Central Ohio Transit Authority

Bus Stop
Service Improvement Project

Capital Projects and Planning Department

May 14 & 24, Public Presentation Summary
2010

Project Goals

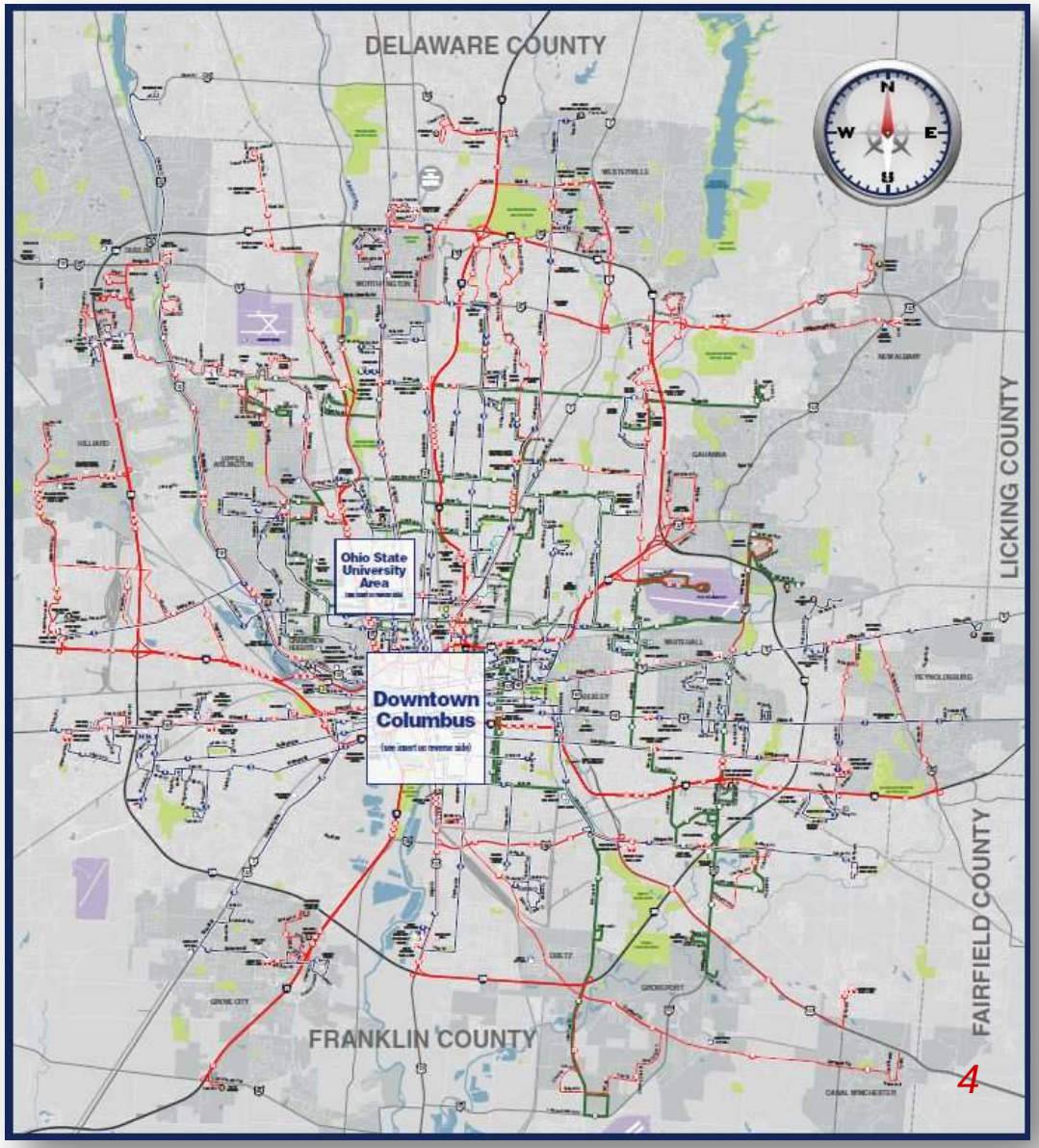
- Decrease passenger travel time
  - Make Trips Shorter
- Increase the average travel speed for routes
  - Decrease the Time Between Trips
- Potentially free up buses
  - Redistribute buses for additional service
- Increase ridership

