Small is Beautiful

Community Transit Solutions for the Suburbs

CTAA Expo

June 2014

New Suburban Challenges

- Lower density development patterns
- Where is the funding to compete with urban and suburban commuter needs?
- Increased transit dependent populations and lack of existing transit
- Brookings Institution suburban poverty report underscores these challenges

Why Community Transit

- Lower operating cost ($40.00-60.00/Hour)
- More appropriately sized vehicles for lower density corridors (16 to 35 passenger)
- Integrates human service transportation and traditional transit customers
- Extend the reach of traditional transit into lower density suburban areas

Basic Principles for Design

- Tap a range of human service, transit and medical grant sources
- Clock headways and timed transfer to promote transit integration
- Aggressively target market timetable distribution to residential origins and destinations
- Provide extra recovery time for deviations

MCAT Shuttle

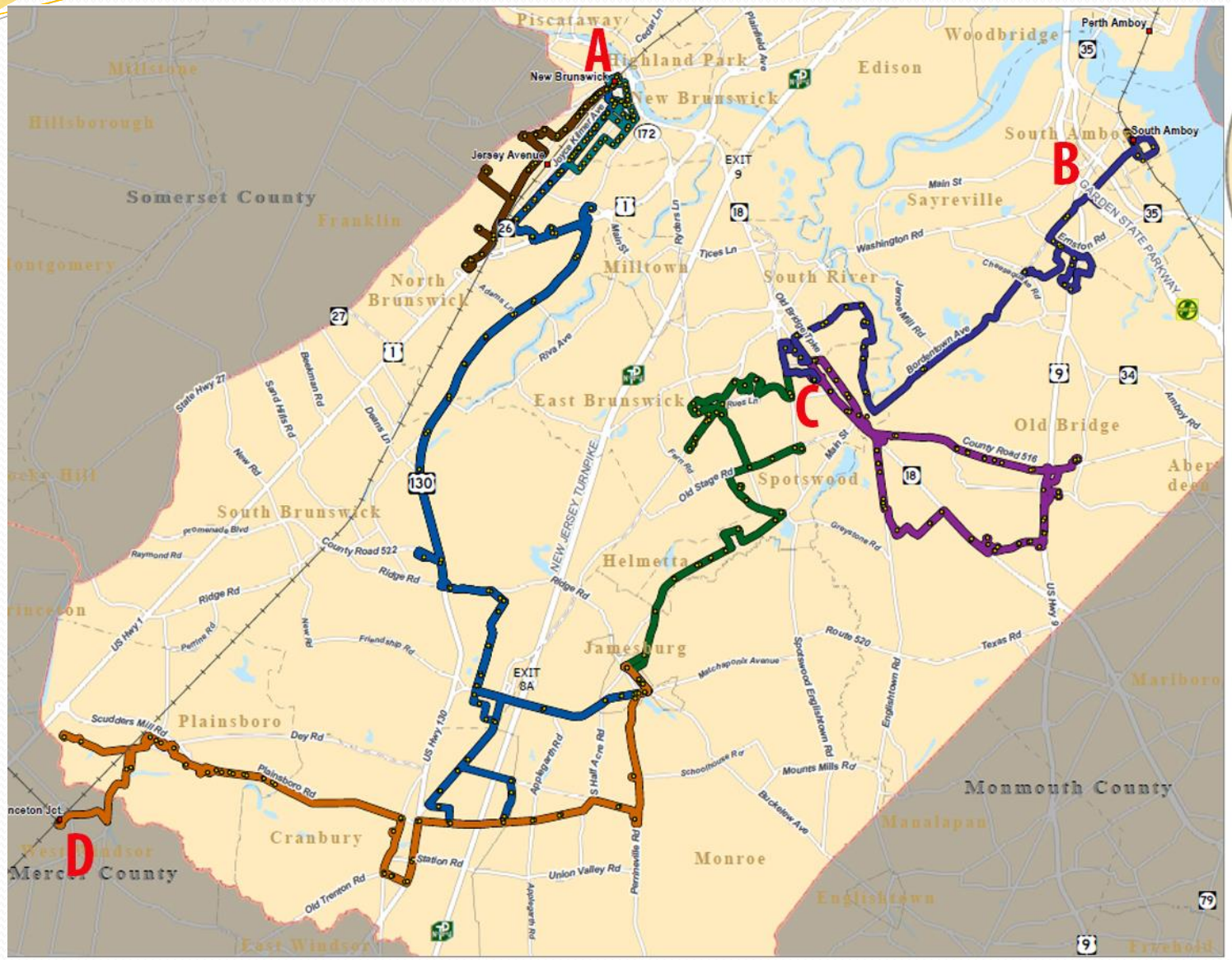
Development of a suburban county transit system in Middlesex County, NJ

The Operating Environment

- Service Area: 310 square miles
- Population: 810,000
- Amtrak NE Corridor bisects north-south
- Raritan Valley and North Jersey Coast Line both serve stations in Middlesex County
- County grew by over 150,000 since 1990

Middlesex County Area Transit

- 2004- former Area Wide Transportation System provided exclusively advance reservation paratransit
- 2005-First two MCAT shuttles begin service
- 2009- Shuttle Ridership for five routes (9 peak buses) crosses 200,000 annual passenger trips, exceeding 50 peak bus advance reservation system
- 2012- Seven route system carries over 400,000 annual passenger trips

