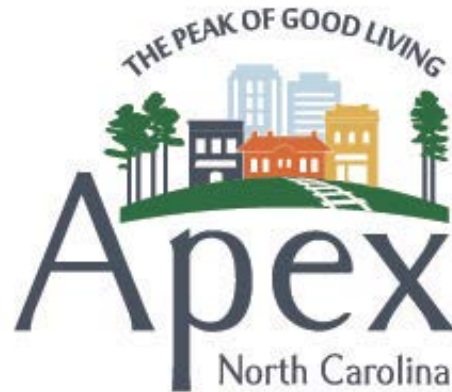


# Safe Routes to School Applications in Apex: A Work in Progress

NCAMPO Conference

Thursday, April 25, 2019



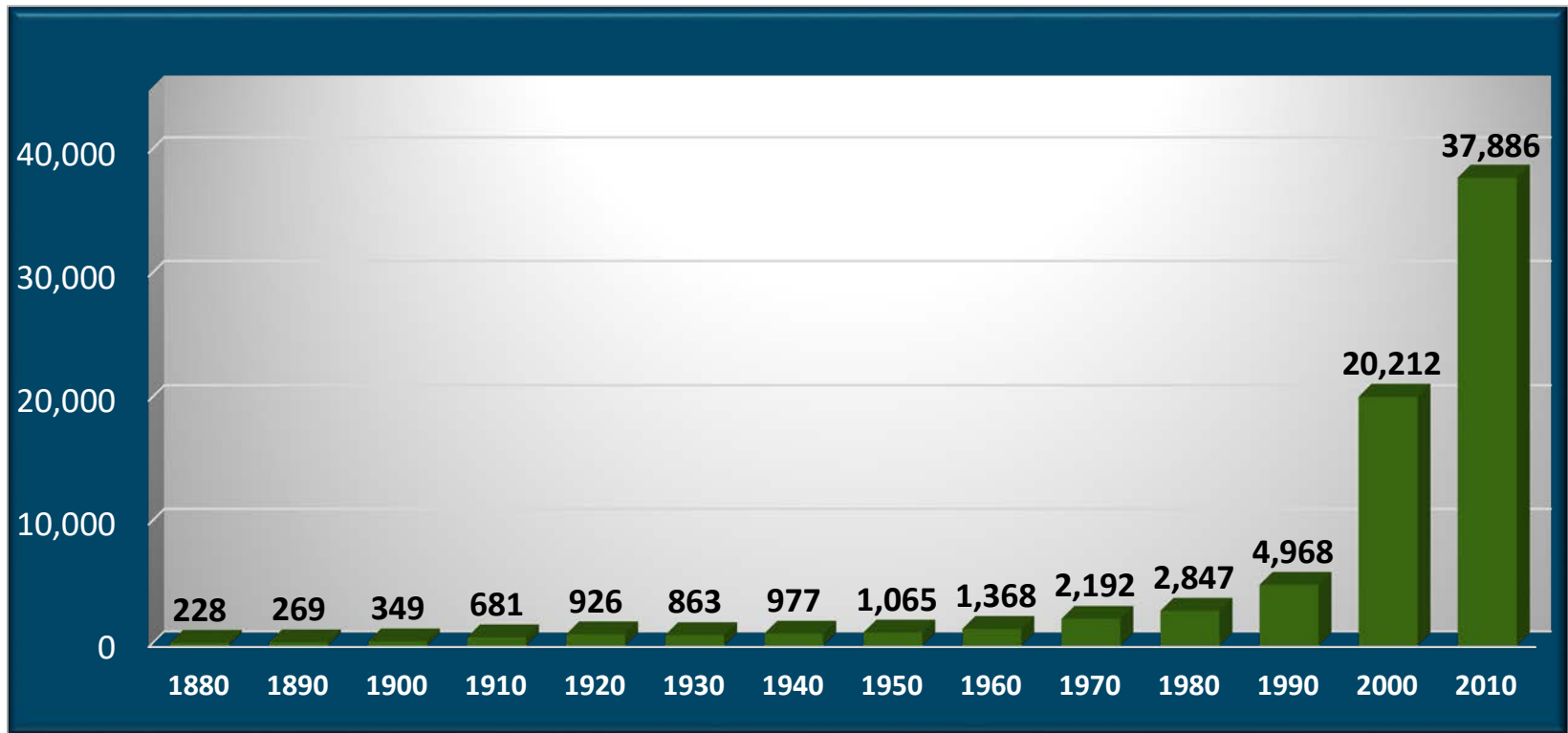
# Overview

- Issues and opportunities in Apex
- Project prioritization process
- Active warning devices
- Project examples
- Lessons learned

