



CITY COUNCIL WORK SESSION

April 5, 2012

Today's Agenda

- Goals for DBBS
- Summary of Public Outreach
- Scenarios
- Route-by-Route Recommendations
- Implementation
- Next Steps

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Your DBBS Team

- City Transportation Department
- Triangle Transit
 - Jennifer Rogers, Project Manager
 - Erik Landfried and Cha'ssem Anderson
- Parsons Brinckerhoff
 - Tim Rosenberger
 - Caroline Nardi
 - Matt Orenchuk
 - Mushtaq Rahman
 - Reggie Scales
- Sounding Board

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Goals for Designing Better Bus Service

- **Goal 1. Safety**
- **Goal 2. Service Quality** (90% on-time performance)
- **Goal 3. Fiscal Responsibility** (match service to demand)
- **Goal 4. Community Benefits** (improve connections)

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Goals for Designing Better Bus Service

- Sources of Goals
 - Customer Satisfaction Survey
 - Comments and Complaints
 - State of Practice
 - Consistency with City's Strategic Plan and Long-Range Transportation Goals

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Safety

- Reasons for Goal
 - Customer Complaints
 - About waiting at the bus stop or getting to/from bus stops
 - Public Perceptions of DATA Service
 - Only 48% of citizens reported that a perception of being safe or very safe while riding DATA or the Bull City Connector
 - Customer Perceptions of DATA Service
 - 47% of customers reported that their sense of personal safety on DATA buses was very good or excellent
 - Only 27% of customers reported that the behavior of other people on DATA buses is very good or excellent

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Service Quality

- On-time performance
- Reasons for Goal
 - Customer Complaints
 - Scores from Customer Satisfaction Survey
 - Strongest relationship between experiencing a problem and overall satisfaction with service
 - Overwhelmingly selected as most important quality of service to improve (38%)
 - Empirical Evidence of Poor Performance
 - Buses run more than 5 minutes late at 61% of timepoints in system

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Fiscal Responsibility

- Meeting customer demand in most efficient way possible
- Reasons for Goal
 - Strongest Correlation between Frequency of Service at Rush-Hour and Overall Satisfaction
 - Direction from City Manager
 - Good Governance
 - Implicit Trade-off Between Maximizing Coverage and Ridership

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Community Benefits

- Improve connections to educational opportunities and important destinations in Durham
- Reasons for Goal
 - Feedback from stakeholders
 - Consistency with City's Strategic Plan Goals 1 and 3
 - Consistency with Greenhouse Gas and Long-Range Transportation Targets

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Key Recommendations

Safety

- The draft plan will:
 - Reduce overcrowding on 5 busiest routes
 - Downtown to The Village (Routes 3 and 16)
 - Downtown to Northgate Mall (Route 1)
 - Downtown to North Carolina Central University (Route 5)
 - Downtown to Durham Tech (Route 8)

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Safety

- The draft plan will:
 - Improve safety at 200 bus stops
 - Improve safety getting to and from bus stops along three corridors
 - Install sidewalks and bus stop shelters along the three most heavily travelled transit corridors – Holloway/Liberty Streets, Fayetteville Street, and North Roxboro Street
 - Improve overcrowding issues at 4 neighborhood transit centers

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Service Quality

- The draft plan will:
 - ▣ Improve on-time performance from 61% to 90%

On-Time Performance

DATA SYSTEM
 61% on-time performance at all timepoints

Route	On-Time Performance	Route	On-Time Performance
1	66%	10	68%
2	64%	11	42%
3	69%	12	46%
4	79%	13	50%
5	72%	15	55%
6	73%	16	78%
7	67%	16B	69%
8	70%	17	77%
9	70%	BCC	63%

Late Arrivals to Durham Station

DATA SYSTEM
 15% late to end-of-line timepoint
 Indicator of missed transfers

Route	Late Arrivals	Route	Late Arrivals
1	20%	10	13%
2	12%	11	48%
3	13%	12	39%
4	6%	13	-
5	2%	15	20%
6	12%	16	23%
7	7%	16B	24%
8	5%	17*	0%
9	5%	BCC	-

* To Horton Rd transfer location

Service Quality



Service Quality

Designing Better Bus Service in Durham

Table 6-4: Routes & Monthly Priority-Dispatch Routes/Miles

Route	Line	Period	Estimated Speed (mph)	Length (mi)	Days	Priority	Priority Vehicles	Non-Priority Time	Peak Time	Off-Peak	Off-Peak Vehicles	Estimated Revenue Hours	Cost	Other Revenue
10	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
11	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
12	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
13	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
15	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
16	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
16B	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
17	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100
BCC	Northgate Mall - Central Station	MF	25.0	10.0	5	1	1,000	100	100	100	100	100	100	100

Fiscal Responsibility

- The draft plan will:
 - ▣ Focus services to meet mobility needs by matching service frequency to demand

Fiscal Responsibility

- Customers boarding/on-board by trip segment guides recommended frequency

Passenger Loads by Segment	Recommended Frequency
20+ passengers	15 min frequency
15 - 19 passengers	15 min frequency
10 - 14 passengers	30 min frequency
5 - 9 passengers	60 min frequency
0 - 4 passengers	60 min frequency or elimination

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Fiscal Responsibility

Frequent Bus Network

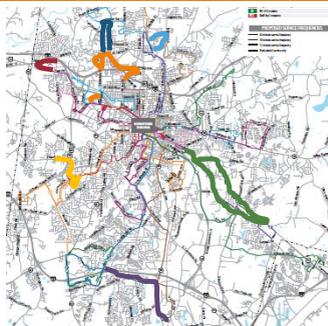
- Duke Medical Center (Bull City Connector)
- The Village (Route 3/16)
- NCCU (Route 5)
- Northgate Mall (Route 11)
- Durham Tech (Route 8)
- Durham Regional Hospital (Route 4)
- Chapel Hill-Durham (Route 405)