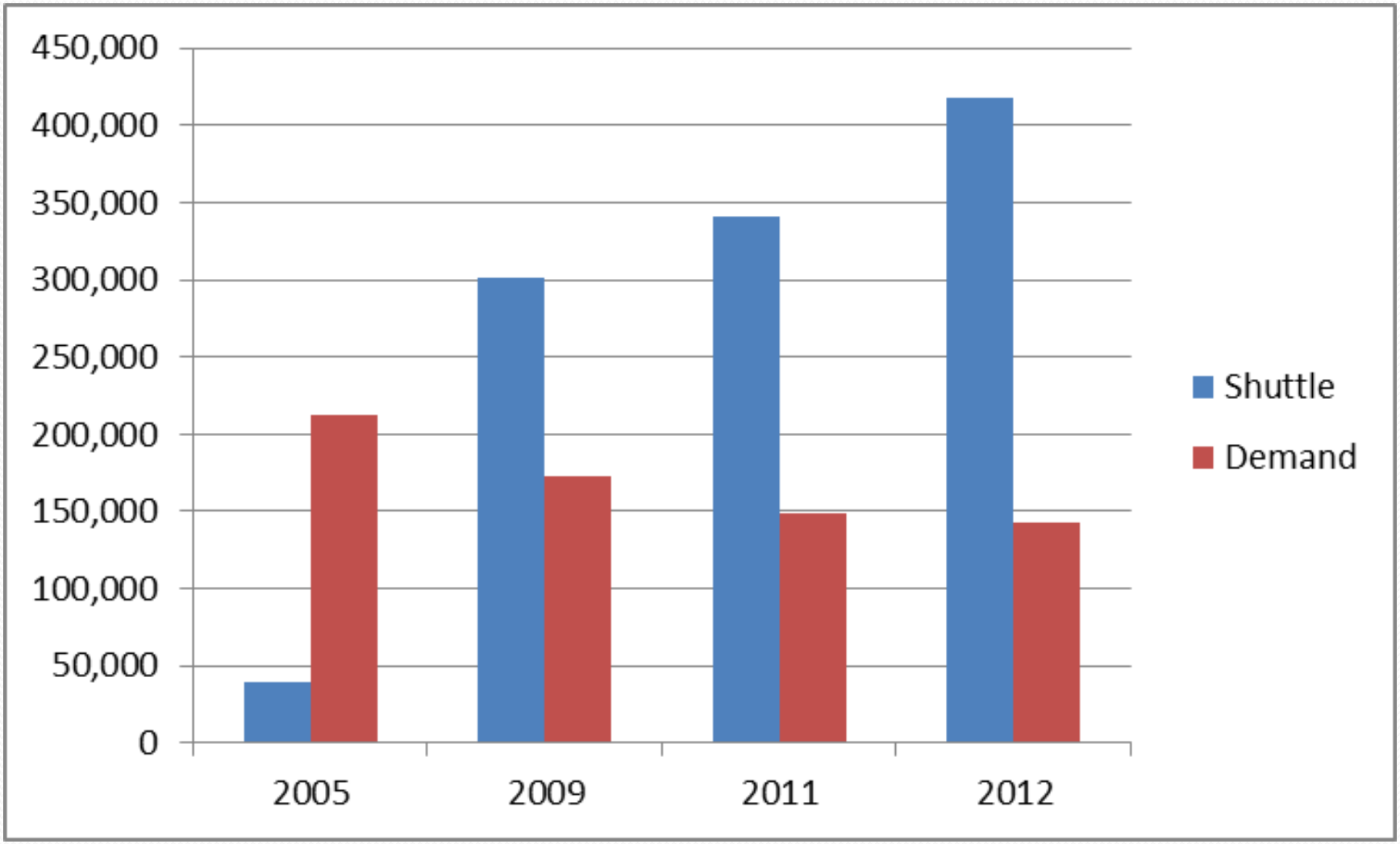

A
B
C
D
New Brunswick
Jersey Avenue
Piscataway
Highland Park
Edison
Woodbridge
Perth Amboy
South Amboy
Sayreville
Somerset County
Franklin
Hillsborough
Millstone
Montgomery
North Brunswick
Milltown
South River
East Brunswick
Old Bridge
Spotswood
Helmetta
South Brunswick
Jamesburg
Plainsboro
Cranbury
Monroe
Monmouth County
Mercer County
Manalapan
Englishtown
Marlboro
Aberdeen
Princeton Jct
EXIT 9
EXIT 8A
NEW JERSEY TURNPIKE
GARDEN STATE PARKWAY
Main St
Washington Rd
Ryders Ln
Tices Ln
Riva Ave
Ridge Rd
County Road 522
County Road 516
Old Stage Rd
Route 520
Texas Rd
Matchaponix Avenue
Spotswood Englishtown Rd
Englishtown Rd
Mounts Mills Rd
Schoolhouse Rd
Buckelew Ave
Greystone Rd
Bordentown Ave
Jewett Mill Rd
Emston Rd
Cheesequake Rd
Old Bridge Turnpike
Rues Ln
Fern Rd
Amboy Rd
Scudders Mill Rd
Plainsboro Rd
Dey Rd
Friendship Rd
Perrine Rd
New Rd
Sand Hills Rd
Beekman Rd
Deans Ln
Adams Ln
State Hwy 27
US Hwy 1
US Hwy 130
US Hwy 9
Apgar Dr
Apgargarth Rd
S Half Acre Rd
Perrineville Rd
Station Rd
Union Valley Rd
Old Trenton Rd
Promenade Blvd
Raymond Rd
Cedar Ln
Plainfield Ave
Lower Kilmer Ave
New York
Connecti
Penn-sylvania
New Jersey
Middlesex County
Delaware
A New Brunswick
NEC, NJT 810, 811, 814, 815
M1, M4, M5
B South Amboy
NJCL 815, 817
M7
C Regional Mall
818, M2, M3, M7
D Princeton ,NEC
600, M6

MCAT Shuttle Design

- Combination of JARC, New Freedom, CMAQ, State and County funding
- Routes operate on a clock headway, 30-60 minute frequency Monday-Saturday
- Span of service ranges from nine to 13 hours per weekday
- Route deviation- one per vehicle run up to ¼ mile
- All services target key funding populations but are open to general public

