Walking School Bus

Smartphone application

Showcase

Milton
ESTABLISHED 2006
Today’s Agenda

• Introduction of panelists and project team
• Georgia Smart Communities Challenge Program
• Introduction of the study area

• Research overview
• Project details
• Unveiling the app

• Features and demo
• Next steps
• Q & A

Type in your questions. We have reserved time for answering questions at the end.
Introduction of Panelists

Michele McIntosh-Ross
Senior Planner at City of Milton

Dr. Angshuman Guin
Ga-Tech, Transportation Engineering

Shubhangi Jangam
Senior Planner at City of Milton

Dr. Kari Watkins
Ga-Tech, Transportation Engineering

+ Project Team

Parag Agrawal
Director of Community Development at City of Milton

Reid Passmore
Ga-Tech PhD student

Duo-Wei Yang
Ga-Tech student intern

Elizabeth Sandlin
Atlanta Regional Commission

AppZoro
Software Developer
Milton’s Project Partners

City of Milton
- Parag Agrawal
- Michele McIntosh-Ross
- Shubhangi Jangam

GA-Tech
- Dr. Kari Watkins
- Dr. Angshuman Guin
- Reid Passmore

Fulton County schools
- Kibbey Crumbley (NW Superintendent)
- Tresa Cheatham
- Joel Peterson
- Brian Jones

Project Supporters
Atlanta Regional Commission
Fulton County NW Area Superintendent
School Principals and Staff
PTO members
Community Volunteers
Crabapple Residents

AppZoro (IT)
Traffic Data Services
Milton’s Proposal

To use technology to assist the coordination of groups of kids led by parent volunteers to walk to school.

This is also known as a **walking school bus** where groups of 4 to 6 kids walk to school with a lead adult walker as the chaperone/driver of the group.

Study and develop an interactive app for smartphones that will provide real-time group communication for parents of kids who want to walk to school in groups.
Welcome to Milton GA

Milton’s Highlights

- 39 square miles
- Approximately 39,000 residents
- Family oriented, highly educated and young
- 20% of population is 14 years or younger
Introduction to Study Area
Downtown Crabapple
Walk to School
Research
Motivation

Nationally, only 9.6% of kids aged 5-18 walk to school in 2017.

• Down from almost 50% of kids K-8 in 1969

Yet walking to schools offers multiple benefits:

• Less greenhouse gas emissions and congestion
• Increases physical fitness
• Better academic performance
Motivation

Literature says many reasons why children might not walk to school:

- Too far away
- Driving is convenient for the parent
- Not a lot of other children walking
- No available sidewalks or crossings
- Aggressive drivers
- Stranger danger, lack of supervision
Motivation

• Walking School Buses (WSBs) as a solution:
  • Volunteer parent leads group of children to school on foot

• WSB Results
  • Create a habit of walking in later grades
  • Bolsters communities and stimulates social interaction

• WSBs can have long-term sustainability issues
  • A couple parents doing most the logistics and leading
  • The designated routes not being safe
  • No incentive programs
  • Students ‘graduate’ from WSB and walk to school on their own, but are not replaced
Research Methodology

• **Goals**
  • Create draft routes and a walking network for WSB group creation and planning.
  • Find key influencing factors that can help determine the likelihood for a parent participating in a WSB.
  • To ensure the WSB app is responsive to the specific needs of Milton.

• **Internet Survey**
  • Distributed through school newsletter.
  • 134 parent responses representing 168 elementary and middle school students (7.9% response rate).

• **Video Counts**
Mapping Respondents and Routes

- Identify a walking network for Milton for routing WSBs
  - Sidewalk Presence
  - Crossing (e.g. crosswalks, PHBs, walk signals)
  - Speed Limit
- 66% of elementary students and 30% of middle school students within 1.5 miles of school
- Geocoded respondents to draft initial routes
Mapping Respondents and Routes

- Respondents were concentrated towards denser southwestern section that is well serviced by sidewalks.
- Indicates that creating routes based on neighborhoods is best approach.
- Walking network can be used to plan routes as needed.
Benefits of walking to school well known no matter the current behavior.
Barriers brought up by respondents directly addressable by a WSB.
Walk Alone Age