# Issues & Opportunities

# #1 – Rapid growth

## Historic Population Estimates



Source: Apex Development Report;  
<http://www.apexnc.org/DocumentCenter/View/405>

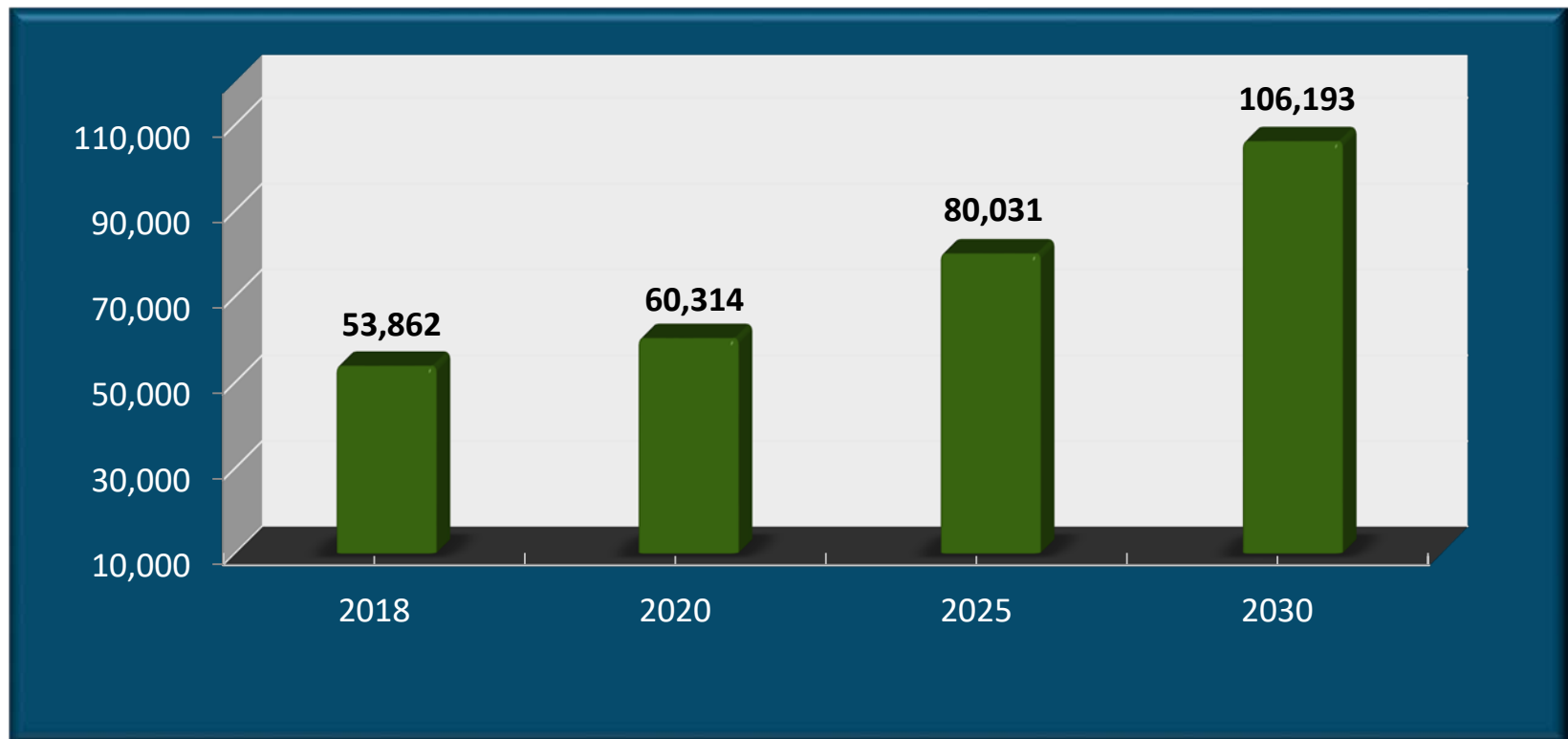


# #1 – Rapid growth

## Current and Projected Population Estimates

Current population estimate: **56,540** (as of February 28, 2019)