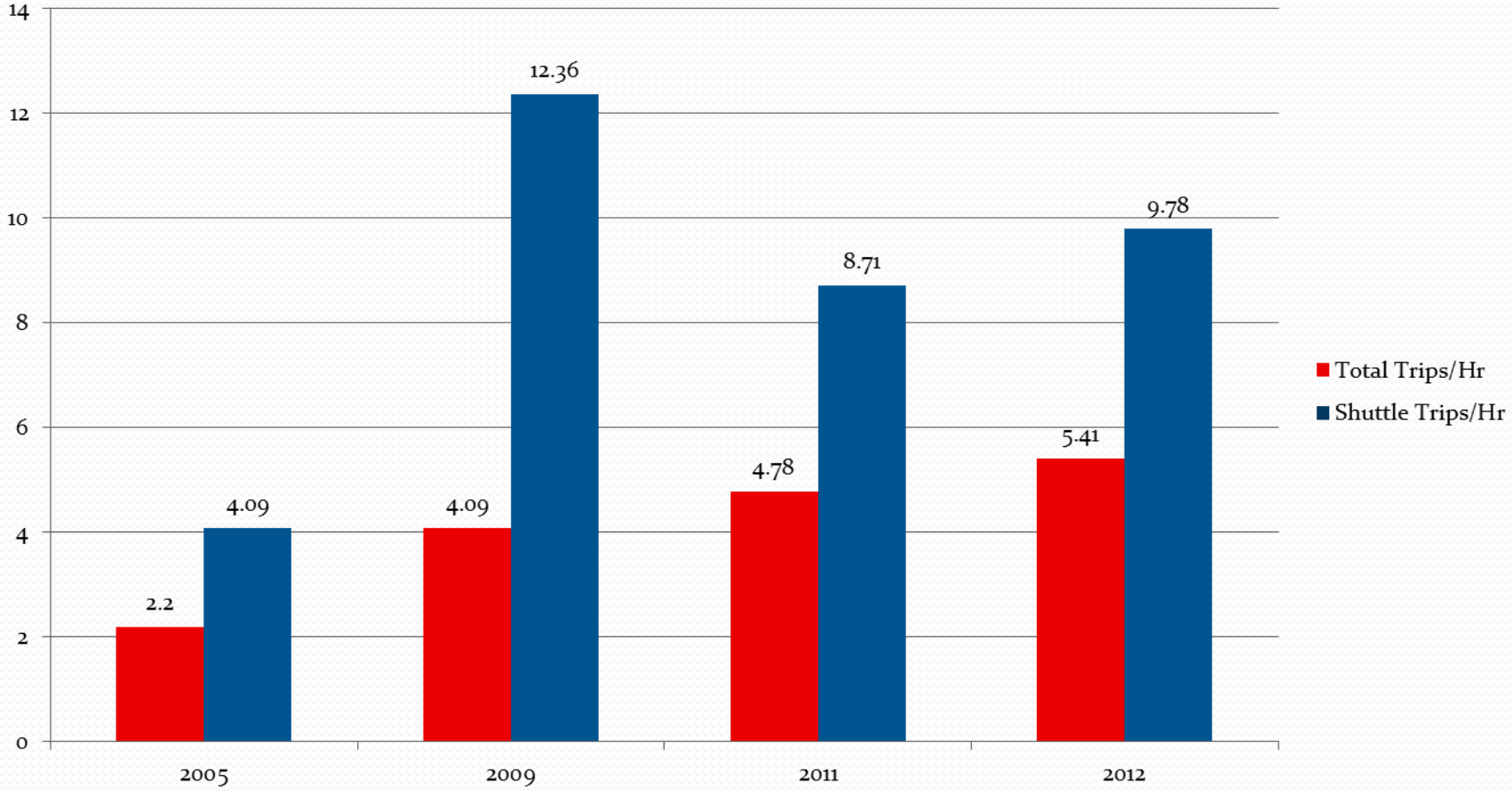
Measures of Productivity

Service Composition

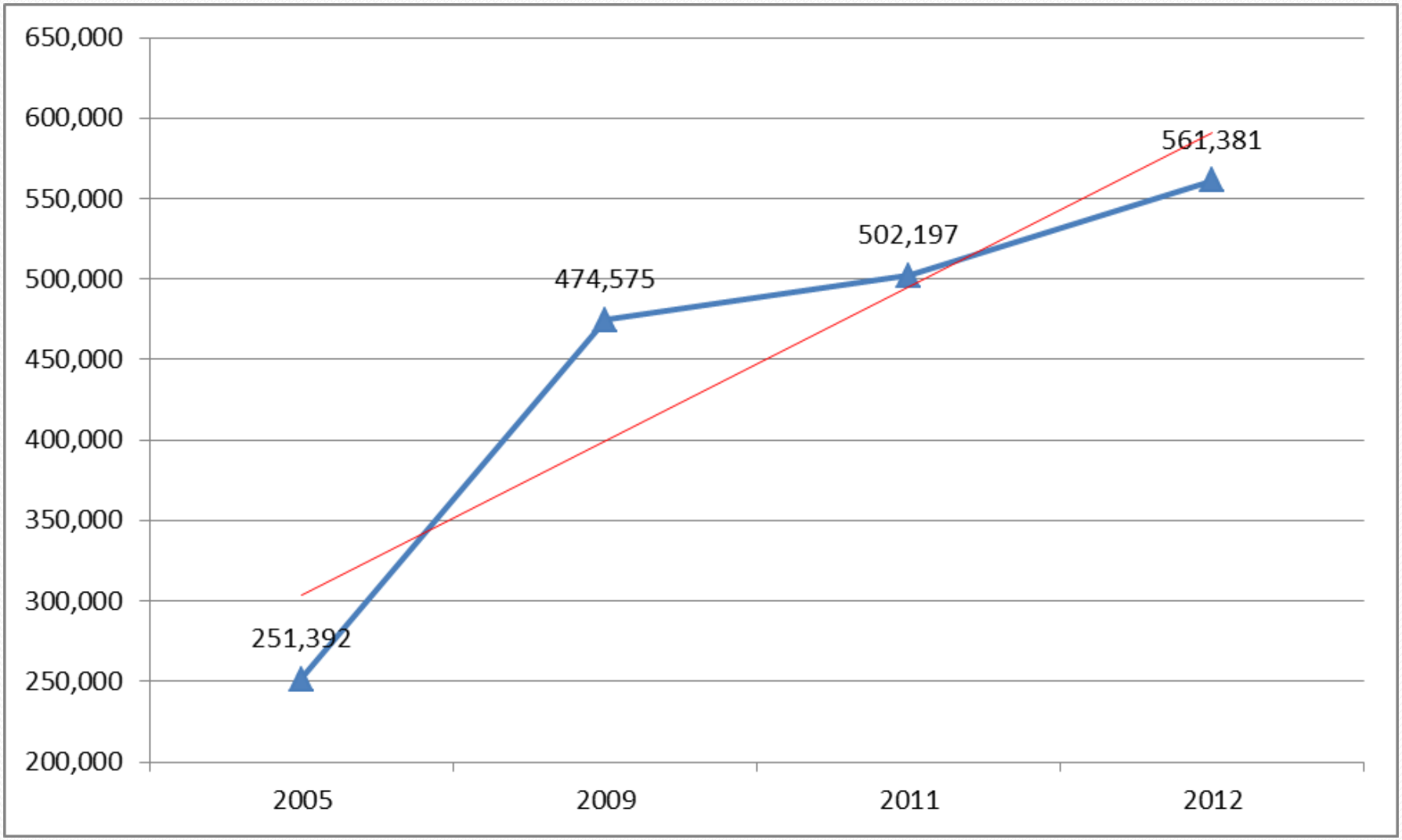


Measures of Productivity

Trips per Hour

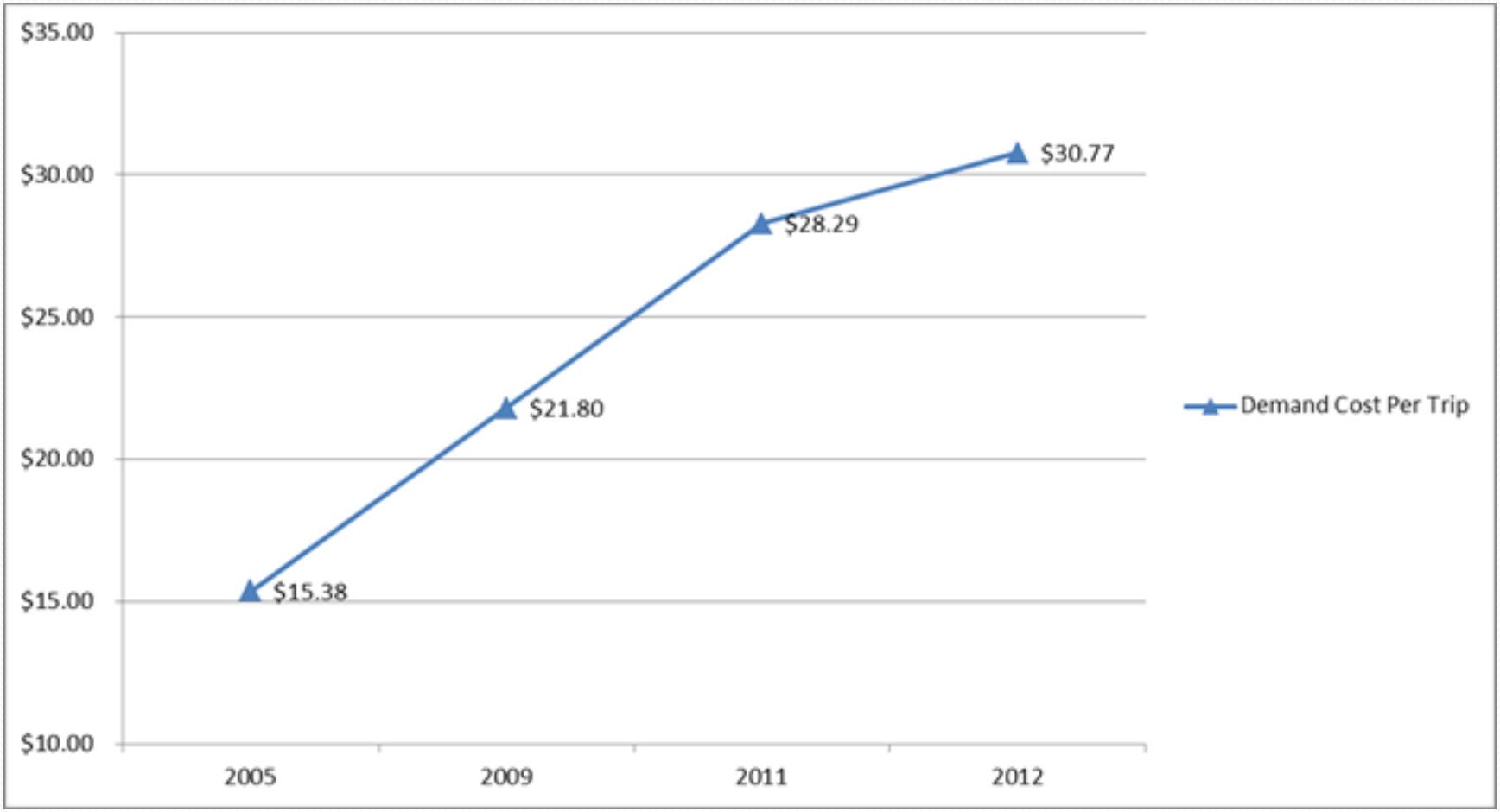


