A NOVICE USES ARCGIS TO IMPROVE SCHOOL SITE DESIGN OUTCOMES

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WHAT IS THIS SESSION ABOUT?

- **Partly about the Stratford Middle School site design process**
- **Partly about my personal experience with:**
  - *Getting access to ArcGIS*
  - *Finding the right data and getting it loaded*
  - *Manipulating data and performing analysis*
- **Other insights, pitfalls, and discussion**
WHAT IS THIS SESSION NOT ABOUT?

• **NOT A HOW-TO, STEP-BY-STEP OF HOW I LEARNED TO USE GIS TOOLS**
  • **NOT ENOUGH TIME FOR THAT IN A PRESENTATION**
  • **NOT SURE THAT WOULD BE TERRIBLY INTERESTING TO FOLKS ANYWAY**
  • **THAT SAID, I’M HAPPY TO SHARE MY EXPERIENCE WITH YOU AFTERWARDS**
BACKGROUND

- A BIT ABOUT ME AND HOW I GOT STARTED WITH GIS
- A BIT ABOUT STRATFORD SITE AND WHY IT'S A CHALLENGE
• Growth
• Historic Designation
• 40’ Slope across property
• Accessibility
• RPA
• Trees
• Traffic Patterns
• Community fields and amenities
• Impacts on neighborhood
All drop-off and pick-up from Vacation Lane
Parent drop-off at north entrance
New bus drop-off with stacking and queuing
No change to park or west parking area
Maximum field area
140 parking spaces
Cost: $
New loop road from Vacation lane to 23rd St
Buses enter at Vacation Lane
New bus drop-off south of Phase 1 addition
Parent drop-off at north entrance
No change to park Field shifts south
150 parking spaces
Cost: $$
New connection from Old Dominion to 23rd St
All buses enter site from Old Dominion
Parent drop-off at north entrance
Park fields remain
143 parking spaces
Cost: $$
New connection from Old Dominion to 23rd St
All buses enter site from Old Dominion
Parent drop-off at north entrance
Park fields remain 143 parking spaces
Cost: $$
Connection from Old Dominion to Vacation Lane
All buses enter site from Old Dominion
New bus drop-off south of Phase 1 addition
Parent drop-off at north entrance
No change to park or west parking
Field shifts south 160 parking spaces
Cost: $$
All buses enter site from Old Dominion
Buses queue and stack
Parent drop-off at north entrance
Park access from 23rd St
Redesign of park fields
Basketball to Stratford field
88 parking spaces
Cost: $$$
TO THE INTERNET!
AN INDIRECT PATH TO FINDING THE RIGHT DATA

- County Desktop Tool (HTTP://MAPS.ARLINGTONVA.US/)
- County PDFs (HTTP://WWW.APSVA.US/PAGE/3001)
- County Enrollment Data
- ArcGIS Online data
- Census TIGER Block Group Shapefile (HTTP://WWW.CENSUS.GOV/GEO/MAPS-DATA/ ... No demographics... considered finding that data and append it by matching on Census Block Group FIPS but knew there had to be a better path)
- Census ACS Summary Tables (HTTP://WWW.CENSUS.GOV/PROGRAMS-SURVEYS/ACS/)
- Census TIGER/ACS MASHUP SHAPEFILES (HTTP://WWW.CENSUS.GOV/GEO/MAPS-DATA/DATA/TIGER-DATA.HTML... YAY, THANKS GOOGLE!)
- Census TIGER Block Shapefile (Rabbit hole of using TIGER lines to try and assign each block to a school boundary zone... 90-95% successful, but time consuming and that's not what the county uses)
- County-supplied Planning Unit Shapefile (Holy Grail)
THINGS I HAD TO LEARN

• How to make a new shapefile to add point data for school sites
• How to select by attribute (to narrow census files down to Arlington)
• How to set extent of map (for easy resetting)
• How to create a network dataset and calculate/symbolize walk radius
• How to do a join
• How to add fields (of proper type)
• How to update values for groups of selected features
• How to calculate summary statistics using case (for redistricting balance)
• I’m sure I forgot a few others
Projecting main drop-off entrance; vocabulary of the historic main entrance

Courtyard enhances the existing symmetry

Low massing preserves view of existing gym and classroom facades

Field is shifted but the size is maintained
Along with parking on alternate side of the street, will transform Vacation Lane from yield street to two-way. Can be used by cars in morning, buses in afternoon.
NEXT STEPS

• **Schematic design for Stratford**
• **Vacation Lane Improvements**
• **What's up with Census data?**
• **Build a webapp for redistricting Arlington's MS boundaries**
  • ArcGIS Online
  • WebAppBuilder
  • Leaflet.js
• **Home evaluation (Supplement to Redfin)**