of N. Wood Ave. and E. Gibbons Ave; and E. Gibbons Ave. and Washington Ave.
- Crosswalks along Gibbons Ave. and Wheatsheaf Rd.
- Curb extensions on key intersections can decrease the distance pedestrians need to walk to cross the street
- Hawk signals and additional school zone signage can help keep motorists observant of children walk to school
- Survey intersections for ADA compliance



Figure 2.7 Wheatsheaf Rd. and 2nd Ave.



Figure 2.8 Wheatsheaf Rd. and 3rd Ave.

Focus Areas

Observations: Route 3

N. Wood Ave.

This Route on N.Wood Ave. had heavy traffic and excessively wide travel lanes (Figure 2.9). Truck traffic created an odor of exhaust along the route. North Wood Ave. from West Curtis St. and West Blancke St. saw excessive speeding throughout the route. No speed limit sign was posted throughout the route.

N.Wood Ave is a very wide roadway and the only marked crosswalks are low visibility and do not provide a sense of security for pedestrians crossing N.Wood Ave. The intersections along N.Wood Ave. need review for compliance with ADA.

There were no bicycle facilities along the route despite the road being wide enough to comfortably accommodate bike lanes. Cyclists were sighted riding on the sidewalk or on the street trying to find space to ride (Figure 2.10).



Figure 2.9 N.Wood Ave.



Figure 2.10 N.Wood Ave.

Focus Areas

Route 3 (continued)

Every intersection along this route saw at least one pedestrian crash with a motorist between 2003 and 2013. The intersection with the most pedestrian crashes was N. Wood Ave. and Blancke (Figure 2.11) with eight pedestrian crashes in that time period. Another intersection with a high number of pedestrian crashes was N. Wood Ave. and E. Henry St. (Figure 2.12) with six pedestrian crashes. This route was by far the most dangerous of the four with a total of 26 reported pedestrian crashes between the years of 2003 and 2013.

Potential Solutions:

- Bicycle lanes to narrow the travel lanes and lower traffic speeds
- Sharrows where travel lanes narrow
- High visibility crosswalks across and along N. Wood Ave.
- Curb extensions to decrease the distance pedestrians need to walk to cross the street
- Hawk signals and additional school zone signage can help keep motorists observant of children walking or cycling to school



Figure 2.11 N. Wood Ave and Blancke St



Figure 2.12 N. Wood Ave and Henry St

Focus Areas

Observations: Route 4

W. Curtis St.

W. Curtis is a residential street that feeds into N. Wood Ave. Many drivers at the intersection of W. Curtis St. and N. Wood Ave. speed to beat the light. According to the crossing guard, there are many occurrences of speeding and drivers not obeying the crossing guard.

There is no sidewalk on one side of W. Curtis Ave. between N. Wood Ave. and Ainsworth St. (Figure 2.13). The sidewalk continues again after Ainsworth St. (Figure 2.14). In addition, there are no crosswalks between any street on this route. There is a lack of ADA compliance and some speeding was observed walking through the route.

The majority of the curbs look as though they need to be reviewed to ensure they conform with ADA.



Figure 2.13 W. Curtis St.



Figure 2.14 W. Curtis St. And Ainsworth St.

Focus Areas

Route 4 (continued)

There were two incidents of pedestrians being struck by motorists on this route between the years of 2003 and 2013. One pedestrian was struck at the intersection of N. Wood Ave. and W. Curtis St. and another pedestrian was struck at the intersection of W. Curtis St. and Summit St.

Potential Solutions:

- Bike lane or Sharrows to accommodate cyclists
- High visibility crosswalks at the intersection of N. Wood ave. and W. Curtis St.
- Hawk signals and additional school zone signage can help keep motorists observant of children walk to school
- Install a sidewalk on W. Curtis St. where there is none
- Survey sidewalks for ADA compliance



Figure 2.15 W. Curtis St.

Other Focus Areas

Observations: N. Wood Ave Stairs

There is a flight of stairs directly in front of the entrance of School 1 that leads onto N. Wood Ave. and many parents and children cross the street mid-block here (Figure 2.16).