Potential population estimate using approved development: **16,018**



Source: Apex Development Report;  
<http://www.apexnc.org/DocumentCenter/View/405>

## #2 – School construction

- Apex Friendship HS - 2015
- Apex Friendship MS - 2018
- Green Level HS - 2017
- Apex High renovation – 2019
- Future Elementary School – 2022
- Future High School – 2024



## #3 – School-related pedestrian crashes

- Apex Friendship High
- Laurel Park Elementary
- Attention and involvement of:
  - Parents
  - WCPSS
  - NCDOT
  - Town of Cary
  - Town Council
  - Administration
  - Police
  - PW&T
  - Planning

Apex student, 10, hit by car after school



Source: abc11.com

## #4 - Long range plans



## #5 – Staff availability

Internship



Long Range Planner

# Project Identification and Prioritization

# Safe Routes to School

Worksheet + Map



Identify Projects



Principal Meeting



Score



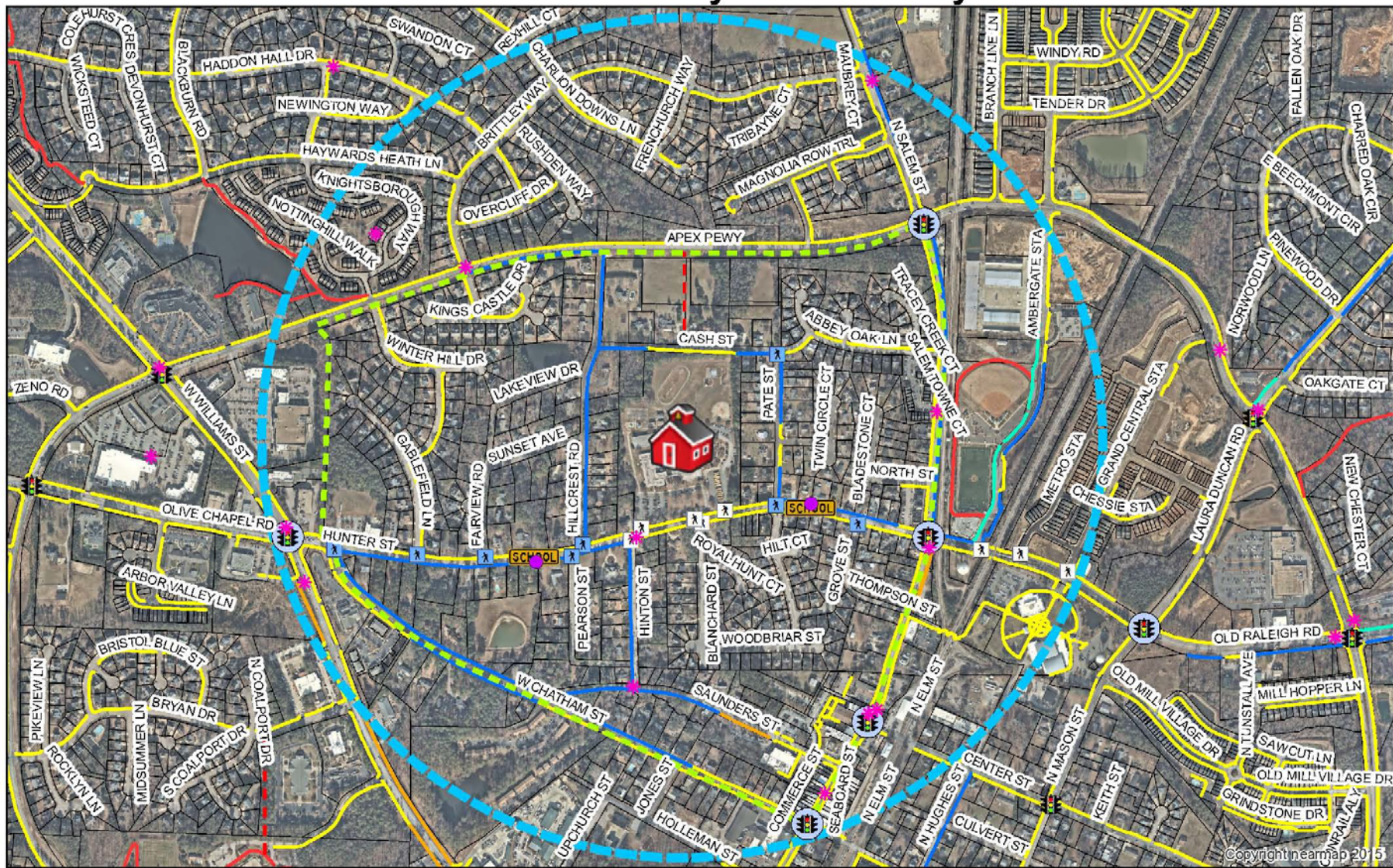
Review &  
Implement


















- Location
- Street class
- Crashes
- Identified need – police, school, etc.
- Existing pedestrian/bike route



## Baucom Elementary School Study Area



-  Signal with Recommendations    
  School Zone Marking    
  Funded Pedestrian Facility    
  Miles  
 1/8     1/4    
 
-  Signal    
  Sidewalk    
  Recommended Pedestrian Facility
-  Flashing Beacon    
  Sidepath    
  Walk Zone (No Transport)
-  Crosswalk Adjacent to School    
  Greenway    
  1/2 Mile School Buffer
-  Recommended Crosswalk    
  Proposed Greenway    
  Bike / Ped Crash



# Key takeaways from principals

- Interest in walking/biking to school
- Encouragement programs
- Existing walk routes
- More pedestrians than cyclists
- Identified priority projects





# Implementation

- Informed & supported LAPP 2020 applications
- Inform future funding – LAPP and/or municipal
- Inform and leverage partnerships
  - WCPSS
  - Southwest Area Study
  - Town of Cary