Project Timeline (Proposed)

- Stakeholder Group Meeting I - April 1, 2010
- COTA Mobility Board Presentation – April 14, 2010
- Accessible Transportation Advisory Committee – April 26, 2010
- MORPC Citizen Advisory Committee Presentation - May 3, 2010
- COTA Board Presentation – May 12, 2010
- Public Meetings - May 14 & 24, 2010
- Linden Advisory Council – May 25, 2010
- Stakeholder Meeting II - June 15, 2010
- COTA Board Presentation - June 23, 2010
  - Present final recommendations
- Phased Implementation (minimum timeline)
  - September, 2010 (target express routes)
  - January, 2011
  - May, 2011
  - September, 2011

COTA System Overview

- Route Statistics
  - **19 Local Routes**
    - 87.1% of total ridership
    - #1, #2, #10 approx. 50%
  - **40 Express Routes**
    - 4.3% of total ridership
  - **8 Crosstown Routes**
    - 8.5% of total ridership
  - **1 Link Routes**
    - 0.1% of total ridership



COTA System Map
As of January, 2010

COTA System Facts

- Bus Stop Statistics
  - 4,270 Total Bus Stops
  - 1,310 Transfer Locations
  - 377 Shelters
  - 302 Trash Receptacles

Example bus stop with shelter, trash receptacle, bicycle parking and ADA accessible ramp

Project Background

- When did analysis begin?
  - March 2009
  - COTA staff began to investigate our system wide transit service and evaluated three types of routes: Local, Crosstown, and Express for stop distances and usage
  - Researched other transit agencies and development guidelines for industry best practices

- How will analysis progress?
  - Work closely with stakeholders, general public, community leaders, and specific groups (ADA, Seniors, Municipalities, etc.) to share goals and obtain feedback

Benefits of Reducing Bus Stop Density

- Increases ridership with faster service by:
  - Reducing dwell time overall
  - Decreasing trip times
  - Decreasing number of bus deceleration and accelerations
- Permits COTA assets to be reallocated such as:
  - Passenger shelters/trash receptacles
  - Directories/future electronic real time displays
- Fewer stops result in easier to understand route maps and timetables
- Lowers operating and capital costs:
  - Maintenance of bus stops and shelters
  - Reduces braking on buses
  - Increases fuel efficiency
  - Potentially reduces the number of buses on major routes or allows for more frequent service without adding additional buses

