



Item 7E

Harmony Science Academy (HSA)  
Pedestrian Options

August 14, 2018

# HSA Concern

- Getting students to and from the campus by walking and crossing the adjacent roadways
- HSA campus is bordered by three roadways (Bywood, Twin, Texas Ave)
- HSA Quick Facts (2017-2018 School Year)
  - Class Hours: 7:50 AM to 3:15 PM
  - 370 Students K – 8<sup>th</sup>
    - 285 students dropped off and picked up by motor vehicle
    - 50 students are bused
    - 35 students walk or cycle (4 students observed during speed zone study crossing Texas Avenue)
  - Approximately 50 faculty and staff members
- HSA Campus issued first Certificate of Occupancy in February 2010

# HSA Campus



# Safety Tips for Pedestrians

- Pedestrian and Bicycle Information Center at FHWA has developed safety tips for pedestrians
  - Cross streets at marked crosswalks or intersections
  - Obey traffic signals such as WALK/DON'T WALK signs
  - Look left, right, and left again before crossing a street
  - Watch for turning vehicles. Make sure the driver sees you and will stop for you.
  - Look across ALL lanes you must cross and visually clear each lane before proceeding.
  - Don't wear headphones or talk on a cell phone while crossing

# Best Route to School

- Safety experts at AAA have developed 10 rules to help parents and children determine the best route to school. Here are the first 6.
  - Walk on sidewalks
  - Walk on the left facing traffic if no sidewalks
  - Cross only at corners (Cross at intersections controlled by a traffic light when possible)
  - Stop and look all ways before crossing
  - Watch for turning cars
  - Continue to look left and right as you continue to cross

# School Speed Zones\*

- Usually considered for schools adjacent to highways
- Pedestrian activity should be the primary basis for reduced school zone
- Irregular traffic and pedestrian movements must also be considered when children are being dropped off and picked up from school

\* Texas Department of Transportation Procedures for Establishing Speed Zones

# HSA School Speed Zone Study

- Request received from Harmony Science Academy (HSA) to consider a school speed zone along S. Texas Ave. (Bus. 6)
- December 14, 2017 – Staff from City of Bryan and TxDOT met with HSA to discuss School's concerns
- Speed zone study conducted February - April 2018
  - Field Observation – February 1<sup>st</sup>
  - Traffic Counts – April 14-16<sup>th</sup>

# HSA School Speed Zone Study

- Observations

- Arrival

- Began about 7:25 AM; concluded at 7:50 AM
    - No significant vehicular issues
    - Children observed crossing S. Texas Ave. with parents but not necessarily in physical contact

- Dismissal

- Parents began arriving about 2:30 PM
    - Queuing along S. Texas Ave. began about 3:00 PM
      - Up to 10 vehicles for both directions of travel
      - No observable influence on traffic speeds
      - All queued vehicles departed by 3:30 PM
    - Children observed crossing S. Texas Ave. with parents but not necessarily in physical contact



# HSA School Speed Zone Study

- Observations
  - Children crossing S. Texas Ave.