Fiscal Responsibility

Segments with service reductions from 30 min to hourly

- Route 1
- Route 2
- Route 5 (proposed Route 20)
- Route 6
- Route 7 (proposed Route 41)
- Route 9
- Route 11 (proposed Route 6B)



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Eliminated stops

- 190 boardings at stops not within 1/4 mile of proposed routes
- 22,000 total daily boardings on DATA
- < 1% of total daily boardings on DATA

Route	Location	Customers
3	Robinhood, Miami, & Fay	24
5	Cornwallis & University	25
5	Forest at Duke	4
6	Science Dr	13
7	Cook Rd	23
7	Parkwood-Revere Rd	17
8	Umstead-Grant-Simmons	13
8	Sima (daytime only)	30
10	Old Chapel Hill Rd	15
11	Hillsborough Rd at Operations Dr	10
17	North of Northern High School	16

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Community Benefits

- The draft plan will:
 - Support economic development by providing more direct service to major employment centers and educational institutions

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Community Benefits

Figure 6-4: Market 2 Peak Period Results



Figure 6-5: Market 2 Offpeak Period Results



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Community Benefits

Duke Employee Residential Locations

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Community Benefits

Access to NCCU and Durham Tech

- ▣ Fayetteville St (Route 5)
- ▣ Lawson St (Route 8)
- ▣ Alston Ave (Route 12)
- ▣ Lawson St & Alston Ave (Triangle Transit Route 700)

Community Benefits

Access to Duke/VA Medical Centers

- ▣ From Durham Regional Hospital/Durham County Stadium
- ▣ From Southpoint/South Square
- ▣ From Rougemont to Duke and Downtown
- ▣ From Mebane/Hillsborough to Duke and Downtown
- ▣ From Chapel Hill (Route 405)
- ▣ From Raleigh (DRX)

Community Benefits

Access to DPS High Schools

- ▣ DSA (Routes 1 and BCC)
- ▣ Hillside (Routes 5, 7, and 12)
- ▣ Jordan (Route 10 Tripper, 52)
- ▣ Northern (Route 9)
- ▣ Southern (Route 16)
- ▣ Riverside (Route 9)

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Community Benefits

▣ Expanded Service Hours

- ▣ Extend Sunday hours to 9pm on DATA
- ▣ Extend Saturday service until 11 pm for Triangle Transit
- ▣ New Sunday service on Triangle Transit routes
- ▣ Sunday service to Brier Creek (Route 15)

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Community Benefits

▣ New or Expanded Park-and-Ride Lots

- ▣ Rougemont
- ▣ North Roxboro Rd near Latta Road
- ▣ Southpoint area
- ▣ Durham County Stadium area
- ▣ Patterson Place area
- ▣ Woodcroft area

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Summary of Public Outreach

- On-board and community survey (Mar 2011)
 - ▣ More than 2000 responses
- 3 rounds of public/community/stakeholder meetings
 - ▣ Initial fact-finding (March 2011)
 - ▣ Existing conditions report (Nov 2011)
 - ▣ Initial recommendations for DATA route changes (Jan 2012)
- Extensive public engagement
 - ▣ 10 public meetings
 - ▣ Tabling sessions
 - ▣ Over 50 stakeholder meetings
 - ▣ Over 300 comments received at meetings, at bus stops, online, by mail, by phone
 - ▣ Sounding Board

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Sounding Board

- 25 members representing diverse backgrounds
 - ▣ Current passengers and those interested in transit
 - ▣ Age, gender, race
 - ▣ Residential location
- 6 meetings since Oct 2011
- Attend public meetings and field trip
- Provide feedback to staff throughout the process
- Sounding Board Recommendation submitted to City Council with the Final Plan

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Public Comments

- Updated initial recommendations to address issues raised by customers and stakeholders
 - ▣ Ross Rd
 - ▣ Birchwood
 - ▣ Liberty St Apartments
 - ▣ McDougald Terrace (Sima/Bacon)
 - ▣ Shannon Rd
 - ▣ Jordan HS
 - ▣ Northeast Central Durham
 - ▣ Weaver St Community
 - ▣ Additional frequency/BCC to NCCU
 - ▣ Moreene Rd Apartments

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Funding Scenarios

- 3 funding scenarios
 - ▣ Scenario 1: Base Scenario
 - ▣ Scenario 2: Minor service expansion
 - ▣ Scenario 3: Major service expansion

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Scenario 1: Base scenario

- Assumes no new revenue sources for Durham transit budget
 - ▣ Growth in cost drivers
 - ▣ Property-tax growth rate
 - ▣ State and federal formula grants

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Scenario 1: Base scenario

- Recommendations have changed since January based on comments received
- The Scenario 1 recommendations will:
 - ▣ Achieve 90% on-time performance for all routes
 - ▣ Provide 15-min service to the Village along Holloway
 - ▣ Provide more direct service to Durham Tech, NCCU, and Southpoint Mall

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Scenario 2: Minor expansion

- Assumes County and Triangle Transit – Assessed Vehicle Registration Fee Increase
 - \$1.9 million per year
 - Covers operating and capital costs
- 3-year implementation
 - Adds 18,500 revenue hours of service (10% increase)

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Scenario 2: Recommendations

- More service
 - 15 min daytime service to NCCU (Route 7)
 - 15 min peak/ 30 min mid-day service from Chapel Hill to Duke/VA and Downtown Durham (Route 405)
- New routes
 - New commuter routes to Duke from South Durham, Durham County Stadium, and Rougemont
- Better waiting areas
 - 30 bus stop improvements
 - 3 park-and-rides for commuter routes
 - Rougemont, Southpoint area, Durham County Stadium area