COTA Existing 1999 Design Guidelines

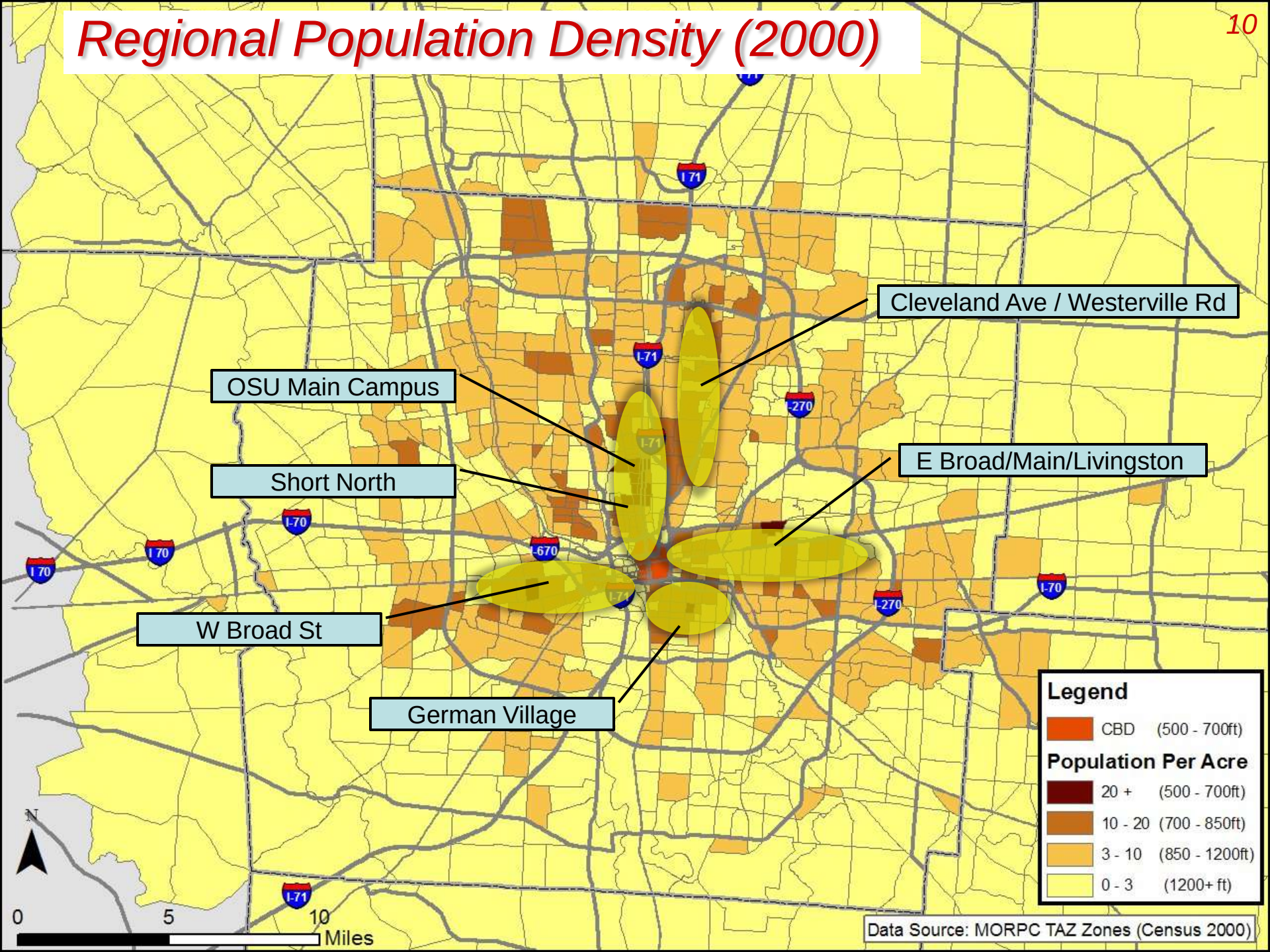
TABLE V-1
BUS STOP SPACING GUIDELINES (7)

POPULATION/ EMPLOYMENT DENSITY	SPACING DIMENSIONS
High >4000 people/square mile *Overall average density: >5 persons per acre)* *(Units per acre: 4 or more units)*	660 feet
Medium 2000-4000 people/square mile *(Overall average density: 3-5 persons per acre)* *(Units per acre: 3 units)*	1,320 feet
Low *<2000 people/square mile* *(Overall average density: <3 persons per acre)* *(Units per acre: 1-2 units)*	*Stops based on demand as needed*

COTA Proposed Spacing Guidelines

- COTA Bus Stop Placement Guidelines will include the following considerations:
  - Block lengths and physical elements
  - Current population/Employment density (2010 census data when available)
  - Bus dwell time
  - Onboard passenger travel time
  - Transfer opportunities
  - Transit Oriented Development (TOD)
  - Future developments (1-3 years)
  - Accessibility (sidewalks, waiting areas, roadway speeds, etc.)
  - Special consideration (Persons with disabilities or high volume of seniors using stop)

Regional Population Density (2000)