Total Ridership

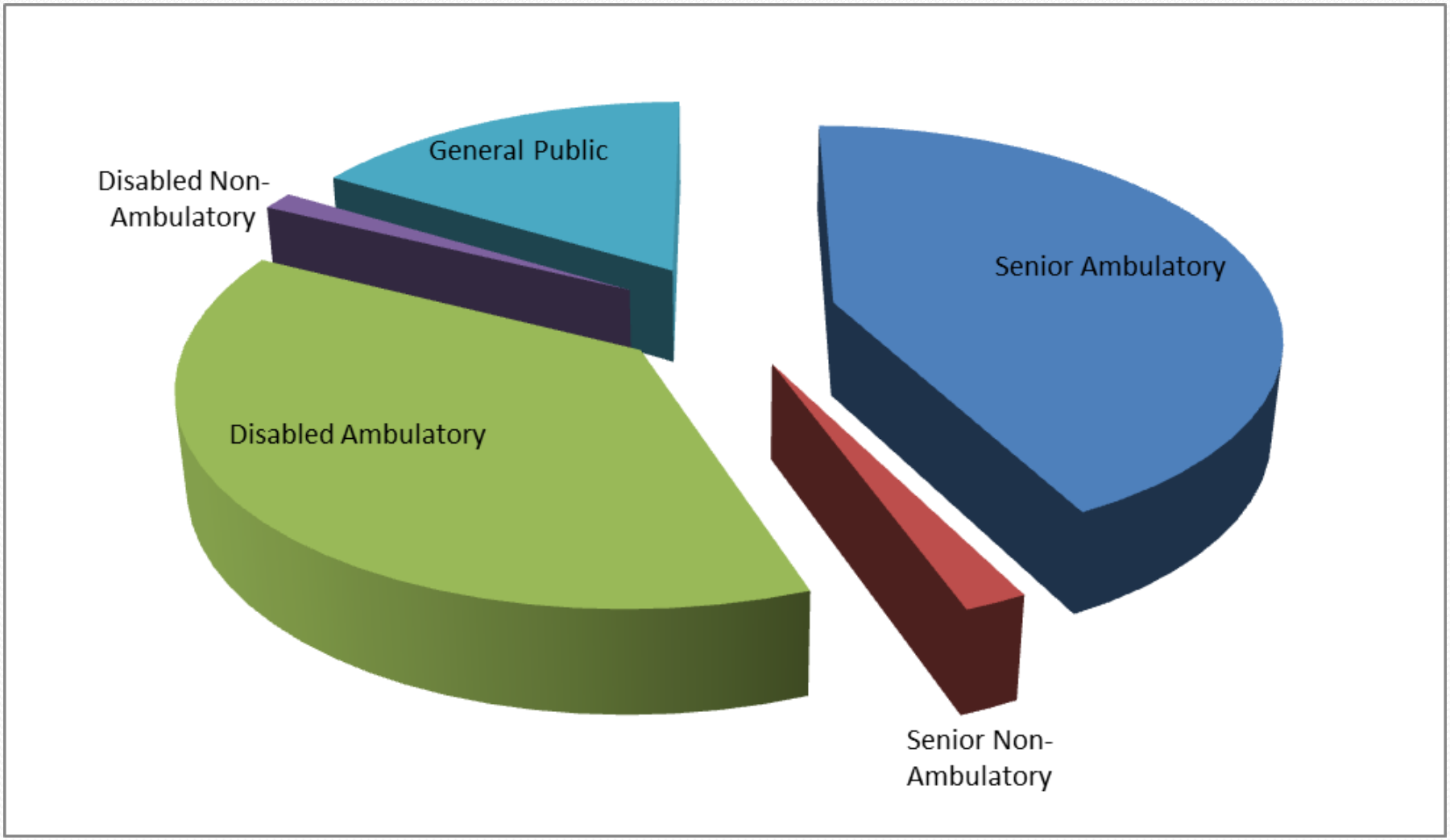


System Cost per Trip Reductions

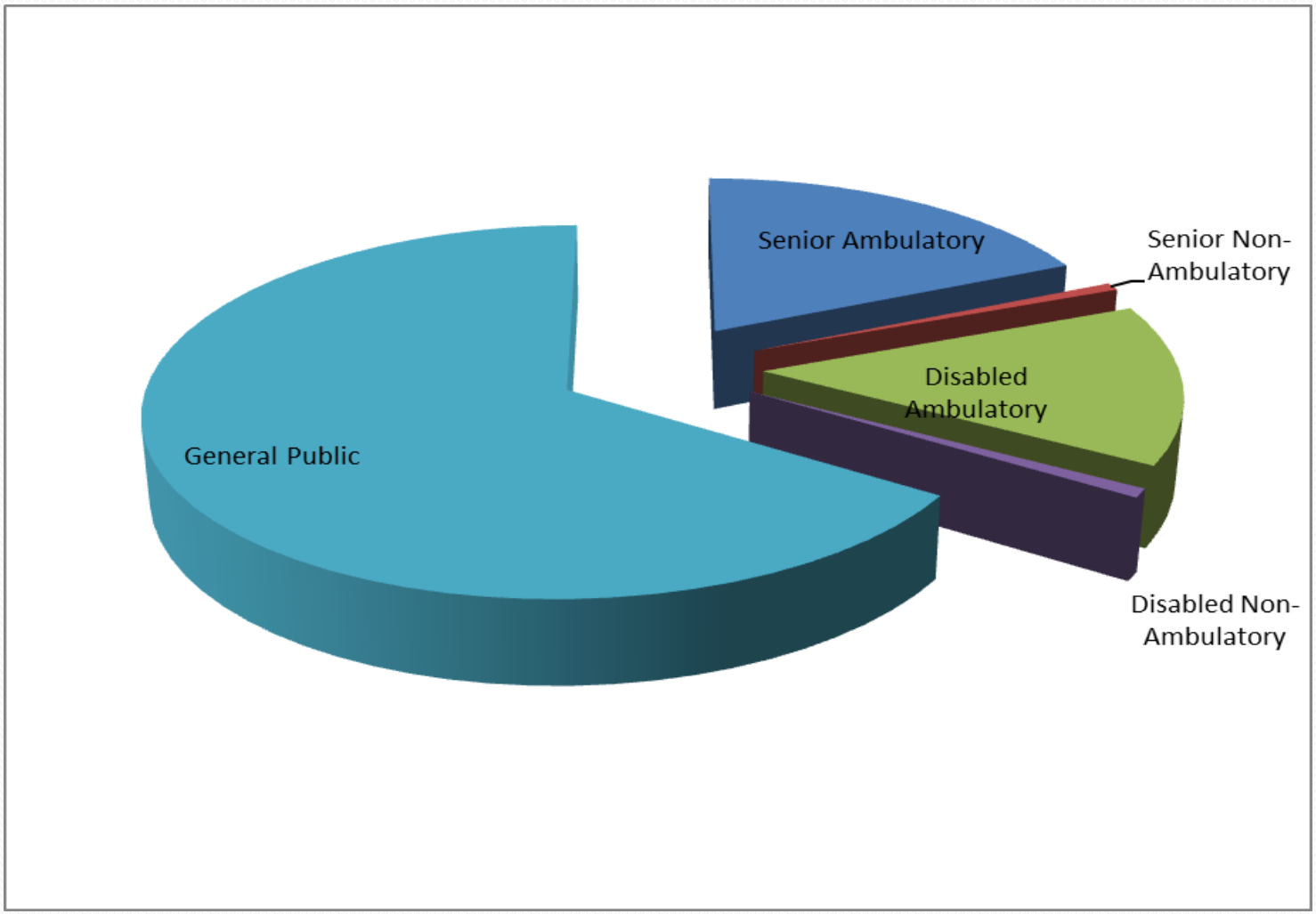
Demand Cost/Trip



2005


General Public
Disabled Non-Ambulatory
Senior Ambulatory
Disabled Ambulatory
Senior Non-Ambulatory

2012


Senior Ambulatory
Senior Non-Ambulatory
Disabled Ambulatory
General Public
Disabled Non-Ambulatory

