

TRANSPORTATION NEED AND DEMAND IN THE MONADNOCK REGION

Monadnock Region Coordinating Council for Community Transportation

September 28, 2016, 1:00 p.m.

37 Ashuelot Street, Keene, NH

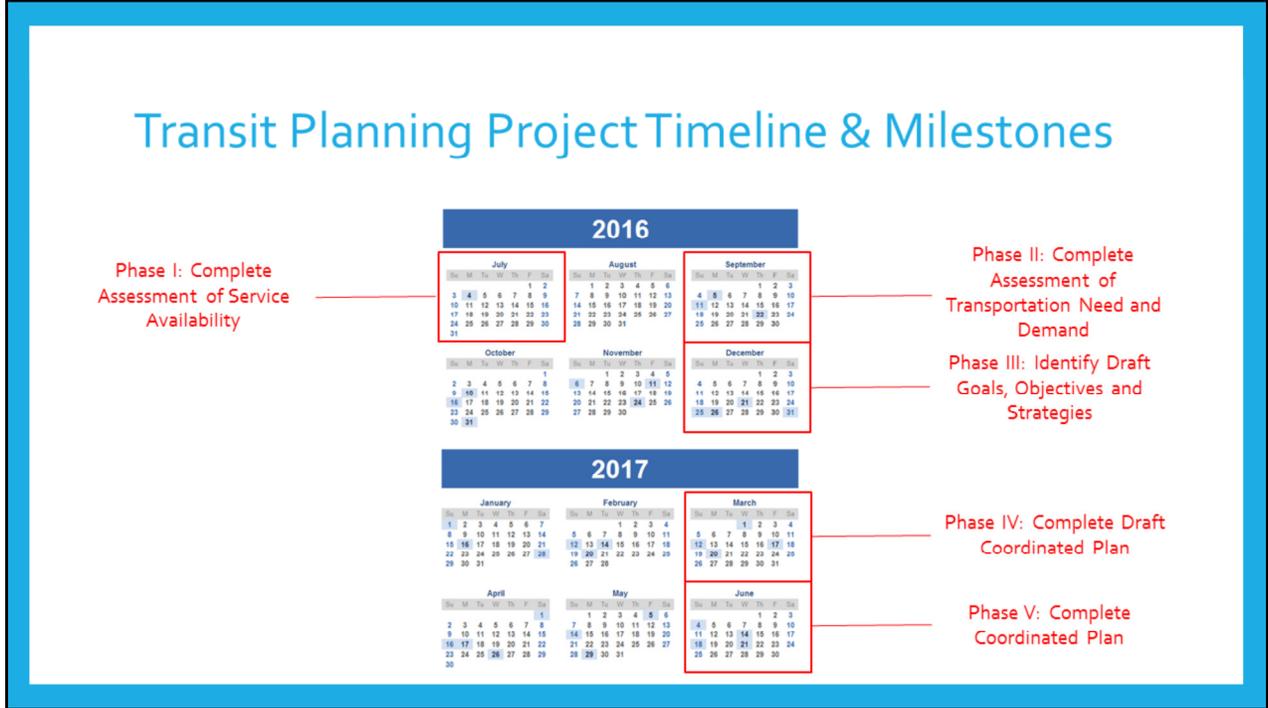
- Welcome to the September 28th meeting of the Monadnock Region Coordinating Council for Community Transportation
- Today we have prepared a special presentation that provides data and information about transportation need and demand in the Monadnock Region
- Its important for our council to continually assess transportation need and demand, which we have done for several years. This is an update to our assessment of transportation need and demand.
- This presentation summarizes some of the traditional census data that we have used to guide the MRCC planning around transportation need.
- In addition it incorporates new data and uses some new research tools to try and understand transportation demand in the Monadnock Region.

Presentation Outline

- Summary of FTA 5305(e) Transit Planning Project & Milestones (J. B.)
- Profile of Community Transportation Services/Phase I (J. B.)
- Profile of Transit Vulnerable Populations/Phase II (J. B.)
- Analysis of 5310 Purchase of Service Data/Phase II (Raul)
- Geographic Analysis of 5310 Purchase of Service Data/Phase II (Henry)
- Q & A and Discussion

- The time that SWRPC staff has spent gathering and analyzing data and conducting research was paid through a Federal Transit Administration (FTA) planning grant, called a FTA 5305(e) grant.
- I'll start the presentation by briefly talking about the five phases and milestones associated with the FTA grant.
- Next I want to present information that was collected and organized for Phase I of the grant, which looked at updating our database on existing community transportation services.
- The remainder and bulk of the presentation will focus on Phase II of the grant, which looked at data to understand our Transit Vulnerable Populations and Analyzed 5310 trip data from three of our MRCC partners.
- We'll leave some time for a Q & A and discussion at the end of the presentation, but feel free to interrupt us if you need clarification on any of our slides.