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Scenario 3: Major expansion

- Assumes Vehicle Registration Fee Increase Plus Half-Cent Sales Tax
 - Affords an estimated increase of 50,000 service hours per year
 - \$15 million for capital projects over 3 years
- 3-year implementation
 - Adds 34,800 revenue hours of service to DATA service (19% increase)
 - Regional and County services are also included in plan

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ROUTE-BY-ROUTE RECOMMENDATIONS

Route Recommendations

- By Group
 - Group 1: Routes 1A, 1B, 3
 - Group 2: Routes 2, 21, 4, 13, 15, 16A, 16B, BCC
 - Group 3: Routes 5, 7, 8, 10, 10T, 12, 20, 41
 - Group 4: Routes 6A, 6B, 11
 - Group 5: Routes 9A, 9B, 17

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ROUTE 1A, 1B, 3

Group 1

Routes 1A & 1B

Route 1

- 65% on-time departures from all timepoints
- 20% late arrivals to Durham Station
 - Late is > 5 min past schedule

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Recommendation – Route 1A/1B

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Ridership

AVERAGE DAILY BOARDINGS (AUG-DEC 2011)

- 0 boardings
- 1-5 boardings
- 6-10 boardings
- 11-25 boardings
- 26-50 boardings
- 51-100 boardings
- 101-500 boardings
- 501+ boardings

PROPOSED DAYTIME SERVICE (MON-SAT)

Rt #	ROUTE NAME
1A	Northgate Mall and North Pointe Drive
1B	Northgate Mall and Hillsdale Road
1C	Duke University and American Village
1D	Duke University and Bennett Memorial
1E	Dearborn Drive and Horton Road/Riverside High School
1F	Dearborn Drive and JFK Towers/Northern High School
BCC	Full City Connector

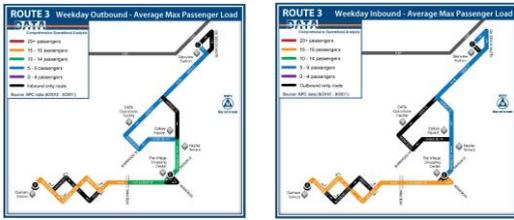
Benefits and Trade-offs

- Benefits
 - Better on-time performance
 - Bidirectional service
- Trade-offs
 - Hourly service from Northgate Mall to end of route

47

Route 3

Route 3



- 69% on-time for all timepoints
- 13% of trips arriving at Durham Station are late
 - Late is > 5 min past schedule

49

Recommendation – Route 3

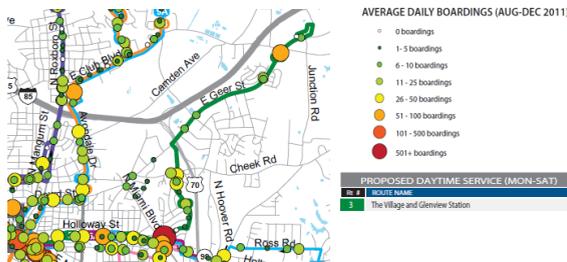


- Eliminated Stops
- Now served in outbound direction only

Street	Daily Customers
Robinhood Rd	10
Miami Blvd	7
Geer St	7

50

Ridership



51

Benefits and Trade-offs

- Benefits
 - Better on-time performance
 - 15 min service from Durham Station to the Village via Holloway St
- Trade-offs
 - Discontinue service at bus stops for 24 customers (1% of Route 3 ridership)

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**ROUTE 2, 21, 4, 13, 15,
 16A, 16B, BCC**

Group 2

Route 13

Table 3-5: Ranked Passengers per Revenue Hour (PPH) by Day Type

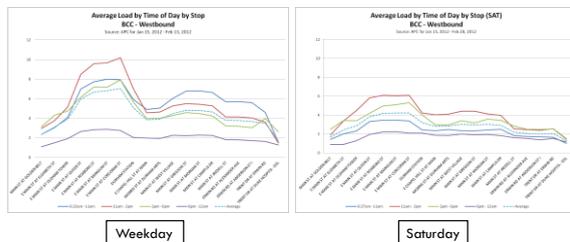
Rank	Weekday		Saturday		Sunday		Holiday	
	Route	PPH	Route	PPH	Route	PPH	Route	PPH
1	3	53.71	3	46.17	3	45.86	3	49.72
2	1	45.62	1	40.42	1	33.43	4	47.51
3	4	45.31	4	29.83	4	32.47	1	38.15
4	16	39.44	16	27.48	6	31.47	6	33.94
5	8	38.94	5	25.34	5	27.05	9	30.13
6	5	38.05	2	25.01	2	26.19	5	24.17
7	6	36.24	12	24.58	9	25.93	16	23.53
8	2	33.52	10	24.49	16	22.33	10	22.56
9	10	32.57	7	23.01	11	21.44	7	22.36
10	12	32.03	11	21.22	10	20.35	11	20.94
11	11	28.51	6	20.97	7	20.33	8	20.92
12	7	25.98	8	20.94	12	19.53	12	19.62
13	9	25.91	9	19.38	8	19.29	2	17.31
14	BCC	24.67	BCC	18.02	15	8.68	13	8.95
15	17	16.38	13	12.64	17	7.39	17	8.06
16	13	16.31	17	11.36	15	-	15	-
17	15	10.83	15	7.51	12B*	-	12B*	-
18	12B*	4.61	12B*	-	16B	-	16B	-
19	16B	4.01	16B	-	BCC	-	BCC	**

* Route 12B was incorporated with route 12 beginning with the August 16, 2011 service period.
 ** Revenue hours unavailable for BCC for holiday service.