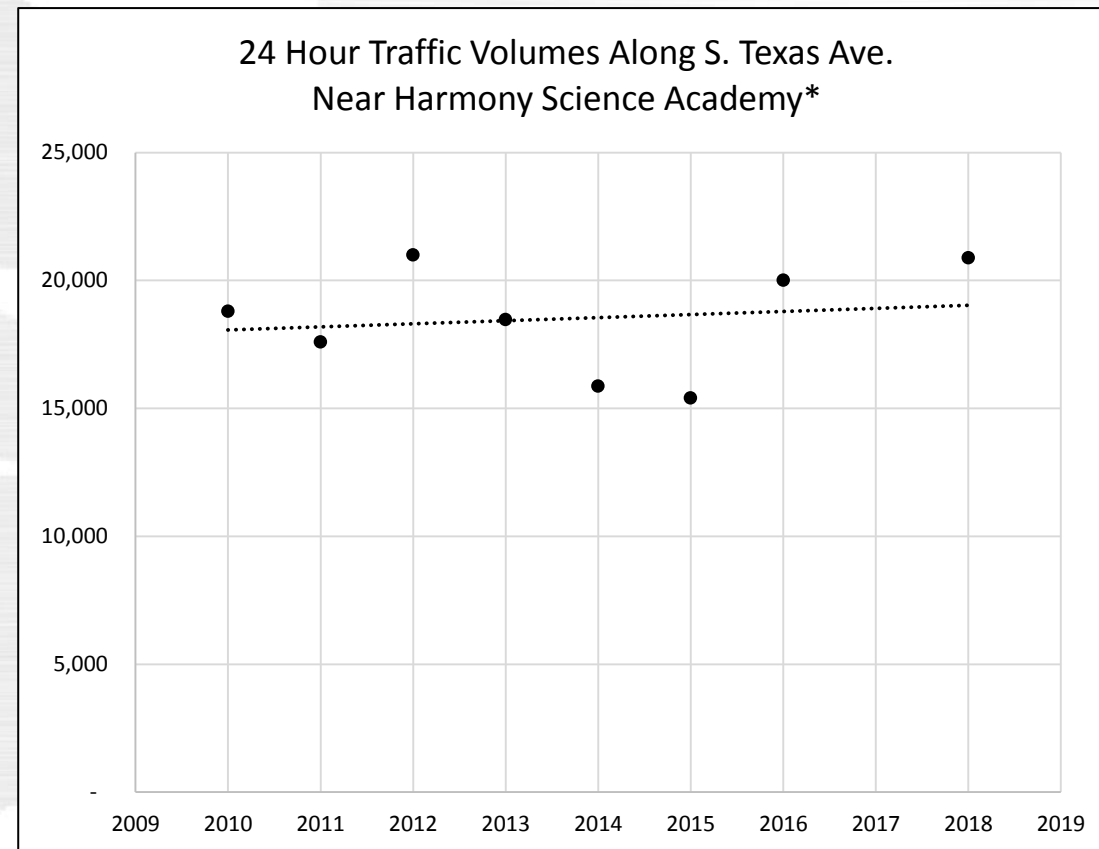
Prior to start of school



Following dismissal

# HSA School Speed Zone Study

- Performance Characteristics of S. Texas Ave.
  - Average Daily Traffic (ADT) since 2010
  - No appreciable increase in traffic
- Roadway Volume to Capacity Analysis
  - Applicable to hourly volumes only
  - Capacity – 1,900 vehicles per hour per lane
  - AM School Peak (7:00 to 9:00)
    - $v/c = (630 + 1,020) / (4 \times 1,900 \times 2) = 0.11$
  - PM School Peak (2:00 to 4:00)
    - $v/c = (1,673 + 1,049) / (4 \times 1,900 \times 2) = 0.18$



\* Source: TxDOT, City of Bryan

# HSA School Speed Zone Study

- Crash Data – May 2015 to May 2018 (Limits: Carson to Post Office)
  - 28 Total (4% of Texas Avenue total during same period)
  - 9 while HSA was in session; however, none directly related to school activity
- No record of a pedestrian accident
- Traffic Data – April 14-16, 2018

| Traffic Data Summary for S. Texas Ave. at HSA |                                     |    |                      |        |                |      |
|---|-------------------------------------|----|----------------------|--------|----------------|------|
| Time Period                                   | 85 <sup>th</sup> ile Speeds,<br>MPH |    | Volumes,<br>Vehicles |        | Percent Trucks |      |
|   | NB                                  | SB | NB                   | SB     | NB             | SB   |
| 24 Hours                                      | 44                                  | 43 | 10,246               | 10,634 | 6.0%           | 4.0% |
| 7:00 to 9:00 AM                               | 43                                  | 43 | 630                  | 1,020  | 7.3%           | 4.5% |
| 2:00 to 4:00 PM                               | 43                                  | 42 | 1,673                | 1,049  | 6.8%           | 4.1% |

Speed Limit = 40 MPH

# HSA School Speed Zone Study

- School Zone Operation:
  - If Implemented
    - 7:10 to 8:10 AM (Classes begin at 7:50 AM)
    - 2:45 to 3:45 PM (Classes end at 3:15 PM)
    - S. Texas Ave./Bus. 6
      - “Stepped” or Transition School Speed Zone – 30 MPH (Required by TxDOT)
      - Primary School Speed Zone – 20 MPH
    - Twin Blvd. adjacent to HSA property – 20 MPH
    - Bywood St. adjacent to HSA property – 20 MPH
- School Zone on Texas Avenue does not eliminate cars moving while students are crossing if crossing midblock
- Irregular traffic not an issue with cars getting into the school for drop off and impacts to traffic on Texas Avenue

