LET'S WALK – USING GIS & TRAFFIC ENGINEERING TO HELP FORT WORTH'S SAFE ROUTE TO SCHOOL

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OUTLINE

- Background
- Data Collection, Validation, and Assessment
- Grants and Funding
- Deliverables
- Construction Design/Future
- Questions
COLLABORATION
- City of Fort Worth TPW
- Blue Zones School Team
- Parents/ Teachers/ PTA
- Fort Worth ISD
- Neighborhood Associations
- Dunaway

TASKS
1. Evaluate current infrastructure
2. Evaluate current school operations
3. Prepare preliminary walk routes & cost estimate
4. Work with partners to refine routes
5. Prepare and submit SRTS application for funding
Blue Zones Project

A community-wide well-being improvement initiative designed to make healthy choices easier by encouraging sustainable changes in our built environment and social networks.

https://www.bluezonesproject.com/
http://info.bluezonesproject.com/live-long-fort-worth
WALKING TO SCHOOL

1969

- Nearly 50% of all children walked to School.
- Nearly 90% of those within a mile of the school.

Today

- Less than 15%.
2005 - Congress approves funding for implementation of Safe Routes to School programs across the US.

Safe Routes to School aims to create safe, convenient, and fun opportunities for children to bicycle and walk to and from schools.
The Goal SRTS is to:

- Reverse the decline in children walking and bicycling to schools,
- Increase kid's safety, and
- Reverse the alarming nationwide trend toward childhood obesity and inactivity.
Historically:
- Reactive approach to repairs and improvements.
- Most work on major arterial roads, not neighborhoods.

Wanted more methodical planning approach based on needs and existing conditions.
Goals:

- Quantify improvements
  - Typical elementary, middle, and high schools
- Accurate assessment of funds needed for improvements.
- 2017 federal SRTS grant application
- 2018 bond package
- Create quicker turnaround on projects: engineering plans complete before construction designs begin.
FW wants to be healthy through Blue Zone Initiative

...improve community walking, health, safety

...encourage kids to walk to schools

...determine costs needed

...funding through competitive SRTS grant

...improve (non)existing infrastructure

...determine proposed walking routes

...assess existing infrastructure and conditions

...assess 26 schools across Fort Worth
Use GIS to Determine:
- 116 schools serve Fort Worth Students...
  ...many from outside the city!
- 26 schools identified based on geographic coverage of council districts and school needs

City Boundaries ≠ School Boundaries
- 20 ISDs overlap City of Fort Worth
- 623 Schools inside those ISD's
- All maintain their own boundaries...
  ... in different formats!
- Elementary Schools: 1/4 mile buffer
- Middle, High Schools: 1/2 mile buffer*
  *To attendance zone edge
- Blue Zone Schools: Entire attendance zones
DATA COLLECTION

KISS Method

- Office-based collection, then field validation
- Nearmap imagery
- Google Street View
- Minimal attributes, butDomains were vital

TIP: Spend time early getting Domains right
FIELD VALIDATION – THE GOOD
FIELD VALIDATION – THE BAD
FIELD VALIDATION – THE OBSTACLE COURSES
Mobile Digital Apps...a no-brainer, right?
QA/QC: ArcGIS Online

- Multi-department access: Traffic, Civil Engineering, GIS
- Great for non-GIS people to verify data and make engineering-based decisions.
- GIS data kept in sync
- Batch edits: ArcMap > ArcGIS Online (Office) > ArcGIS Online (Mobile)
Where are the kids already walking?
ASSESSMENT (BLUE ZONES)

SCHOOL PICK-UP OBSERVATIONS

- Traffic Congestion around Macie Ave. & NW 26th St.
- Potential One-Way during school times.
- Pickup is occurring very close to intersection/major crossing.
- Under utilized pickup areas.
- Observed walking routes
Proposed Routes and Cost Estimates

- ArcGIS Online data creation
- Traffic Engineers marked up proposed routes
- Based on existing infrastructure and conditions
- Created major and minor routes for review
Cost Estimates

- "Buffers" along routes to calculate schools' repairs/construction cost estimates

- Known Replacement Cost Example:
  - Good: 5%
  - Fair: 30%
  - Poor: 100%
  - Missing: 100% (but without removal cost)
"Pretty" Final Exhibits

- Proposed Improvements
- Travel Map
- Crash Map
- Location Map
- Crossing Map
- All 131 of them!
SAFE ROUTES TO SCHOOL APPLICATIONS

- 7 SRTS grant Applications
  - City Fort Worth, Blue Zones, and Fort Worth ISD
  - 80/20 Federal/Local Partnership
  - $5M Requested (max): $4M SRTS Grant, $1M Fort Worth
  - Fort Worth received 7 of 33 grants awarded (21%)
  - NCTCOG’s area (230 governments across 16 counties)
Nov 2018: Fort Worth bond election passed

$5M in Construction Funds to address portion of remaining 19 schools.

Future evaluations – Potentially every 2 years

Construction Plans Under Development

Dunaway – 3 “Northern” SRTS schools

Kimley-Horn – 4 “Southern” SRTS schools

Parcel, ROW, and planning analysis in GIS

All design, repairs, improvements complete mid-2020
QUESTIONS?