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Bull City Connector

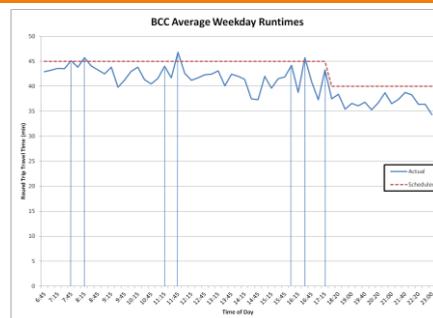
- Low ridership at night and Saturday



55

Bull City Connector

- 3 times of day when BCC consistently runs behind schedule
- Average round trip running time is over the scheduled time



56

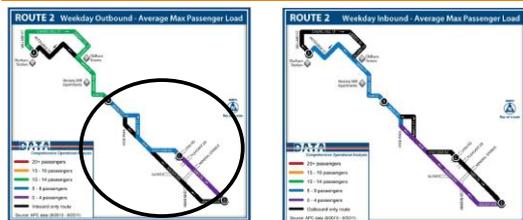
Bull City Connector

- Requests for extensions to BCC include:
 - NCCU
 - NECD
 - West to Erwin/Lasalle

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Routes 2, 21, 16A, & 16B

Route 2



- 64% on-time departures from all timepoints
- 12% late arrivals to Durham Station
 - Late is > 5 min past schedule

59

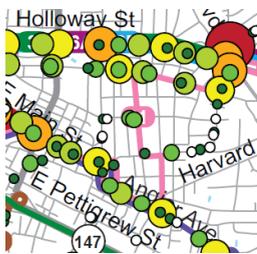
Recommendation – Route 2 & 21



- 83% of customers board between Durham Station and Angier/Briggs
- Route 2 serves Page Rd Ext
- Route 21 serves NECD (Driver St, Liberty St, Gary St, The Village)
- Route 2 & 21 uses Pettigrew St instead of Chapel Hill St

60

Ridership – Route 21



- All Stops in NECD are within a quarter mile to Route 21

AVERAGE DAILY BOARDINGS (AUG-DEC 2011)



PROPOSED DAYTIME SERVICE (MON-SAT)

RT	ROUTE NAME
21	East Durham and Highway 70
21	Angier Avenue and The Village

61

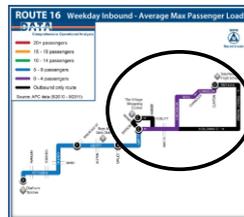
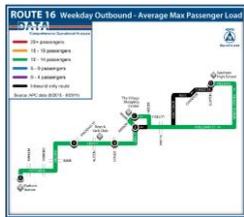
Recommendation – Route 2



- Night and Sunday
- Same as daytime Route 2

62

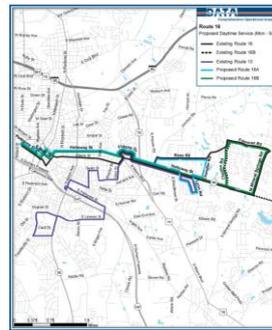
Route 16



- 78% on-time departures from all timepoints
- 23% late arrivals to Durham Station
 - Late is > 5 min past schedule

63

Recommendation – Route 16A/16B



- Mon-Sat until 7pm
- Provide 15 min service via Holloway St to the Village along with Route 3
- Route 16A serves Mineral Springs and Freeman Rd
 - 30 min service to Southern HS in Scenario 3 on Route 16A
- Route 16B serves Birchwood and Ross Rd
- Pedestrian improvements in Scenario 3

Stop Locations	Daily Customers
Birchwood Community	20
Ross Rd and Junction Rd	54
Mineral Springs, Freeman	140

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Ridership

AVERAGE DAILY BOARDINGS (AUG-DEC 2011)



PROPOSED DAYTIME SERVICE (MON-SAT)

RT	ROUTE NAME
16	The Village and Southern High School
16	Holloway Street and Bridgeline Avenue

65

Recommendation – Route 16



- Night and Sunday
- Route 16 serves portions of the Route 16A, 16B, and 21
- Transfer to get downtown to:
 - Route 3 at The Village
 - Route 2 on Angier Ave

66

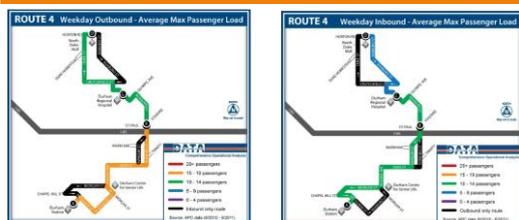
Benefits and Trade-offs

- Benefits
 - One seat ride to downtown from NECD
 - Better on time performance for current Route 13 customers
 - 15 min service from Durham Station to the Village via Holloway St
 - Continued service to Birchwood, Ross Rd, and Junction
- Trade-offs
 - Liberty St vs. Holloway St
 - Route 13 customers riding from Birchwood or the Village will ride to Durham Station to transfer to Route 7, 8, or 12
 - 60 min service to Hwy 70 and Angier Ave on Route 2
 - Different routing at night and Sundays

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Route 4

Route 4



- 79% on-time departures from all timepoints
- 6% late arrivals to Durham Station
 - Late is > 5 min past schedule

69

Recommendation – Route 4



- Re-route to serve Chapel Hill St
 - Now served by Route 2
- 15 min service in Scenario 3

Bus Stop	Daily Customers
Chapel Hill St at Five Points	10
Chapel Hill St at Post Office	8

70

Benefits and Trade-offs

- Benefits
 - Continue to serve downtown with a DATA route
- Trade-offs
 - None

71

Route 15

Route 15

- 55% on-time departures from all timepoints
- 20% late arrivals to Durham Station
 - ▣ Late is > 5 min past schedule