COTA Proposed New Standard Spacing

Density	COTA Proposed Ranges	Similar Transit System CATS (Charlotte, NC) Spacing Ranges (7)
High density, CBD, Shopping (> 20 persons/acre)	500 - 700 ft	500 - 750 ft
Fully developed residential area (10 - 20 persons/acre)	700 – 850 ft	750 - 900 ft
Low density residential (3 - 10 persons/acre)	850 – 1200 ft	900 - 1300 ft
Rural (or Express Bus Service) (0 – 3 persons/acre)	1200 ft +	1500 – 2500 ft

*Average block length inside downtown Columbus: 333 ft
*Average block length outside downtown Columbus: 553 ft

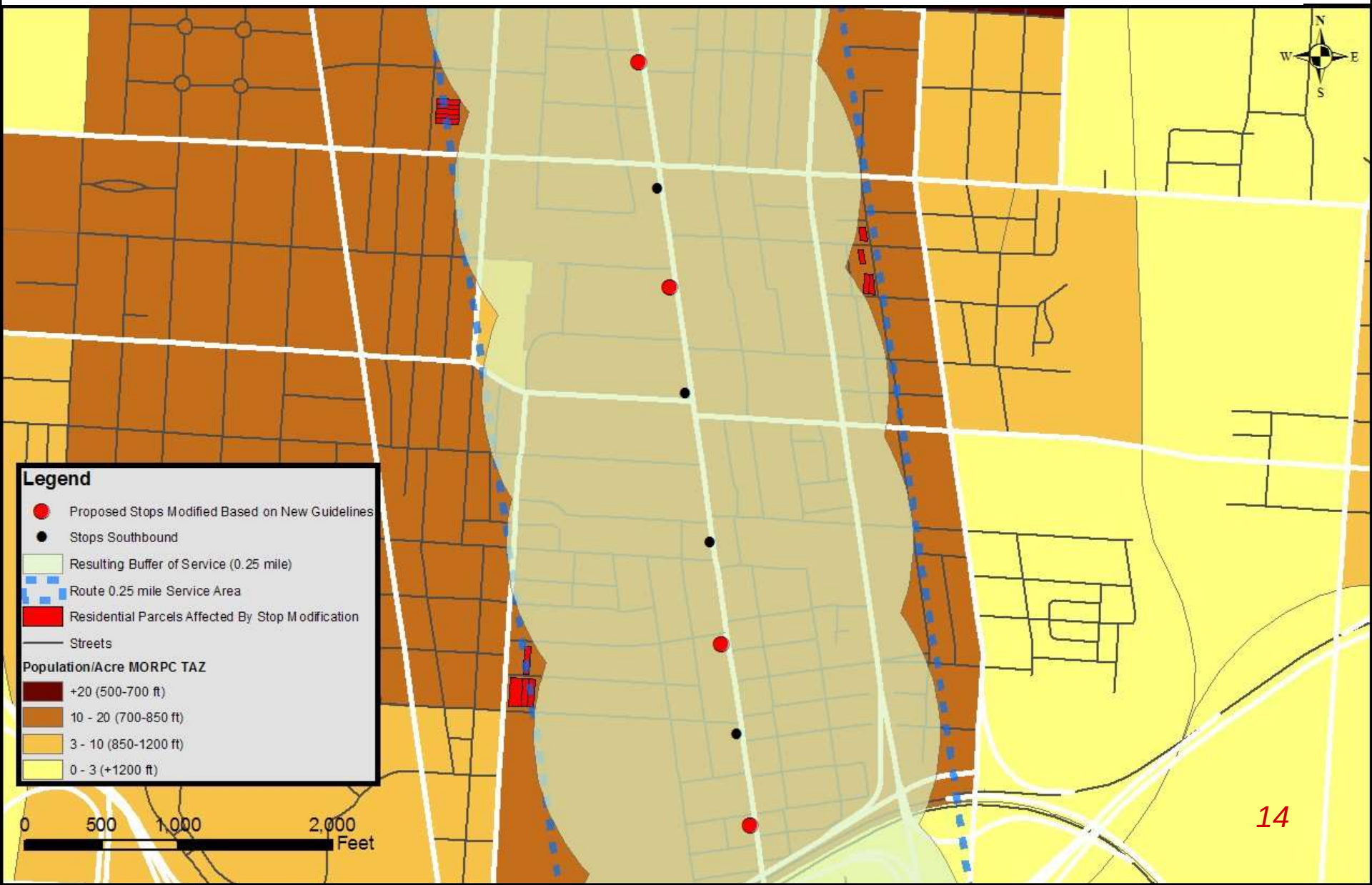
Transit System Guidelines Comparison

Agency	Location	Minimum Stop Distance (Ft)	Middle Stop Distance (Ft)	Maximum Stop Distance (Ft)	Avg. Stops Per Mile**