# HSA School Speed Zone Study



# HSA School Speed Zone Study

## *Comparison to Other School Speed Zones along TxDOT Roadways*

| School                  | Grades                            | Roadway                    | Regular Speed Limit (MPH) | School Zone Speed Limit (MPH) | Total Length of Zone (Feet) | 24 Hour Volume (Vehicles)* | Theoretical Travel Time Through Limits of School Speed Zone (Seconds)** |        |       | Corresponding LOS for a Traffic Signal |
|-------------------------|-----------------------------------|----------------------------|---------------------------|-------------------------------|-----------------------------|----------------------------|---|--------|-------|--|
|                         |                                   |                            |                           |                               |                             |                            | Regular   | School | Delay |  |
| Harmony Science Academy | K – 8 <sup>th</sup>               | Bus 6. S. Texas Ave.       | 40                        | 30/20                         | 2,415 Ft.                   | 20,880                     | 46.7  | 76.0   | 29.3  | C                                      |
| Allen Academy           | Pre-K – 12 <sup>th</sup>          | FM 158 Boonville Rd.       | 55                        | 35                            | 1,470 Ft.                   | 19,599                     | 30.1  | 43.1   | 13.1  | B                                      |
|                         |                                   | FM 1179                    | 50                        | 35                            | 1,170 Ft.                   | 8,768                      | 25.0  | 33.3   | 8.3   | A                                      |
| Brazos Christian        | Pre-K – 12 <sup>th</sup>          | FM 1179 W. Villa Maria Rd. | 55                        | 35                            | 1,160 Ft.                   | 4,709                      | 26.2  | 37.0   | 10.8  | B                                      |
| Jane Long IS            | 5 <sup>th</sup> – 6 <sup>th</sup> | FM 2818                    | 55                        | 35                            | 1,440 Ft.                   | 26,099                     | 29.7  | 42.5   | 12.8  | B                                      |
| Mary Branch ES          | K – 4 <sup>th</sup>               | FM 1179 W. Villa Maria Rd. | 55                        | 35                            | 2,400 Ft.                   | 28,535                     | 41.6  | 61.1   | 19.5  | B                                      |
| Sam Rayburn IS          | 5 <sup>th</sup> – 6 <sup>th</sup> | SH 6 EFR                   | 55                        | 35                            | 1,720 Ft.                   | 10,621                     | 33.1  | 47.9   | 14.8  | B                                      |

\* Source: TxDOT, City of Bryan

\*\* Assumes compliance with posted speed limits. Includes deceleration entering the zone and acceleration leaving the zone.

# HSA School Zone

- School zones implemented on other TxDOT roads reduce speed to 35 mph
- Texas Avenue posted speed limit is 40 mph
- Some of these zones were implemented to reduce speeds and reduce the risk of rear end crashes
- BISD enforces a disciplinary policy that students are not allowed to cross highways

# Other Alternatives

- HSA buses students: utilize bus stop on Post Office to bus students to the campus (HSA currently has bus options)
- HSA mandates no students cross Texas Avenue mid-block or any location. If so, disciplinary action can follow
- Utilize crosswalk at Texas and Twin/Post Office (traffic stops while pedestrians cross)
  - HSA has staff person or crossing guard at this intersection to “police” crossing
  - Estimated cost of crossing guard is \$3,780
  - Takes approximately 4-6 minutes to walk from Lake St down to Twin/Post Office and back to the HSA campus



# Other Alternatives (Cont)

- Utilize an Off Duty Peace Officer to prohibit children from crossing Texas Avenue
  - Cost at \$200 a day for 189 school days is \$37,800
  - Deploying a peace officer in the roadway places the officer at risk of being struck and injured
  - Continual risk while being in traffic waiting on a student
- Jaywalking Ordinance
  - State law allows crossing of roadways; therefore, local ordinance necessary
  - Applicable citywide; requires enforcement
  - Not likely to prevent pedestrians from crossing where they want
- HSA relocate the campus off of Texas Avenue

# Other Alternatives (Cont)

- Install midblock pedestrian signal
  - Pedestrian Hybrid Beacon (PHB) – \$150,000
    - Activates by pedestrian push button; can be coordinated with traffic signal system
    - Excellent yielding behavior by motorists (> 90%)
    - Requires approval from TxDOT's Traffic Division in Austin
      - Must meet **all** warrants listed in TMUTCD to be considered
      - This location does not meet all warrants
      - Would not be approved by TxDOT
  - Traffic Signal – \$250,000
    - Requires traffic signal warrant study
  - No funding source identified



# Recommendation

- Implement a school zone on Bywood and Twin
- HSA adopts additional bus stop on Post Office to eliminate risk of any student crossing Texas Avenue (if concern students wouldn't cross at intersection safely)
- HSA mandates students not cross the highway consistent with BISD policy for its schools on highways
- HSA monitors for compliance and adopts similar disciplinary action as BISD has done for its schools on highways
- Improve the intersection of Texas Avenue and Twin/Post Office to allow for pedestrians to cross safely

# Questions