Passenger Load - Outbound Direction

Durham Station - TW Alexander/Miami	TW Alexander/Miami - Brier Creek Walmart
9	9

Passenger Load - Inbound Direction

Brier Creek Walmart - TW Alexander/Miami	TW Alexander/Miami - Durham Station
4	5

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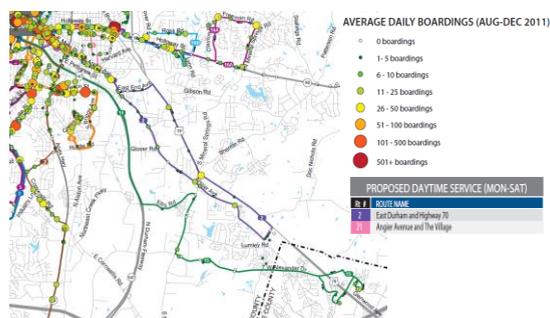
Recommendation – Route 15



- Route 2 will serve Page Rd Ext
- Serve WakeMed – Brier Creek facility opened in Jan 2012
- 9 trips a day Mon-Sat
 - ▣ Additional trips to be added in Summer 2013

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Ridership



75

Benefits and Trade-offs

- Benefits
 - ▣ All stops will continue to be served
 - ▣ Additional trips added in Summer 2013 to make this a consistent, hourly service
 - ▣ Better on-time performance
- Trade-offs
 - ▣ None

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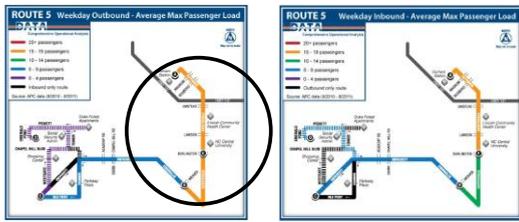
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ROUTE 5, 7, 8, 10, 10T, 12,
 20, 41

Group 3

Routes 5 & 7

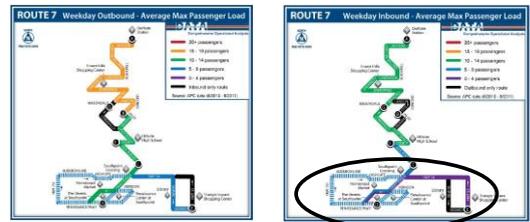
Route 5



- 72% on-time departures from all timepoints
- 2% late arrivals to Durham Station
 - Late is > 5 min past schedule

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Route 7



- 67% on-time departures from all timepoints
- 7% late arrivals to Durham Station
 - Late is > 5 min past schedule

80

Recommendation – Route 7



- Northern portion of current Route 8 & 5
- Direct to Southpoint via Fayetteville St
- Separate southern portion into a new east-west route (Route 41)
 - 90% of current Route 7 ridership still covered on Route 7
- Transfers at Southpoint Mall
- 15 min service to NCCU in Scenario 2 & 3

81

Recommendation – Route 5



- Northern portion of current Route 7
- 30 min service to Walmart and MLK Pkwy
- No service on Cook Rd
- No crosstown connection

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Ridership

AVERAGE DAILY BOARDINGS (AUG-DEC 2011)

- 0 boardings
- 1 - 5 boardings
- 6 - 10 boardings
- 11 - 25 boardings
- 26 - 50 boardings
- 51 - 100 boardings
- 101 - 500 boardings
- 501+ boardings

PROPOSED DAYTIME SERVICE (MON-SAT)

- East Durham and Highway 70
- Alger Avenue and The Village



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Benefits and Trade-offs

- Benefits
 - More direct, faster service to Southpoint Mall (connecting NCCU)
 - 30 min service to MLK Walmart
 - Better service to Hillside H.S.
 - Connects to Jordan H.S. from east
- Trade-offs
 - Remove service in low usage areas
 - Cook Rd, Cornwallis, University Dr

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Benefits and Trade-offs

- Cook Rd vs. MLK Pkwy
- Continue to serve majority of Cook Rd customers on MLK Pkwy and Fayetteville Rd

Stop Location	Daily Customers
Cook Rd & MLK Pkwy	94
Cook Rd & Fayetteville Rd	67

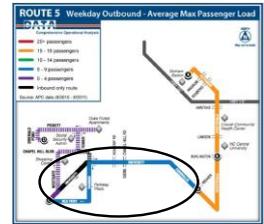
- More customers use stops on MLK Pkwy vs. Cook Rd

Stop Location	Daily Customers
Cook Rd more than 1/4 mile to MLK or Fayetteville	23
MLK Pkwy between Fayetteville and Cook	63

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Benefits and Trade-offs

- 30 min service to MLK Walmart vs. crosstown service from Fayetteville St to University Dr
- 5-9 passengers a trip use the crosstown service
- Difficult to estimate percentage that board at Durham Station vs. Fayetteville St
- Limited stop usage at Cornwallis and University stops that will no longer be served (25 customers)



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Route 12 & 41

Route 12

- 46% on-time departures from all timepoints
- 39% late arrivals to Durham Station
- Late is > 5 min past schedule

Passenger Load - Outbound Direction

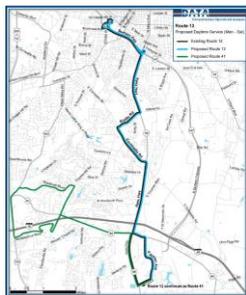
Durham Station - Alston/Cecil	Alston/NCCU - NC54/NC55	NC54/NC55 - NC55/Sedwick
21	27	19

Passenger Load - Inbound Direction

NC55/Sedwick - NC55/Cornwallis	NC55/Cornwallis - Alston/Lawson	Alston/Lawson - Durham Station
8	15	14

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Recommendation – Route 12



- Connect with Route 41
- At Falls Pointe Apartments, headsign changes to Route 41
- Bi-directional service on S. Alston Ave and NC 55 between NC 54 & TW Alexander