# Active Warning Devices

# Planning process

- Existing School Zones & Ordinances
- Scoping
- Overall System Map
- Individual Location Maps
- NCDOT Division Staff Coordination (Ordinances, Signs & Markings)
- NCDOT District Staff Coordination (Encroachment Agreement)

# Scope of work (approx. \$135,000)

Proposed Apex School Zone Beacon Network Installation - 2016									
School	Street	Direction	Normal Speed Posted	School Zone Speed Posted	Foundation, Poles, & Beacons	"When Flashing" Signs	Cabinet	New Hardwired or Change Solar to Hardwired	Year round or Traditional
Apex ES	Tingen Road	Southbound	35	25	New	New	New	New	Traditional
		Northbound							
Baucom ES	Hunter Street	Westbound	35	25	Use Existing	Change	Use Existing	Change	Traditional
		Eastbound							
Olive Chapel ES	Olive Chapel Road	Westbound	45	35	New	New	New	New	Year round
		Eastbound							
	Kelly Road	Southbound	45	35	New	New	New	New	
		Northbound							
Scotts Ridge ES	Apex Barbecue Road	Westbound	45	35	Use Existing	Use Existing	Change Cabinet	Change	Traditional
		Eastbound							
Salem Schools (ES + MS)	Old Jenks Road	Westbound	45	35	New	New	New	New	Year round
		Eastbound							
Apex MS	E Williams St	Westbound	35	25	New	New	New	New	Traditional
		Eastbound							
Apex HS	Laura Duncan Road	Southbound	35	25	New	New	New	New	Traditional
		Northbound							
Apex Friendship HS	Evans Road	Southbound	35	25	Use Existing	Use Existing	Use Existing	Change	Traditional
	Humie Olive Road	Westbound	45	35	Use Existing	Use Existing	Use Existing	Change	
		Eastbound							

# Scope of work - continued

- 12 New Location Beacons
- 5 Change-Outs of Pre-timed Solar WCPSS Beacons
- 2 Change-Outs of Key Operated Solar Apex Installed Beacons
- 2 Extra Beacons Not Installed
- Software
- 5-Year Contract on Modems

# Special Ad-ons

- RRFB added to the contract for an elementary school in between the school zone beacons (\$20,508)