This poses a significant risk to children and parents who cross the street here. Possible solutions include the removal of the stairs or a mid-block crosswalk to provide warning signals and traffic calming.

Observations: Bicycle Facilities

Currently, there are no bicycle routes that lead to School 1. School 1 reported zero children bicycling to school and the lack of bike racks, signage, lanes/sharrows and high level of fast traffic may deter many from bicycling to school.

To promote bicycling to school, bike lanes with buffers can be installed on N. Wood Ave. Bike lanes and sharrows can also be installed on roads that feed into N. Wood Ave. like E. Gibbons, West Curtis (Figure 2.17) and Blancke St.



Figure 2.16 Entrance of School 1



Figure 2.17 Cyclist sighted during audit

Work Program: Addressing the 5 E's

Goals:

1. To make the trip to and from school safer and more accessible for children who walk and bicycle
2. To encourage more children to walk and bike to and from school.
3. To improve the health and wellbeing of children through increased physical activity
4. To establish healthy habits amongst school children
5. To reduce traffic congestion around schools at the time of arrival and dismissal
6. To reduce the production of greenhouse gases from parents driving children off at school

Actions:

In order to achieve these goals listed, the various partners involved in School 1's Safe Routes to School Program will use the 5 Es: Education, Encouragement, Enforcement, Engineering and Evaluation.

1) Education

Actions involving education are meant to change attitudes towards walking and bicycling to school and equip students with knowledge about how to behave safely while walking or cycling to school. Other targets for the education piece are faculty, officials, or parents who can learn about actions they can take to improve the safety of students who walk to school.

During the 2013 - 14 school year, Meadowlink conducted a pedestrian Safety Presentation that addressed how to safely cross the street. Every grade K - 5 participated, and future events or activities will build on this presentation.

Education Action	Responsibilities	Timeline
Circulate Travel Plan Report on school website	Board of Education	Fall 2014
Update the (or create a) Family Handbook that defines arrival and dismissal procedures with map and text that defines drop-off/pick-up areas, the rules and procedures for driving along local streets within school campus and any school driveway access, and areas designated for bike parking	School/PTA	Fall 2014 to 2015
Invite Meadowlink to help with bicycle and pedestrian education at assemblies or weekend Bike Rodeos	BOE/Meadowlink /PTA/School	Fall 2014
Utilize the school website to advance Safe Routes to School safety campaign/messages	BOE/School	Fall 2014
Integrate walking, bicycling, and traffic safety education into classroom curriculum	Meadowlink / BOE/PTA	Fall 2015
Install permanent roadway centerline "Stop for Pedestrian" signs along N. Wood Ave.	BOE	Spring 2015
Leverage Social Media to spread awareness of school zone and enforcement activities	BOE/School	Fall 2014
Confirm School Zone signs adequately identify the school area	BOE	Fall 2014
Drop-off line instructions, help to reduce length of car lines and conflicts	PTA/School Board/Principal	Fall 2014
Define and sign an area along E. Curtis St. for drop-off or pick-up	Principal/BOE	Spring 2015
Cell phone free zone: In school, Outside during arrival and dismissal	Principal	Fall 2014

Figure 3.1

Encouragement Action	Responsibilities	Timeline
Incentives/SWAG (Stuff We All Get): Bracelets, Bike lights, stickers, etc. for Safe Routes to School events	PTA/Meadowlink	2014 - 2015 School year
Create school map of preferred drop-off/pick-up locations, walking routes, biking routes, crosswalks, bike parking, park and walk locations, etc.	PTA/Meadowlink	Fall 2014 to Spring 2015
Create and distribute fake "tickets" to reprimand drivers/walkers/bicyclists for unsafe behavior	School/PTA	Fall 2014
Participate in International Walk to School Day in October and National Bike to School Day in May and NJ Walk to School Day in October	Principal/Meadowlink /School	October 2014.
Establish and organize Bike Trains/Walking School Buses to connect students and families who are already walking or are considering walking/biking	Meadowlink	Fall 2014
Include Crossing Guard Appreciation Day with every bike/walk to school event	Principal/ Meadowlink/ School	Fall 2014
Enforce any new parking regulations within the school zone first through warnings, then through ticketing	Principal/Police	Fall 2014
Create warm fuzzies or "thank you's" to reward drivers/walkers/bicyclists for displaying model behavior	Safety Patrol/ /School	Spring 2015 to Fall 2015

Figure 3.2

2) Encouragement

The encouragement portion of Safe Routes to School is a combination of events and activities aimed at making walking and bicycling to school a more appealing option for students being driven to school. These activities also seek to discourage parents from driving students to school and dissuade motorists from unsafe actions that may endanger children walking or bicycling to school.