89

Recommendation – Route 12



- Night and Sundays
- No on time performance issues

90

Recommendation – Route 41



- Reduced to hourly service
 - 10% of current Route 7 ridership
- Connected to Route 12 Mon-Sat until 7pm
- Helps to address on-time performance on Route 12
- One seat ride to downtown
- No service to Parkwood

Stop Location	Daily Customers	Percent of Route 7 daily customers
Parkwood	17	1%
NCS4 & NCS5	98	5%

91

Recommendation – Route 41



- Night and Sunday
- No service to Woodcroft
 - Route 7 serves the Woodcroft Shopping Ctr from NC 54
 - Connected to Route 7

92

Ridership



93

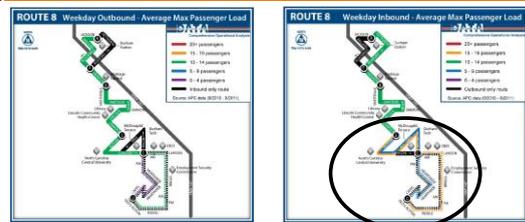
Benefits and Trade-offs

- Benefits
 - Better on-time performance
 - Bi-directional service along NC 54/NC 55
- Trade-offs
 - Night and Sunday have different routing
 - Route 41 connected to different routes during daytime vs. night and Sunday
 - Remove service in low usage areas
 - Cook Rd, Cornwallis, University Dr

94

Route 8

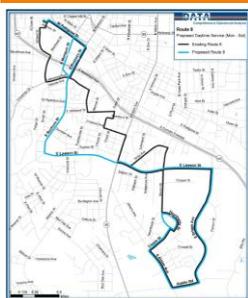
Route 8



- 70% on-time departures from all timepoints
- 5% late arrivals to Durham Station
 - Late is > 5 min past schedule

95

Recommendation – Route 8



- Serve Southside on South Roxboro St
- More direct route to NCCU and Durham Tech
- Bi-directional service to Durham Tech

Stop Location	Daily Customers
Umstead-Grant-Simmons	13
Sima (daytime only)	30

97

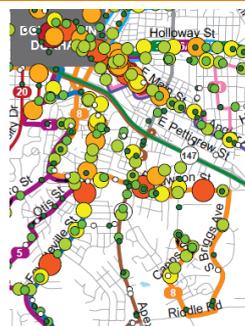
Recommendation – Route 8



- Night and Sunday
- Serve Sima/Bacon due to safety concerns

98

Ridership



AVERAGE DAILY BOARDINGS (AUG-DEC 2011)

- 0 boardings
- 1-5 boardings
- 6-10 boardings
- 11-25 boardings
- 26-50 boardings
- 51-100 boardings
- 101-500 boardings
- 501+ boardings

PROPOSED DAYTIME SERVICE (MON-SAT)
 R-4 ROUTE NAME
 Lawson Street and Durham Technical Community College

99

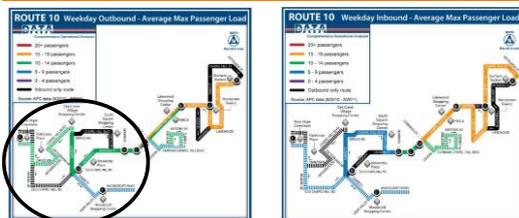
Benefits and Trade-offs

- Benefits
 - More direct, faster service to educational opportunities at NCCU and Durham Tech
 - Bidirectional service to Durham Tech all day
- Trade-offs
 - Customers using bus stops on Umstead, Linwood, and Grant can access bus stops on Fayetteville St or Alston Ave
 - 30 customers/day in McDougald Terrace on Sima and Bacon can access stops on Lawson St

100

Routes 10 & 20

Route 10



- 68% on-time departures from all timepoints
- 13% late arrivals to Durham Station
 - Late is > 5 min past schedule

102

Recommendation – Route 10 & 10T



- Streamlined route
- 30 min service to New Hope Commons
- Bi-directional service to Garrett (15-501 to Old Chapel Hill Rd) and University
- 10T – Jordan tripper during school start and end times
 - Replaced by Route 52 in Scenario 2 & 3

Stop Location	Daily Boardings	Daily Alightings
Garrett Rd (15-501 to Old Chapel Hill Rd)	134	112
University Dr	11	27
Githens MS	7	10

103

Recommendation – Route 10 & 10T



- Night, Sat, & Sun
- Weekdays before 8am
- Serve James and Nation area

104

Recommendation – Route 20



- Weekdays 8am-7pm
- Route 10 serves James/Nation when Route 20 does not run
- Shannon Rd to access post office, library, and apartments
- Tower Blvd for social security office
- Also serves Westgate Dr, MLK Pkwy, University
- Sat and Sun service in Scenario 3

105

Ridership



- AVERAGE DAILY BOARDINGS (AUG-DEC 2011)
- 0 boardings
 - 1-5 boardings
 - 6-10 boardings
 - 11-25 boardings
 - 26-50 boardings
 - 51-100 boardings
 - 101-500 boardings
 - 501+ boardings

PROPOSED DAYTIME SERVICE (MON-SAT)

Rt #	ROUTE NAME
10	University Drive and New Hope Commons
10T	Jordan High School Tripper
20	University Drive and Pocket Road

106

Benefits and Trade-offs

- Benefits
 - Frequent and direct service to New Hope Commons
 - Bi-directional service to Garrett (15-501 to Old Chapel Hill Rd) and University
 - 10T serves Jordan HS with a transfer from Route 10 at South Square during school hours
- Trade-offs
 - Woodcroft served by Route 41
 - Access to Jordan HS requires a transfer

