Agenda

- Purpose/Goals
- Tasks that Were Accomplished
- Overview of the Survey
- Number of Useable Surveys Obtained
- Data Expansion Process
- What We Learned
- Summary
- Questions
**Purpose:** to gather data from a statistically valid sample of transit riders in Winston-Salem. The results will be used to:

- update the area’s travel demand model to enhance regional transportation planning efforts
- provide a dataset that can be used for system optimization

**Goals:**

- to obtain useable intercept surveys from at least 8.5% of the area’s weekday transit users
- to obtain useable intercept Surveys from at least 5% of the area’s Saturday transit users
Tasks that Were Accomplished

- Survey Training and Start-Up (July 2013)
- Main Survey Administration (July 15-27, 2013)
- Data Review and Expansion (July 27-30, 2013)
- Survey Documentation & Report (August 2013)
- Final Presentation (September 2013)
Overview of the Intercept Survey
Survey Process

- The survey was a personal interview, which incorporated all of the latest methods currently recommended by the FTA.
- Surveys were administered on tablet PCs that interfaced with Google Maps in real-time.
- Participants were randomly selected by the computer based on the number of people who boarded at each stop.
- Those who did not have time to complete the survey during their trip provided their phone number, which allowed an interviewer from ETC Institute to call them later to capture short trips.
- The survey was administered in English and Spanish.
- 91% of the passengers agreed to participate in the survey.
- Useable surveys were obtained from 92% of those who agreed to participate.
Sample Screen Capture

Where will you GET OFF this bus (1 Inbound Oakridge to Downtown [day]) for the current one-way trip?

- **Street Address**: Church-Christ At Carver School
- **Latitude**: 36.150453
- **Longitude**: -80.210849
- **Stop ID**: -

Search: Carver School Rd Church of Christ

Address: Church-Christ At Carver School, 4399 Carver School Road, Winston-Salem, NC 27105, USA

Current trip from **Your HOME** (origin) to **Your usual WORKPLACE** (destination)
Number of Useable Surveys Obtained
Weekday Survey
- Goal (8.5%) or approximately 1,100 surveys
- Actual (10%) of 1,280 surveys
- Sampling goals were met within 10% on all routes

Saturday Survey
- Goal (5%) or approximately 348 surveys
- Actual (6%) of 405 surveys
- Sampling goals were met within 10% on all routes

**Overall distribution of the sample was excellent!**
Data Expansion
The process for calculating unlinked trip weighting factors for bus routes simply involved dividing the number of boardings in each direction by time of day on each route by the number of surveys that were completed.

For most routes, expansion factors were developed by direction for the following time periods:

- AM Peak (6am-9am)
- Midday (9am-3pm)
- PM Peak (3-6pm)
- Evening (after 6pm)
The linked data expansion factors were applied to adjust the data from total boarding to the actual number of trips completed from a single origin to a destination.

Formula = $\frac{1}{1+\text{number of transfers}}$
What Did We Learn?
Characteristics of Riders
Estimated Age Distribution of Transit Users

Based on the EXPANDED Survey Results

Source: ETC Institute (2013 WSTA On-Board Transit Survey)
Estimated Gender of Transit Users
Based on the EXPANDED Survey Results

Male 49%
Female 51%

Source: ETC Institute (2013 WSTA On-Board Transit Survey)
How Much Do Riders Earn?

96% of Riders Provided Income Information

Estimated Distribution of Annual Household Income Among Transit Users
Based on the EXPANDED Survey Results

More than one-third (35%) of the riders have annual household incomes below $10,000 per year
More than four out of five riders are in the labor market.
1 in 6 riders was a student even though the survey was conducted while school was not in session.
Fewer than one in four (24%) of those surveyed had a car in their household.
WHY ARE PEOPLE USING THE BUS?
More than one-third (34%) involved home-based work trips.
WHERE ARE RIDERS COMING FROM?
What type of place are you COMING FROM now?

Based on the EXPANDED Survey Results

- Home: 49%
- Workplace: 18%
- Shopping: 9%
- Social visit (friend's house): 7%
- Personal business (i.e. bank): 5%
- Other: 14%

Source: ETC Institute (2013 WSTA On-Board Transit Survey)
Darker Green indicates a higher number of trips begin in TAZ
HOW DO RIDERS GET TO THEIR DESTINATION?
Mode of Access to Transit

How Transit Riders Got to the First Bus Used
Based on the EXPANDED Survey Results

Most Walk

Source: ETC Institute (2013 WSTA On-Board Transit Survey)
Paths Transit Users Are Taking

All Trips

Thickness of Red Line Shows the Relative Volume of Riders Along the Path
Paths Transit Users Are Taking

AM Trips (6-9am)

Thickness of Red Line Shows the Relative Volume of Riders Along the Path
Paths Transit Users Are Taking

Mid-day Trips (9am-3pm)

Thickness of Red Line Shows the Relative Volume of Riders Along the Path
Paths Transit Users Are Taking

PM Trips (3-6pm)

Thickness of Red Line Shows the Relative Volume of Riders Along the Path
Paths Transit Users Are Taking

Night Trips (after 6pm)

Thickness of Red Line Shows the Relative Volume of Riders Along the Path
More than one-third (34%) transferred before boarding the bus on which they were surveyed.
Percentage of Trips that Involved a Transfer

Based on the EXPANDED Survey Results

- No transfer: 37%
- Yes, 1 transfer: 58%
- Yes, 2+ transfers: 5%

Source: ETC Institute (2013 WSTA On-Board Transit Survey)

Weekday Results
WHERE ARE RIDERS GOING?
What is the Zip Code of the place you are going to?

Based on the EXPANDED Survey Results

- 27105: 26%
- 27101: 25%
- 27103: 19%
- 27107: 9%
- 27106: 9%
- Other: 12%

Source: ETC Institute (2013 WSTA On-Board Transit Survey)
Darker Green indicates a higher number of trips end in this TAZ
The region’s transit system is very important to the mobility of the region’s workforce

- More than 80% of those surveyed were in the workforce
- More than one-third of the trips were between a person’s home and their place of work

This survey contains data that will support a wide-range of short and long-range planning initiatives for many years

The methodology for this survey has set a new standard for the way on-board surveys are conducted by mid-sized transit systems

- You successfully implemented a methodology that until recently had only been tried by large systems
Questions ???

THANK YOU