- Major spike in 6th grade, then 9th grade.
- Around 10% did not think children could ever walk to school.
- Demonstrates why elementary should be the focus for the app.
Conclusions

• A walking network and routes were generated for use in app planning and advertising.
• Walk to School day participants are the best pool of volunteers for the WSB App.
• Milton’s Walk to School day program puts it in a unique position to make a regular WSB program work compared to other schools.
• Recognition of benefits / barriers not significant, meaning convenience of current behaviors is a driving factor.
• When app is released, follow-up survey and counts will be done.
Project Details of Milton’s Smart and Safe Routes to School Project

Project Timeline

- **September-December**
  - Kick off
  - Research
  - Listing Business requirements
  - Public meeting

- **January - April**
  - Site visit
  - Digital survey
  - RFP
  - Video data collection

- **May - July**
  - App Design with Software Developer

- **August**
  - App Coding

Public engagement
- December 5, 2019
- July 13, 2020

On-site visit to walking school day
- January 17, 2020

Meeting with Fulton County School district leader
- November 2019

Meeting with legal advisors
Public Engagement and Collaborations

• 2 public meetings with community in December and June
• Site visit at Walk to School day
• Digital Survey: 178 responses
• Weekly project team meetings
• Monthly project progress reports
• Mid-year review
• 2 Internship opportunities provided
Monthly Walk to School Day at Crabapple Crossing Elementary School
Why Walking School Bus App?

Challenges with Organizing WSBs

• Finding other parents willing to participate and volunteer
• Need flexibility in scheduling / cannot commit to walking daily
• Trust but verify: ability to check the real-time location of the child while on the road provides peace of mind
Design and Development of App

Stages of Development

- Business requirements
- Designing app wireframe
- App database design
- Functional design and flow in the app
- Designing maps and routes and grouping structure
- Selecting a color scheme and other style elements
- User interface improvements
- Testing of the app
- Developing terms and privacy policy
- Administration policy and structure
WSB App: Framework Development

• Identification of challenges for WSBs that can be addressed with technology
• Functional requirements for App
• Data security, privacy needs and challenges
• App Performance
  • Scalability
  • Maintenance
WSB App: Core Functionalities

- Dynamic walk group formation with predefined routes - reduced administration effort
- Flexible scheduling – no long term commitment
- Tracking of WSB
  - Check-in of individual students
  - Track supervisor/students while WSB is on the road
  - Notification when WSB reaches school (Check-out)
- Security
  - Invitation only sign-up with email validation (OTP)
WSB App: Core Functionalities

- **Communication** – Convenient call and message links to parents’ phone number

- **Admin Panel**
  - Update of routes and email lists by community volunteers
  - Ability to generate performance metrics

- **Cloud based hosting** – eliminate dependence on cross-organization hardware, software and IT personnel capabilities

- **Dual environment development** – iOS™ and Android™ apps mirror functionality, look, and feel
Waddle
Walking School Bus App

Main Features
- Grouping
- Scheduling
- Supervising
- Tracking
- Messaging
- Notification

Proposed Release Date
October 1, 2020
Waddle

Security Measures
• Only parents with valid email can register in the app
• All passwords are encrypted
• Anonymity to database

Privacy Measures
• Only volunteering supervisors are being tracked when walking the kids to school
• Tracking is only available to participating kids’ parents
Registration

Getting started
• Sign up
• Email validation
• One-time password
• Registration complete
• Sign in
• Complete profile
• Add student information
Home Screen

Quick access to

- Profile
- Shortcuts
- Upcoming walk-trip reminder
- Access to trip tracking
- Indicates new message and notification
- Counts accomplishments

For first time users, the app will provide guidance.
Groups

Finding the right group to walk with

- Groups are listed for each subdivision
- Parent can locate the nearest stop on the map

In the Database

- Pre-defined routes per subdivision
- Pre-defined stops on those routes that parent can select for pickup
- Groups formed with a subset of stops within a route based on proximity of students

1 supervisor : 5-6 kids
To schedule a walk trip

• On home screen click on schedule shortcut
• Select a date
• Preview schedule for your kids and you as supervisor
• To create a new trip press +
• Complete selections
• Review list of all trips in menu
Next Steps

• We need engagement support and resources

• We ask that you join us

• Pilot this in other communities

• Contact us: walkingschoolbus@cityofmiltonga.us