107

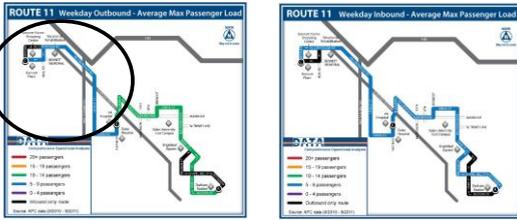


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ROUTE 6A, 6B, 11

Group 4

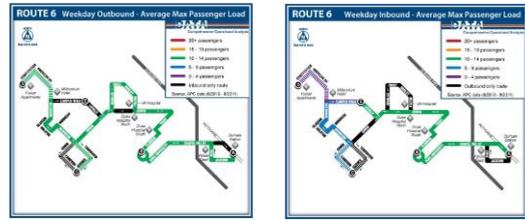
Route 11



- 42% on-time departures from all timepoints
- 48% late arrivals to Durham Station
 - Late is > 5 min past schedule

109

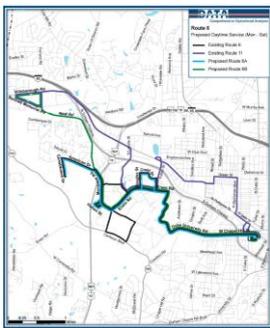
Route 6



- 73% on-time departures from all timepoints
- 12% late arrivals to Durham Station
 - Late is > 5 min past schedule

110

Recommendation – Route 6A/6B



- Sparger Rd at Hillsborough Rd on Route 6B once an hour
- Stops on Campus Walk are within 1/4 mile to Morreene or Lasalle
- Crest St served once an hour on Route 6A

111

Recommendation – Route 11



- Shorten route at Hillsborough Rd on Neal Rd

112

Recommendation – Route 6



- Night and Sunday

113

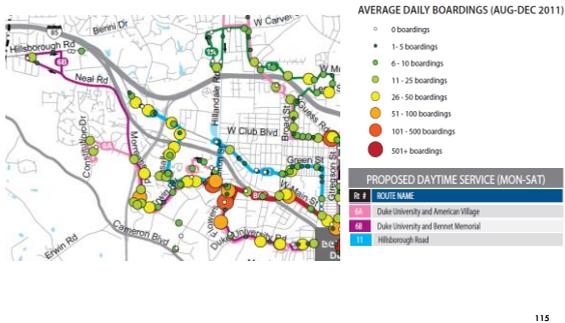
Recommendation – Route 11



- Night and Sunday

114

Ridership



115

Benefits and Trade-offs

- Benefits
 - Better on time performance for Route 11
 - Residents of Morreene Rd Apartments can access a grocery store on Route 6B
- Trade-offs
 - 60 min service to Sparger Rd & Crest St
 - No DATA service to Science Dr

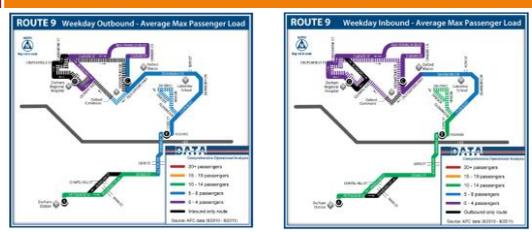
116



ROUTE 9A, 9B, 17

Group 5

Route 9



- 70% on-time departures from all timepoints
- 5% late arrivals to Durham Station
 - Late is > 5 min past schedule

118

Route 17

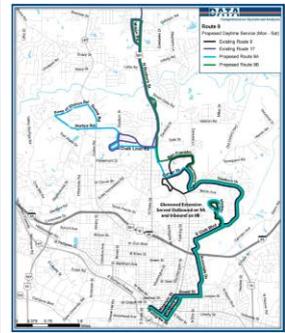
Table 3-5: Ranked Passengers per Revenue Hour (PPH) by Day Type

Rank	Weekday		Saturday		Sunday		Holiday	
	Route	PPH	Route	PPH	Route	PPH	Route	PPH
1	3	53.71	3	46.17	3	45.86	3	49.72
2	1	45.62	1	40.42	1	33.43	4	47.51
3	4	45.31	4	29.83	4	32.47	1	38.15
4	16	39.44	16	27.48	6	31.47	6	33.94
5	8	38.94	5	25.34	5	27.05	9	30.13
6	5	38.05	2	25.01	2	26.19	5	24.17
7	6	36.24	12	24.58	9	25.93	16	23.53
8	2	33.52	10	24.49	16	22.33	10	22.56
9	10	32.57	7	23.01	11	21.44	7	22.36
10	12	32.03	11	21.22	10	20.35	11	20.94
11	11	28.51	6	20.97	7	20.33	8	20.92
12	7	25.98	8	20.94	12	19.53	12	19.62
13	9	25.91	9	19.38	8	19.29	2	17.31
14	BCC	24.67	BCC	18.02	-	8.68	13	8.95
15	17	16.38	12	12.64	17	7.39	17	8.06
16	13	16.31	17	11.36	15	-	15	-
17	15	10.83	15	7.51	12B*	-	12B*	-
18	12B*	4.61	12B*	-	16B	-	16B	-
19	16B	4.01	16B	-	BCC	-	BCC	**

* Route 12B was incorporated with route 12 beginning with the August 16, 2011 service period.
 ** Revenue hours unavailable for BCC for holiday service.