SFMTA	San Francisco, CA	800		1000	5-7
TriMET	Portland, OR	780		1320	4-7
MetroTransit (5)	Minneapolis, MN	660			6-8
SEPTA (Existing Routes)	Philadelphia, PA	500			10
SEPTA (New Routes)	Philadelphia, PA	1000			5
GRTC	Richmond, VA	880	1056	1320	4-6
King County Metro	Seattle, WA	880		2640	4-6
LYNX	Orlando, FL	600	750	1000	5-9
RTA (6)	Cleveland, OH	600		1350	4-8
CATS (7)	Charlotte, NC	500	900	1300	4-10
COTA (Proposed)	**Columbus, OH**	**500**	**850**	**1200+**	**4-10**

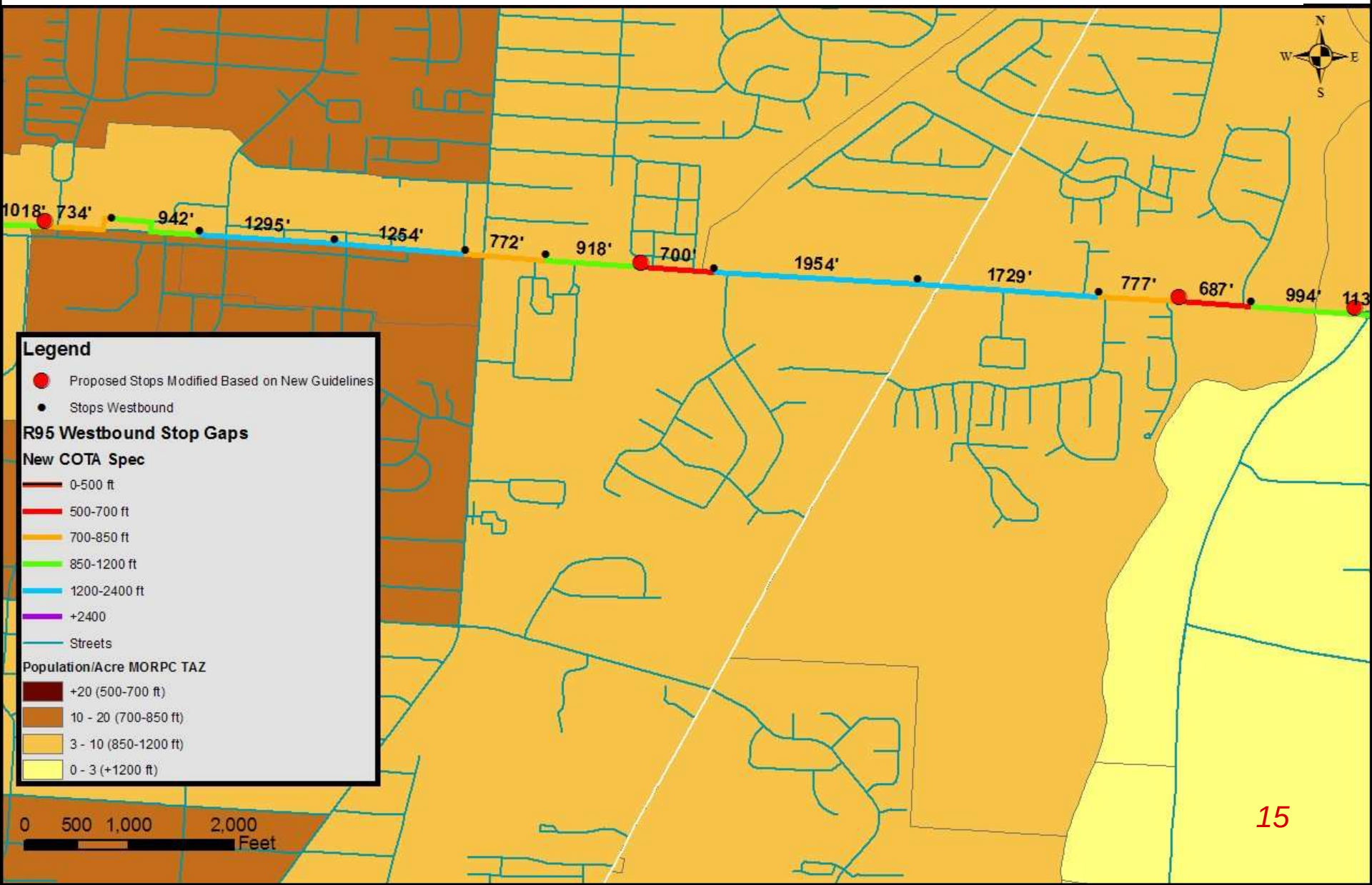
*Some transit systems do not define stop spacing ranges, only target numbers
**Avg. stops per mile is calculated based on the numbers defined above (e.g. 5280ft / 660ft = 8 per mile)