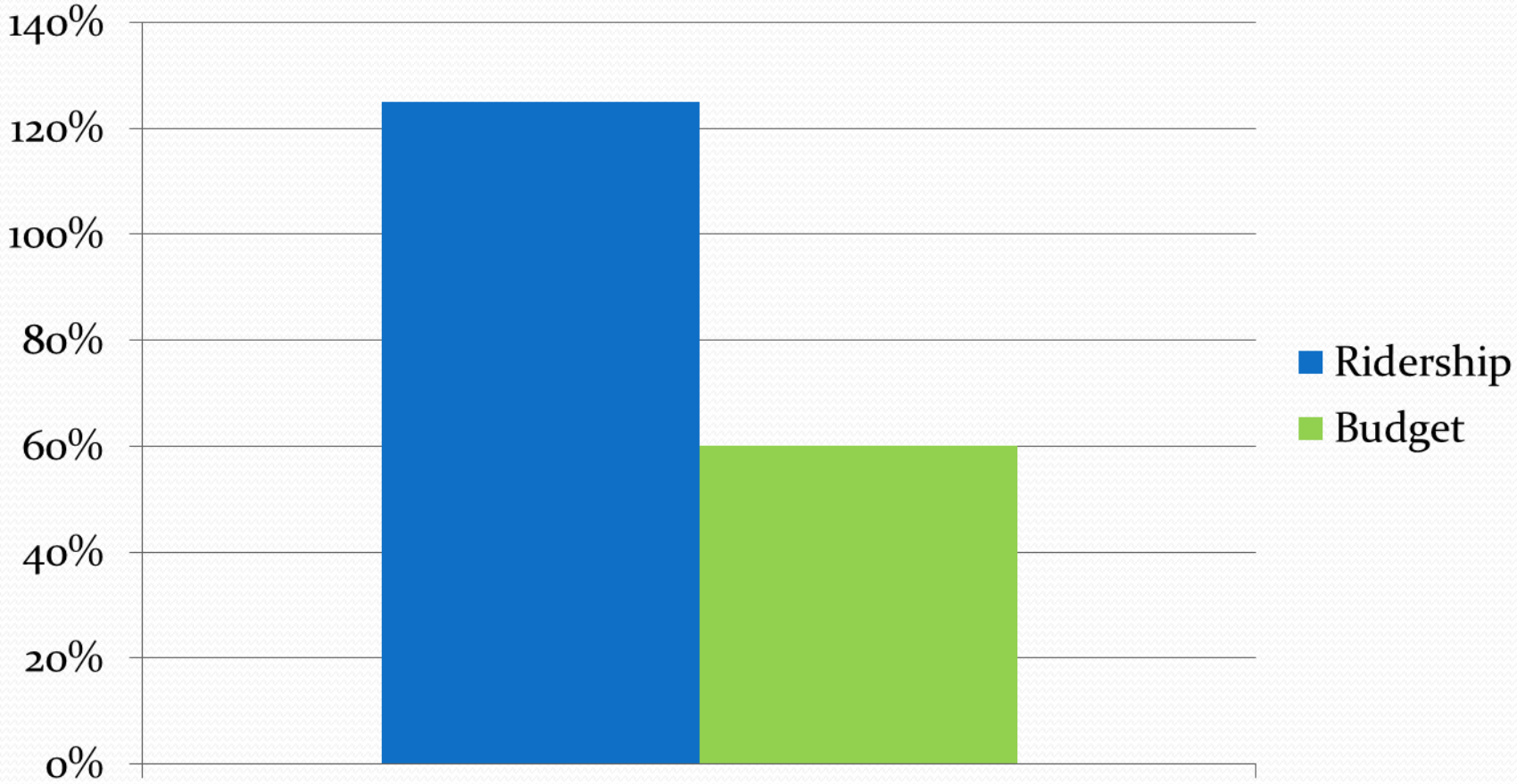
Traditional Transit Connectivity

- Provided an overlay of public transit routes in growing suburban market
- Five of seven routes connected with three rail stations on the Northeast Corridor and North Jersey Coast Line
- Provide connections with ten NJ Transit local bus routes
- Created three hubs where passengers can move between shuttles and NJT bus and rail service

MCAT Shuttle Accomplishments

- System ridership grew by over 125% while budget grew by less than 60%
- Bus routes with peak loads originally met with 16 passenger buses now require 35 passenger buses