# Specification (placement)

## Curb and Gutter Section



3' to face of curb

## Ditch Section



6' to edge line



# Software

glance

Apex Apex - City of Apex NC

powered by Applied Information

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Search

Name	Status	A	
City of Apex NC			
E_Apex_Tingn_SB_old	Comms Fail	0	
H_Apex_Lara_NB-OLD	Comms Fail	0	
Spare_EB	Comms Fail	0	
City of Apex NC - Apex Elem			
E_Apex_Tingn_NB	Online	0	
E_Apex_Tingn_SB	Online	0	
City of Apex NC - Apex Friendship High			
H_ApexF_Evn_SB	Online	0	
H_ApexF_Hmi_EB	Online	0	
H_ApexF_Hmi_WBnotinstalle	Comms Fail	0	
City of Apex NC - Apex High			
H_Apex_Lara_NB	Online	0	
H_Apex_Lara_SB	Online	0	
City of Apex NC - Apex Middle			
M_Apex_EWil_EB	Online	0	
M_Apex_EWil_WB	Online	0	
City of Apex NC - Baucom Elem			
E_Apex_Units_EB	Online	0	
Alarms	Critical	High	Low
1	0	1	0

Map Satellite

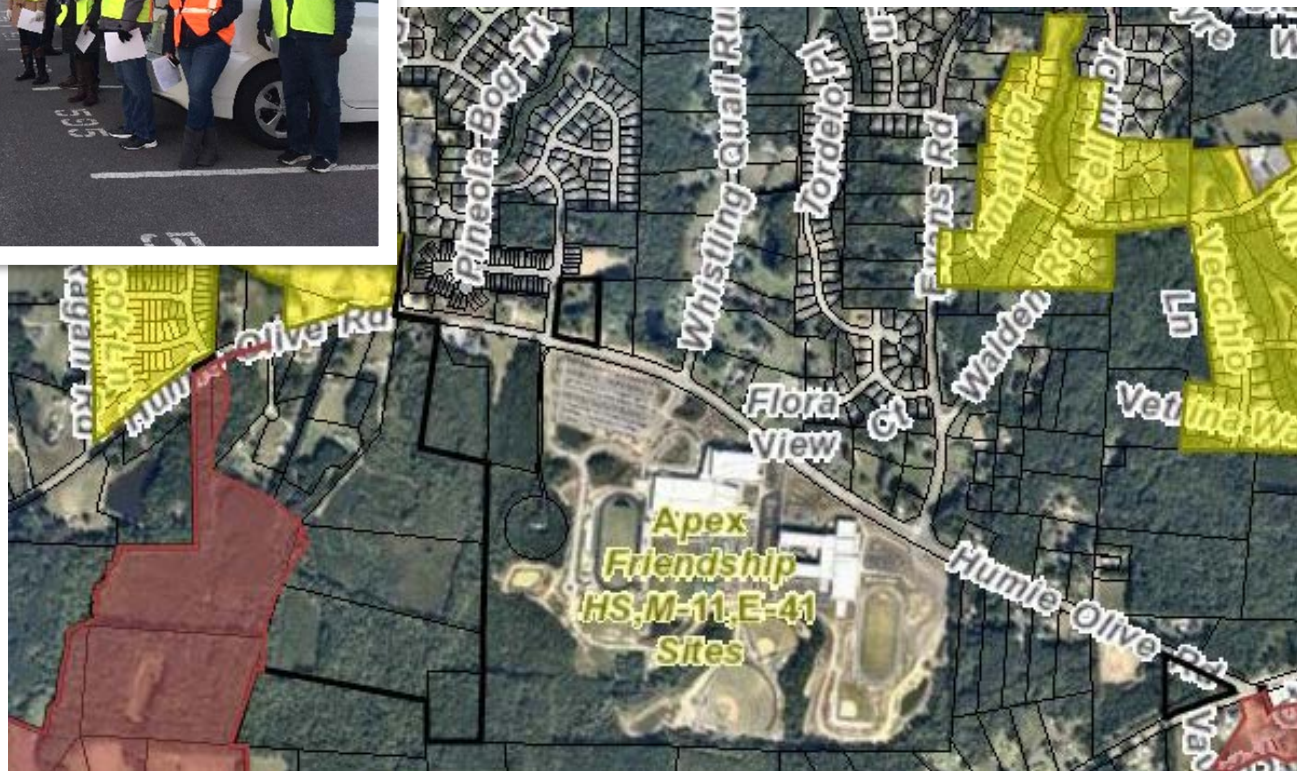
Google

Map data ©2018 Google Imagery ©2018, DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency, Terms of Use Report a map error



# Project Efforts Underway

# Apex Friendship High





# Walk audit materials

## Walkability Checklist

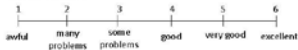
Location of walk:

### 1. Did you have room to walk?

- ☐ Yes ☐ Some problems:
- ☐ Sidewalks or paths started and stopped
  - ☐ Sidewalks were broken or cracked
  - ☐ Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.
  - ☐ No sidewalks, paths, or shoulders
  - ☐ Too much traffic
  - ☐ Something else

Locations of problems:

Rating Scale:

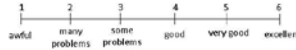


### 2. Did drivers behave well?

- ☐ Yes ☐ Some problems: Drivers...
- ☐ Backed out of driveways without looking
  - ☐ Did not yield to people crossing the street
  - ☐ Turned into people crossing the street
  - ☐ Drove too fast
  - ☐ Sped up to make a turn
  - ☐ Something else

Locations of problems:

Rating Scale:

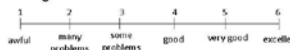


### 3. Was it easy to cross the street?

- ☐ Yes ☐ Some problems:
- ☐ Road was too wide
  - ☐ Needed striped crosswalks or traffic signals
  - ☐ Parked cars blocked our view of traffic
  - ☐ Trees or plants blocked our view of traffic
  - ☐ Drivers did not yield
  - ☐ Something else

Locations of problems:

Rating Scale:

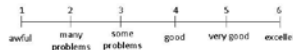


### 4. Was it easy to follow safety rules? Could you...

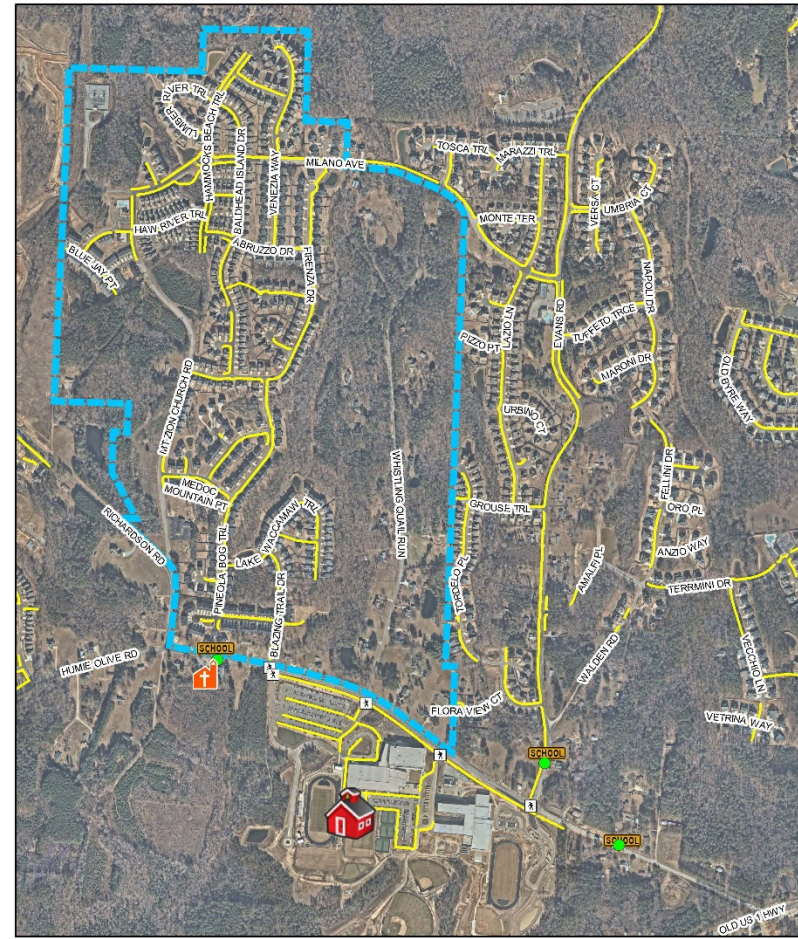
- ☐ Yes ☐ No Cross at crosswalks or where you could see and be seen by drivers?
- ☐ Yes ☐ No Stop and look left, right, and then left again before crossing streets?
- ☐ Yes ☐ No Walk on sidewalks or shoulders facing traffic where there were no sidewalks?
- ☐ Yes ☐ No Cross with the light?