119

Recommendation – Route 9A/9B



- No stops on Snow Hill Rd
- Allow transfers between Route 9A and Route 1
- Serve Riverside HS
- Hourly service on Carver and Ben Franklin Blvd
- No service to Durham Regional Hospital
 - Served by Route 4

Stop Location	Daily Customers
N. Roxboro & Snow Hill Rd	16
Durham Regional Hospital	61

120

Recommendation – Route 9A/9B



- Night and Sunday
- No service to Riverside or Northern
- Serve Foxfire and Seven Oaks/JFK Towers
- Glenbrook/Bluefield community (off of E. Club Blvd) served on outbound trip only

121

Ridership



AVERAGE DAILY BOARDINGS (AUG-DEC 2011)

- 0 boardings
- 1-5 boardings
- 6-10 boardings
- 11-25 boardings
- 26-50 boardings
- 51-100 boardings
- 101-500 boardings
- 501+ boardings

PROPOSED DAYTIME SERVICE (MON-SAT)

ROUTE NAME
9A Dearborn Drive and Horton Road/Riverside High School
9B Dearborn Drive and JFK Towers/Northern High School

122

Benefits and Trade-offs

- Benefits
 - Serve Riverside HS & Northern HS
 - Better service to Glenbrook/Bluefield community (off of E. Club Blvd)
- Trade-offs
 - No service to Durham Tech Northern campus
 - No service to Durham Regional Hospital

123



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SCENARIO 2

Key Outcomes – Scenario 2

- 15 min service to NCCU via Fayetteville St
- 15 min peak service on TTA Route 405 with additional Saturday and Sunday service
- New commuter routes
 - Southpoint Mall-Duke (Route 52)
 - Durham Regional Hospital-Duke (Route 30)
 - Rougemont-Duke-Durham (Route 50)
- Park-and-Ride construction
 - Rougemont in Northern Durham County
 - Durham Regional Hospital area
 - Southpoint Mall area

125

Recommendation – Route 52

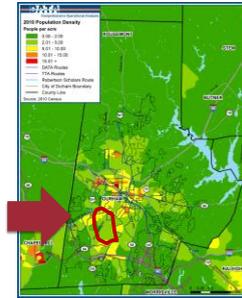


- 30 min service to Duke during peak periods only
- Serves
 - Southpoint Mall
 - University Dr
 - Shannon Rd
 - Duke Hospital/VA Hospital
- Connected to Route 30
- New park-and-ride near Southpoint Mall by Year 3

126

Recommendation – Route 52

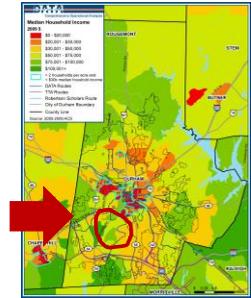
- Why not serve S. Roxboro between Hope Valley Rd and MLK Pkwy?
 - Timing
 - Coordination with Triangle Transit Route 405
 - Population density



127

Recommendation – Route 52

- Why not serve S. Roxboro between Hope Valley Rd and MLK Pkwy?
 - Income



128

Recommendation – Route 30



- 30 min service to Duke during peak periods only
- Serves
 - Durham County Stadium/Durham Regional Hospital
 - Hillandale Rd
 - Duke Hospital/VA Hospital
- Connected to Route 52
- New park-and-ride near Durham County Stadium by Year 3

129

Recommendation – Route 50



- Hourly service during peak periods only
- Serves
 - Rougemont
 - Durham County Stadium/Durham Regional Hospital
 - Duke Hospital/VA Hospital
 - Durham Station
- New park-and-ride in Rougemont in Years 1 & 2
- Service starts in Year 3

130



SCENARIO 3

Safety

- The draft plan will:
 - Improve safety at 200 bus stops
 - Improve safety getting to and from bus stops along three corridors
 - Install sidewalks and bus stop shelters along the three most heavily travelled transit corridors – Holloway/Liberty Streets, Fayetteville Street, and North Roxboro Street
 - Improve overcrowding issues at 4 neighborhood transit centers

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Fiscal Responsibility

Frequent Bus Network

- Duke Medical Center (Bull City Connector)
- The Village (Route 3/16)
- NCCU (Route 5)
- Northgate Mall (Route 1)
- Durham Tech (Route 8)
- Durham Regional Hospital (Route 4)
- Chapel Hill-Durham (Route 405)



Community Benefits

Access to NCCU and Durham Tech

- Fayetteville St (Route 5)
- Lawson St (Route 8)
- Alston Ave (Route 12)
- Lawson St & Alston Ave (Triangle Transit Route 700)



Community Benefits

Access to Duke/VA Medical Centers

- From Durham Regional Hospital/Durham County Stadium
- From Southpoint/South Square
- From Rougemont to Duke and Downtown
- From Mebane/Hillsborough to Duke and Downtown
- From Chapel Hill (Route 405)
- From Raleigh (DRX)



Community Benefits

Expanded Service Hours

- Extend Sunday hours to 9pm on DATA
- Extend Saturday service until 11pm for Triangle Transit
- New Sunday service on Triangle Transit routes
- Sunday service to Brier Creek (Route 15)



136

Community Benefits

- New or Expanded Park-and-Ride Lots
 - Rougemont
 - North Roxboro Rd near Latta Road
 - Southpoint area
 - Durham County Stadium area
 - Patterson Place area
 - Woodcroft area

137

IMPLEMENTATION

Implementation – Scenario 1

- Assuming City Council approval on June 18, scenario 1 changes can be implemented in:
 - Oct 2012
 - Group 1: Routes 1A, 1B, 3
 - Group 4: Routes 6A, 6B, 11
 - Jan 2013
 - Group 2: Routes 2, 21, 4, 13, 15, 16A, 16B, BCC
 - Group 3: Routes 5, 7, 8, 10, 10T, 12, 20, 41
 - Group 5: Routes 9A, 9B, 17
 - Summer 2013
 - Route 15 additional trips

139

Implementation – Scenario 2 & 3

- Requires action by County to levy fees
- First changes can occur after 6-12 months
- 3-year implementation

140

Next Steps

- Public comments accepted on Draft Plan until April 16
- Staff will update plan based on comments received
- Final Plan completed by Mid-May
- Final Plan presented at June 18th City Council meeting for approval

141

THANK YOU!