Participating in Walk to School Day in October is an example of encouraging students to walk more often to school, while fake tickets" can encourage motorists to stop unsafe behaviors that might endanger the lives of pedestrians and bicyclists. A combination of these activities are meant to spark new habits and sustain a successful Safe Routes to School Program.

With the assistance of Meadowlink, the PTA, and the local municipality, School I will participate in the Safe Routes to School actions indicated in Figure 3.2

3) Enforcement

Enforcing legal and safe behavior of pedestrians and motorists is essential to ensuring the safety of children walking and bicycling to and from school.

Meadowlink and School 1 are working with the Linden Police Department to ensure that motorist, pedestrians and bicyclists are not acting in a way that puts anyone at risk. Activities like monitoring speeding along N.Wood Ave. and initiating Pedestrian Decoy Operations are significant efforts toward improving the safety of students walking to and from school.

Enforcement Action	Responsibilities	Timeline
Enforce no parking within 25' of crosswalk	Engineering/Police	Ongoing effort
Evaluate Crossing Guard performance and procedures	Police	Begin 2014 or 2015
Conduct speed studies along N.Wood Avenue	Police	Begin 2014 or 2015
Monitor speeding along N.Wood Avenue	Police	Begin 2014 or 2015
Pedestrian Decoy Operation – target unsafe drivers, especially during school commute time	Police/ BOE	Begin 2014 or 2015
Create a student safety patrol utilizing 5 th grade students	PTA/School	2014 - 2015 School year

Figure 3.3

Engineering Action	Responsibilities	Timeline
Share the updated arrival/dismissal procedures/walking and Bike Route maps via PTA web site	Principal/ Engineering/	Contingent on receiving SRTS Grant
Paint "School Zone" pavement legends on the roadways approaching the school	Engineering/Police	Contingent on receiving SRTS Grant
Enforce "No Parking Here To Corner" with signage if needed	Engineering/Police	Contingent on receiving SRTS Grant
Install push button actuated Rectangular Rapid Flash Beacon pedestrian crossing signs(RRFB) at N.Wood Ave. and Henry St, Elm St. and Blancke St.	Engineering	Contingent on receiving SRTS Grant
Use striping to reinforce no parking within 25' of the crosswalk	Engineering	Contingent on receiving SRTS Grant
Curb extension to shorten crossing distance on N.Wood Ave. and Knopf St.	Engineering/County	Contingent on receiving SRTS Grant
Update the Arrival and Dismissal section of the school's Family Handbook with map and text that defines drop-off/ pick-up traffic circulation plan, including rules and procedures for driving along local streets within school campus and any school driveway access	PTA/ Engineering	Contingent on receiving SRTS Grant
Stripe high visibility crosswalk across N. Wood Ave. on Henry, Elm, Knopf, and Blancke St.	Engineering	Contingent on receiving SRTS Grant
Investigate traffic speeds around the school, posted limits, traffic calming concepts such as speed humps or curb extensions, and flashing beacons on the speed limit signs	BOE/ Engineering/ Meadowlink	Contingent on receiving SRTS Grant
Upgrade traffic signals along N.Wood Ave. at all intersections Avenue at Henry, Elm, Knopf, and Blancke St. Check pedestrian crossing timing	Engineering/County	Contingent on receiving SRTS Grant

Figure 3.4

4) Engineering

The engineering recommendations in this School Travel Plan focus on travel routes that have seen disproportionately high rates of pedestrian crashes. N.Wood Ave. is by far the most dangerous street of the 4 routes inventoried in the walkability audit with 26 pedestrian crashes in the past 10 years (Plan4Safety Appendix 1.c)