- System productivity has more than doubled over seven years
- Increased use of traditional transit through feeder service and distribution of transit tickets

MCAT System Ridership and Budget Change: 2005-2012



Other State Models

Somerset County DASH

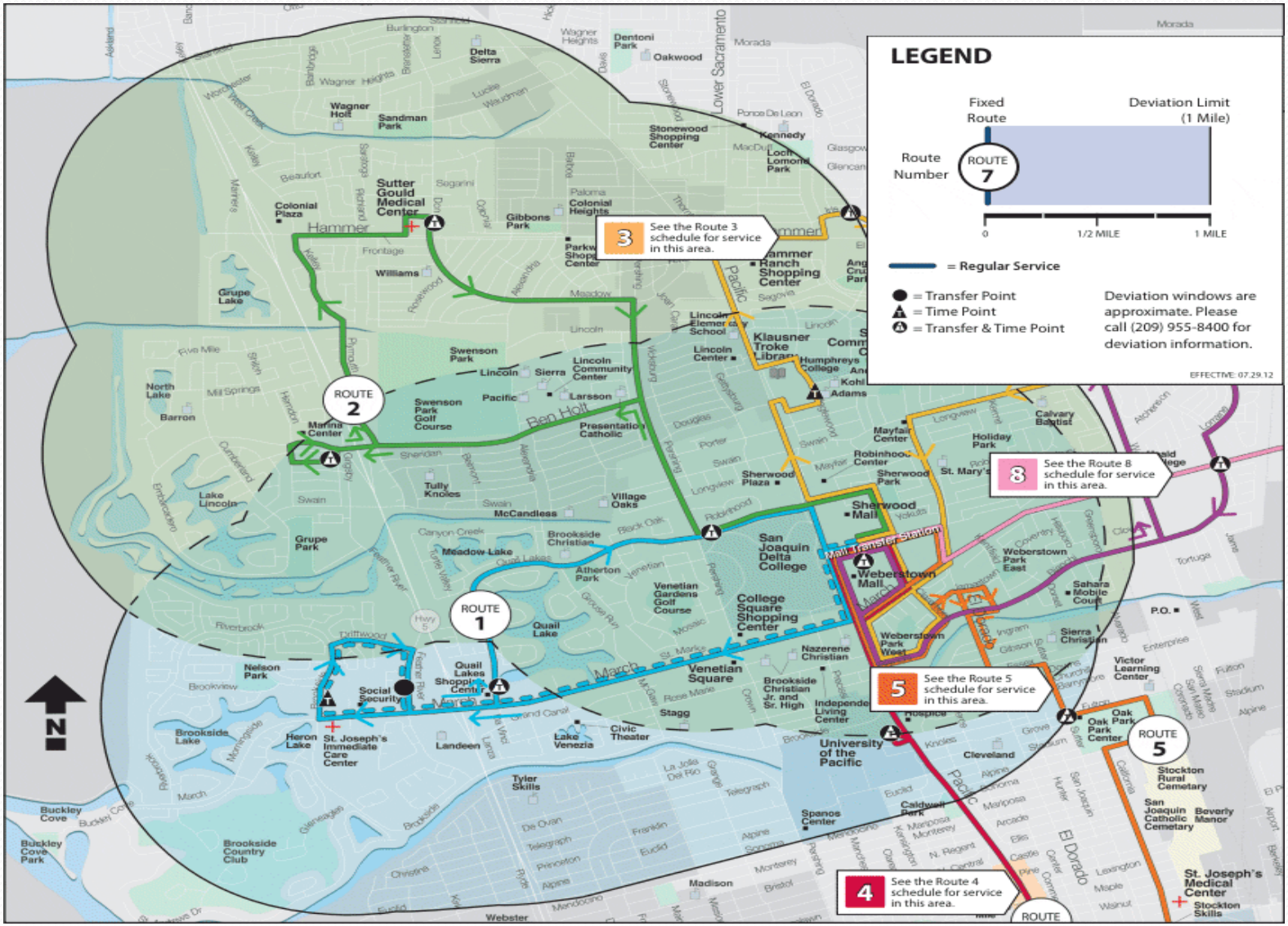
- Provides peak period connections to New Brunswick and Bound Brook Station
- Provides connection between the NE Corridor and Raritan Valley Lines (New Brunswick, Bound Brook)
- Carries over 300 daily one-way passenger trips