Example Analysis (Draft Results)
Local Route

Example Analysis (Draft Results)
Local Route

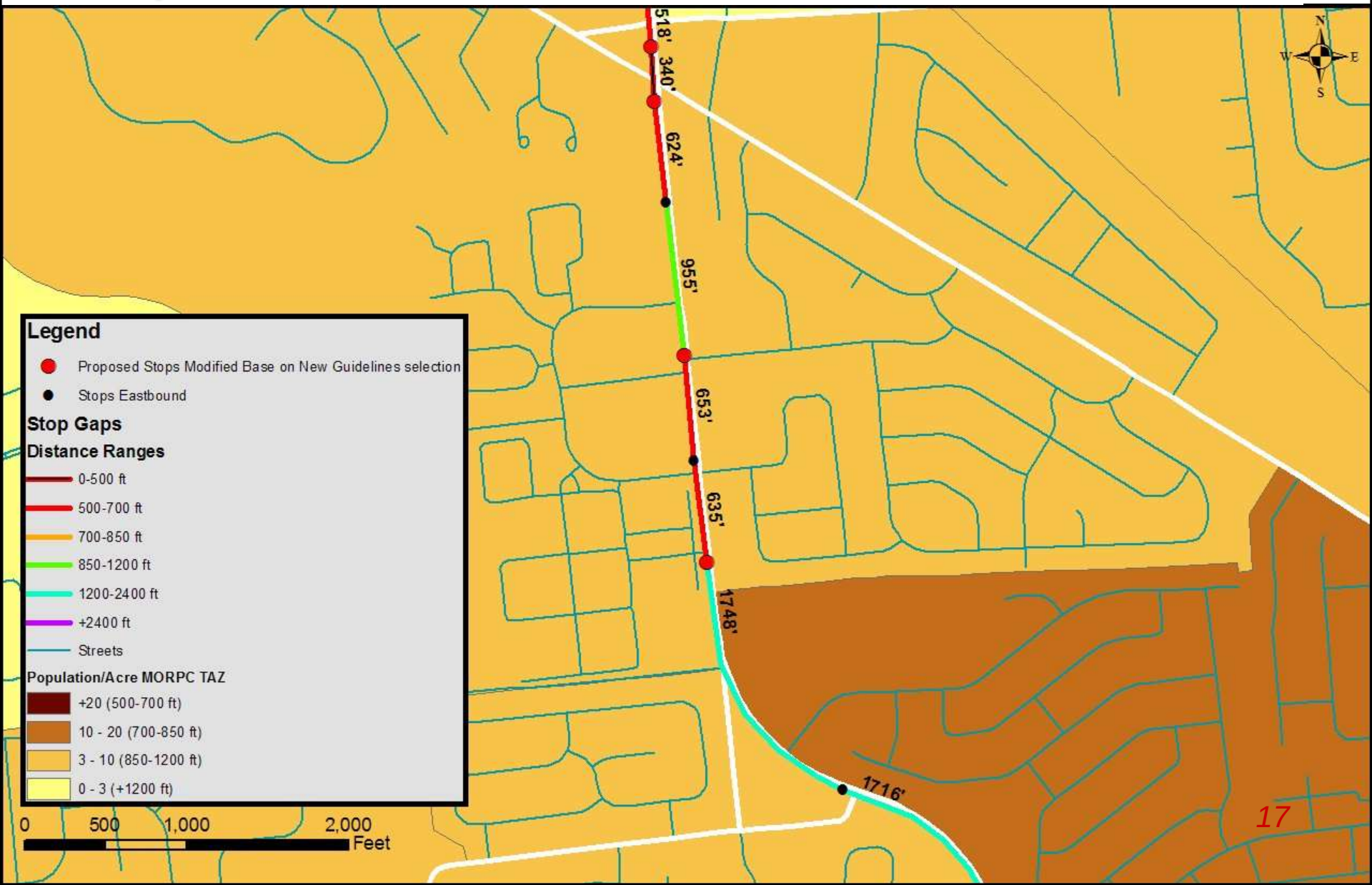


Example Analysis (Draft Results)
Crosstown Route



Example Analysis (Draft Results)
Crosstown Route

Example Analysis (Draft Results)
Express Route



Example Analysis (Draft Results)
Express Route

Rider Impact Study

- "A 1992 study conducted by MTA New York City Transit determined that in local bus stop relocation, where the change went from approximately 10 per mi (530 ft between stops) to 7 per mi (750ft), a 42 percent increase in distance between stops, the number of walkers increased by only about 12 percent" (4, p.13)

- **Summary:**
  - **Stop spacing increased from 530 ft to 750 ft on average (42% increase)**
  - **Resulted in 12% increase of walkers**
  - **"Often, it only means reorienting to a new stop, with the walking distance unchanged for most patrons"(4, p.13)**

Additional Bus Stop Spacing Considerations

- **Bus Stops are consolidated, not repositioned (unless necessary)**
  - Consolidation is more cost effective and has a smaller impact on passenger walking distances
- **Statistics alone are not used to determine consolidation/relocation**
  - Other existing conditions are considered
    - Existing pedestrian amenities
    - Sidewalks
    - Lighting
  - Land use characteristics (access):
    - Special needs (ADA Community, Seniors, etc.)
    - Schools
    - Hospitals
    - Major points of interest

Example Analysis (Draft Results)

- **Local Route Example**
  - 20 of 67 are recommended for consolidation
  - Results in potential 30% reduction of route bus stops
  - Potential time savings per trip, Approx. 3 -12 minutes
  - Potential to increase route frequency or reduce number of buses needed

- **Crosstown Route Example**
  - 17 of 84 are recommended for consolidation
  - Results in potential 20% reduction of route bus stops
  - Potential time savings per trip, Approx. 1-9 minutes

- **Express Route Example**
  - 8 of 24 are recommended for consolidation
  - Would result in 33% reduction of route bus stops
  - Potential time savings per trip, Approx. 1-4 minutes

Public Involvement Process During Implementation Phase

- Project Information posted on COTA website (route and stop specific)
- Commuter bulletins posted at affected bus stops and buses
- Solicit public comments/suggestions

  - web: www.cota.com
  - US Mail: 33 North High St. 43215
  - Phone: (614) 228-1776
  - Rider education literature

Commuter Bulletins posted in shelter

Commuter Bulletins posted at bus stop