Locations of problems:

Rating Scale:

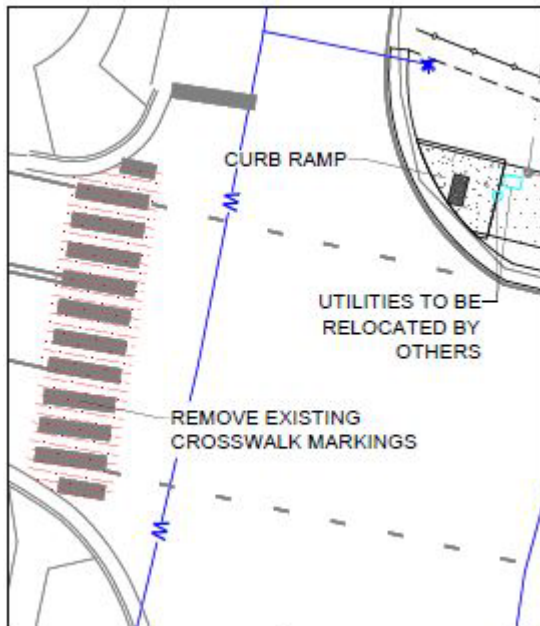


## Apex Friendship High School Walk Audit Map

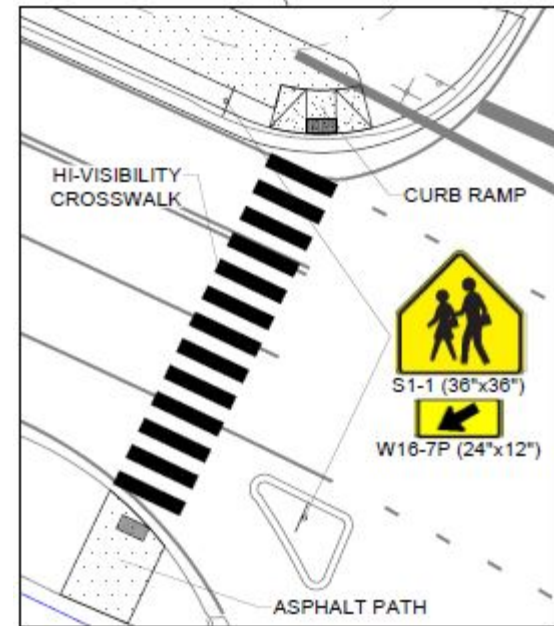


- Flashing Beacon
- X Crosswalk Adjacent to School
- X School Zone Marking
- Existing Sidewalk
- Walk Zone (No Transport)
- 🏠 Greater Christian Chapel Church

# Apex Friendship High improvements



Remove crosswalk  
from student driveway



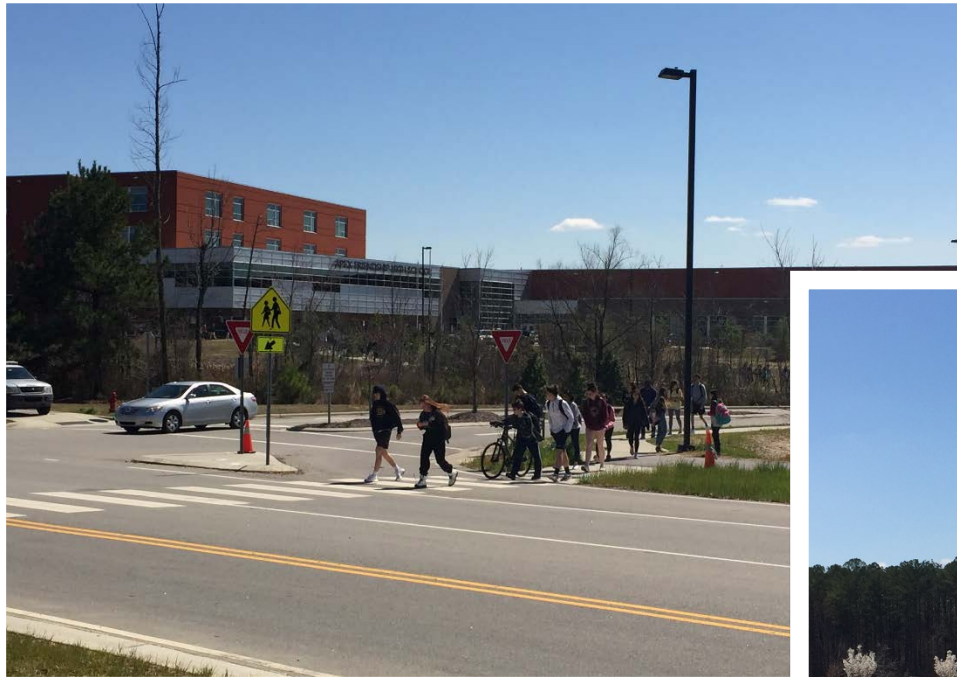
Add crosswalk where  
officer is stationed