The City of Linden has placed the safety of pedestrians very high with their commission for a study of N.Wood Ave. complete with infrastructure recommendations*. The "brick and mortar" recommendations for N.Wood Ave. Include:

1. Install pedestrians Push Buttons
2. Install long Life Thermoplastic Striping
3. Install long Life Thermoplastic Crosswalks (per intersections)
4. Restoration/extend sidewalks and curbs (Knopf St.)
5. Raise intersection (Knopf St.)
6. Install Street Lighting (along N.Wood Ave.)
7. Install ADA access upgrades (at intersections)
8. Relocate inlet casting

*The full report is available on request from the municipality of Linden, NJ

3) Engineering

The following infrastructure recommendations are based on the walking audit organized by Meadowlink. These recommendations are meant to supplement the improvements recommended by the Linden-commissioned study by Neglia Engineering on N.Wood Ave. and the streets surrounding School 1.

Currently there are no bicycle accommodations on N.Wood Ave. and the other streets visited on the walking audit. Bicycle accommodations can include protected bike lanes or sharrows for lower speed residential streets. Bicycle parking along the commercial strip of N.Wood and near or on the school premises would also provide accommodations for children bicycling to school. Lastly, signage that encourages motorists to share the road with bicyclists would also help bicyclists feel a sense of shared ownership of the road.

The two intersections of Washington Ave. and E. Gibbons; and Washington Ave. and E. Curtis St. both have crossing guards who have noted dangerous behaviors on the part of both pedestrians and motorists. One of the crossing guards



Figure 3.5 Photo by: Paul Krueger: <http://bit.ly/TnR8F3>

reported being clipped by a car when the motorist ignored his signal to stop and sped past him.

High visibility crosswalks and curb extensions increase the visibility of pedestrians crossing the street and decrease the distance pedestrians need to cross, respectively.

5) Evaluation

The success of Linden School I's Safe Routes to school Program will be indicated by an increase in children who walk or bike to school after the implementation of the 5 Es; and a reduction of pedestrian crashes (specifically that of children) on routes that lead to school.

Student Travel Tally Sheets are used to determine how children travel to and from school. Teachers ask children at the beginning of the day how they arrived and how they will return home. In order to measure the success of the Safe Routes to School program, School I should have teachers fill out travel tallies at the beginning and the end of each school year that the Safe Routes to School Program is in progress. School Tally Sheets can be sent to Meadowlink or directly to the Voorhees Transportation Center at Rutgers University for aggregation and analysis of data.

Meadowlink can provide assistance analyzing data from Travel Tallies and help organize follow up activities.

Evaluation Action	Responsibilities	Timeline
Travel Tallies	School/Meadowlink	Fall 2014 and Spring 2015
Monitor Pedestrian Crash Data	Meadowlink	Ongoing

Figure 3.6

Conclusion

With this School Travel Plan, the City of Linden is equipping itself to improve the safety of students commuting to and from school. This travel plan highlights the current number of children who walk and bicycle to school and the barriers that prevent those numbers from growing.

During its walkability/bikeability audit, there were many places where infrastructure improvements could be made to increase the safety of all roadway users. With the cooperation of the police department, School 1 and the municipality, Linden has the capacity to make walking and bicycling to school a safe and appealing option for children commuting to and from school.

Appendix

I.a) SRTS National Partnership: <http://saferoutespartnership.org/sites/default/files/pdf/What-is-SRST-factsheet-REVISED-06-14-11-w-footnotes.pdf>. Jun 14, 2011

I.b) “State of New Jersey Overview of Linden School I.” New Jersey Performance Report (2013): n. pag. [Http://www.state.nj.us.State of New Jersey.Web. 19 June 2014. <<http://www.state.nj.us/education/pr/1213/39/392660080.pdf>>.](Http://www.state.nj.us.State%20of%20New%20Jersey.Web.19%20June%202014.<http://www.state.nj.us/education/pr/1213/39/392660080.pdf>)

I.c) Plan for Safety. Rutgers University: <http://plan4safety2.rutgers.edu/Login.aspx>. June 20, 2014