Sussex County

- Route 206 Demand Shuttle provides connection to Netcong Rail Station in Morris County
- Hoping to expand to a fixed schedule service in future
- Will be modified to provide connection to the new Andover station in Sussex County

Other National Models

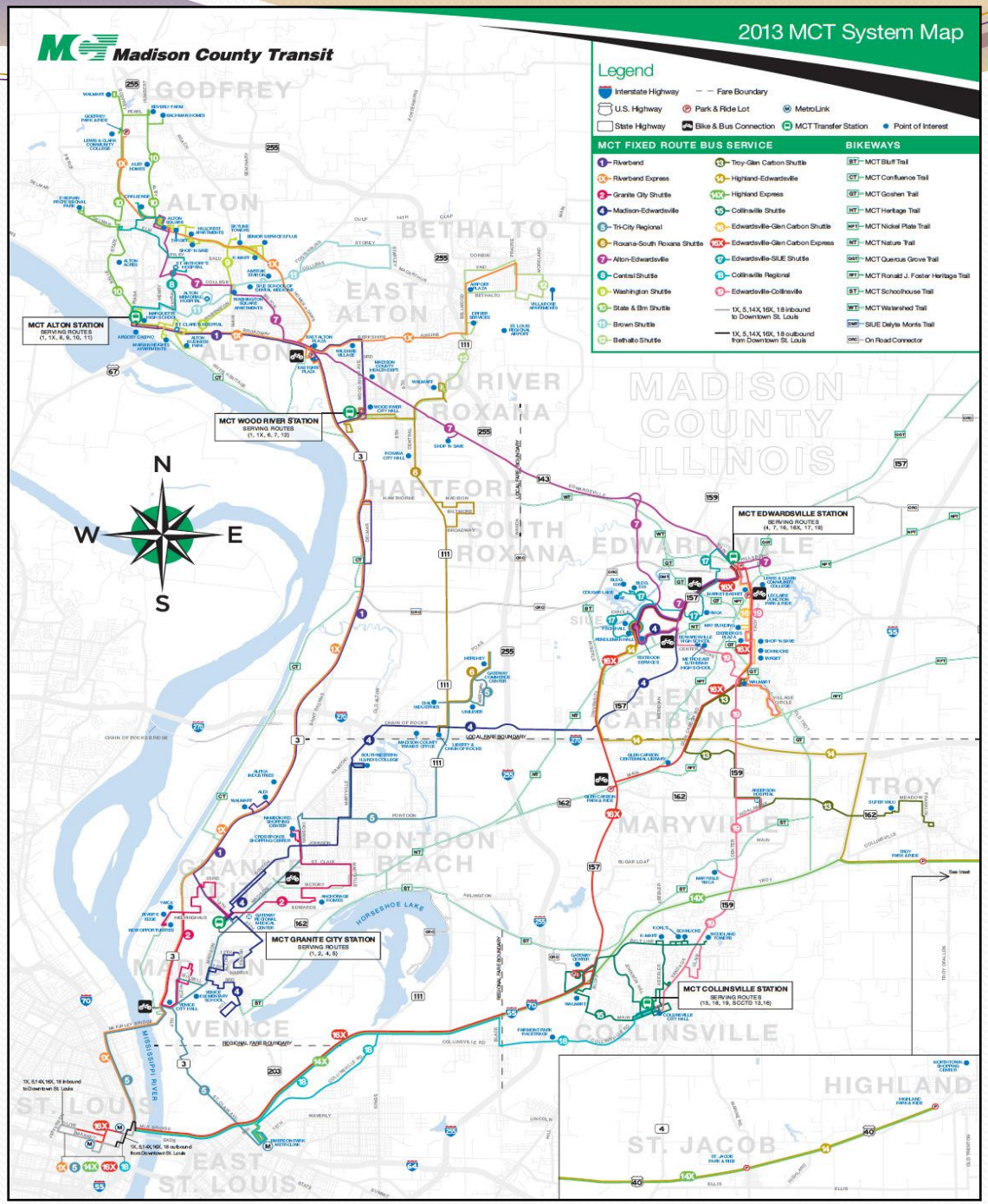
San Joaquin, CA Transit Hopper



San Joaquin Transit Hopper

- County service area of 780,000 population
- Hopper eight deviated fixed routes serve ADA eligible riders and general public
- Increased ridership by 36% and reduced cost by 86% for ADA riders from 2003-2006
- Total ADA trips 2009-2011 : 66,000 to 125,000
- ADA demand trips 2009-2011: 66,000 to 27,000
- Cost per ADA trip 2009-2011: $47.14 to $29.78
- Trips per revenue hour 2009-2011: 2.2 to 3.4

Madison County, IL Service Routes



Madison County (IL) Shuttles

- County service area of 270,000 population
- Eleven shuttles on clock headway/timed transfer with traditional cross county and regional commuter bus routes
- Shuttle routes use lower cost body on chassis buses with lower maintenance and fuel costs
- Shuttles are modified to serve emerging origins and destinations
- Shuttle routes carry between 3000 and 10,000 monthly passenger trips per route

Lessons Learned

- Importance of target market timetable distribution at residential, commercial and public centers (timetable distribution to over 200 outlets)
- Value of timed transfer in promoting connections between shuttles, regional transit
- Importance of headway frequency as alternative to advance reservation in attracting general public riders
- Need for promoting shuttles to potential rail riders as last mile connection to employers

Conclusions

- Community Shuttles could be appropriate solution for growing lower density suburban areas
- Help traditional transit address emerging suburban demand in areas where they can't afford to fund new local bus
- Provide feeder service to existing bus and rail services
- Fare integration policies would promote service integration and encourage increased ridership
- Union implications for shedding under-performing routes are avoided

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