# Apex Friendship High



# Apex Friendship High



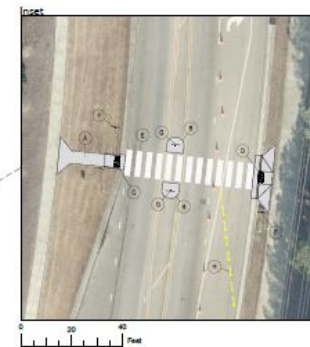
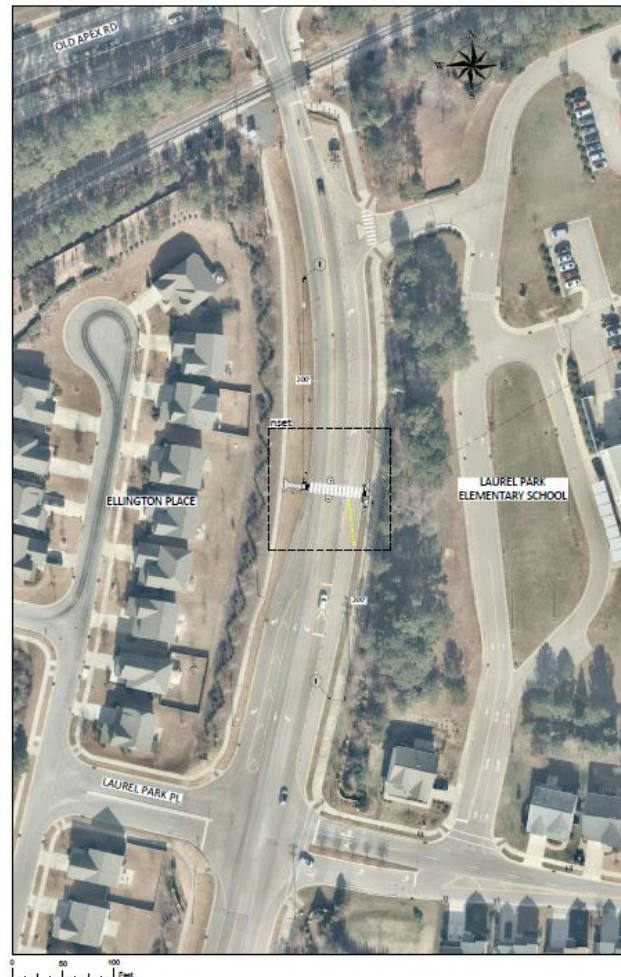
# Laurel Park Elementary

- Interim solution of mid-block crosswalk
- Preliminary design for restriping project
- LAPP project - \$554,000 estimated cost
- Coordination with stakeholders

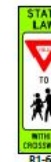




# Laurel Park interim solution



- LEGEND**
- A 5' CONCRETE SIDEWALK
  - B 5' MONOLITHIC CONCRETE ISLAND - SURFACE MOUNT
  - C CONCRETE CURB RAMP, DIRECTIONAL TYPE 1
  - D CONCRETE CURB RAMP, STANDARD
  - E 24" WHITE LINE, THERMOPLASTIC
  - F SIGN: S1-1 & W16-7pl
  - G SIGN: S1-1 & W16-9p
  - H MEDIAN UNITS TYPE PG300-G CURB SYSTEM\*
  - I SIGN: S1-1 & W16-9p



R1-6a



S1-1 & W16-7pl



S1-1 & W16-9p

\*NOTE: MEDIAN UNITS TYPE PG300-G CURB SYSTEM TO BE MAINTAINED BY THE TOWN OF APEX



# Laurel Park Elementary



# Lessons learned

- Coordination with...
  - School staff and parents
  - WCPSS
  - Neighboring jurisdictions
  - Across departments including police
- Key Data
  - Updated sidewalk layer
  - Crash data
  - Reports from Police, Public Works/Traffic
- Site visit
- Don't give up – change doesn't happen fast
- SRTS is not just for elementary schools

# Thank you!

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(919) 372-7509