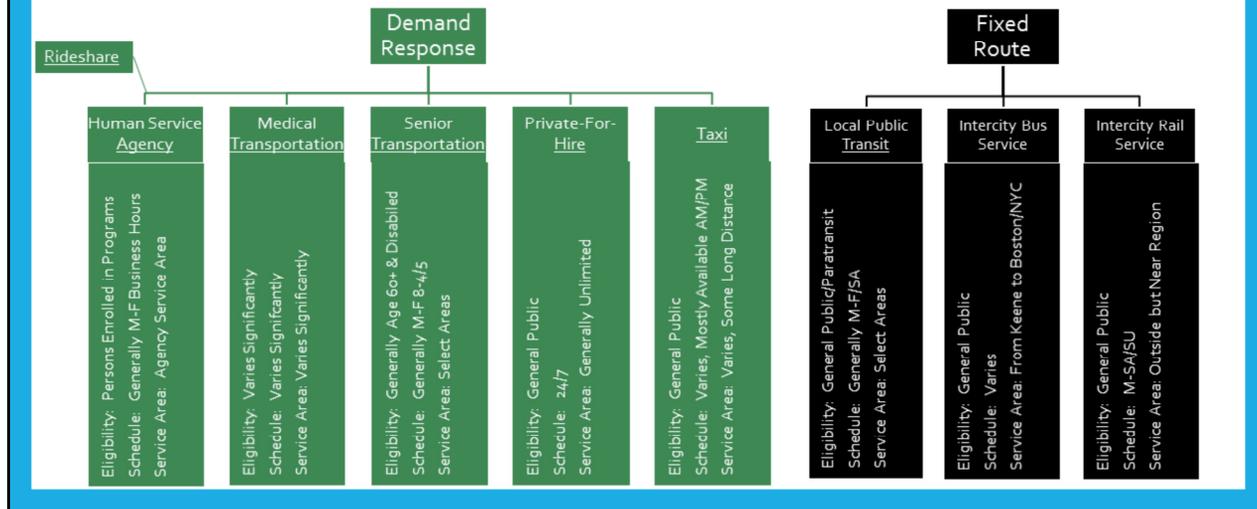
Transit Planning Project Timeline & Milestones



- As I said there were five phases associated with the FTA grant. The work in this document is all driven by the MRCC coming to the conclusion that it was time to perform a comprehensive overhaul of our coordinated plan. Its good timing and good follow up to our efforts over the last several months which were spent developing a new mission and vision statement and starting to think more strategically about how to use FTA 5310 funds that are allocated by the State.
- Phase I consisted of inventorying community transportation services in the region. That work was essentially completed in July earlier this year. The Community Transportation Directory was a deliverable associated with that Phase.
- We are wrapping up Phase II right now which is an assessment of transportation need and demand in the region.
- By the end of December, it is our hope that we can work with the MRCC to identify draft goals, objectives, and strategies.
- By the end of March, we hope to complete a Coordinated Plan. The plan would summarize all the information that we have previously collected. One of the things that this plan should probably take a look at is developing a list of project ideas. A number of grants become available each year, and we haven't been organized enough to take advantage of this. Imagine a list of projects ready to come off the shelf and be written in a proposal, with a clear purpose, documented need and potential partners already expressing interest in the project.

- By the end of the fiscal year, it is our goal to complete a new Coordinated Plan for the Monadnock Region.

Phase I: Assessment of Service Availability



- Our inventory of services categorized transportation services into two categories: demand response transportation and fixed route transportation.
- Thirty-three different services were identified as part of the inventory.
- When assessing services in the region, SWRPC staff updated our inventory of services by including contact information, the kinds of services they offer, if there are any restrictions on eligibility to use the transportation, the service area, days and hours of operation, whether advance notice is required and whether the operation has wheelchair or bicycle storage accommodations.
- This chart shows the various subcategories of transportation that were identified along with general findings about service eligibility, schedules and service areas.
- Generally speaking, human service agency, medical and senior transportation are demand response services that have more restrictions on eligibility, but are more affordable for riders. Their schedules tend to follow M-F 8-5 schedules and service areas vary considerably.
- Private-for-hire services and taxis do not restrict eligibility and have more flexibility in schedules and service areas, but we also know that these services are more expensive and less sustainable for riders with fixed incomes, especially if used on a regular basis.
- There are three fixed route services currently operating in our region in Keene, Hinsdale and Walpole. None of these have eligibility restrictions. However, the nature of a fixed route operation is that it operates along a route so it only serves select areas. None of

these services provide services on Sunday, Hinsdale does offer Saturday services.

- To catch an intercity bus you can catch it in our region in Keene, or else you need to catch it outside of our region—the nearest stations are in Brattleboro, Bellows Falls, Nashua and Concord. Boston and NYC are common final destinations.
- Amtrak Vermonter services are available out of Bellows Falls and Brattleboro.

Phase I: Assessment of Service Availability

Rides (July 2015-June 2016)

• City Express/Campus Shuttle/Para Express	35,595
• Friendly Bus	9,199
• Hinsdale Blue Line/Para Transit	17,605*
• Walpole/Bellows Falls Route	2,019*
• American Red Cross Purchase of Service	2,990
• CVTC Purchase of Service	2,171
• HCS Purchase of Service	808
• SNHS Greenville Falls Van	686*
SUBTOTAL	71,073*
OTHER (Private, Human Service, Medicaid, Intercity Bus/Rail)	???????

*Includes ridership from outside of the Monadnock Region

- In this slide, I wanted to show you data that we've been able to collect regarding rides given between July 2015 and June 2016 in the Monadnock Region.
- You can see here that HCS' City Express provides at least half of all rides on this list.
- Connecticut River Transit (CRT) provides quite a few rides into Hinsdale, but I'm told by their office that the vast majority of the rides are actually people in Brattleboro going to the Super Walmart in Hinsdale. Similarly, CRT's Walpole/Bellows Falls Route caters almost entirely to Vermont riders.
- This is only a partial view of all the transportation service rides occurring in the region. Private, human service, Medicaid, intercity bus/rail are not included.

NEED: VULNERABLE POPULATIONS

Transportation Need and Demand in Southwest New Hampshire

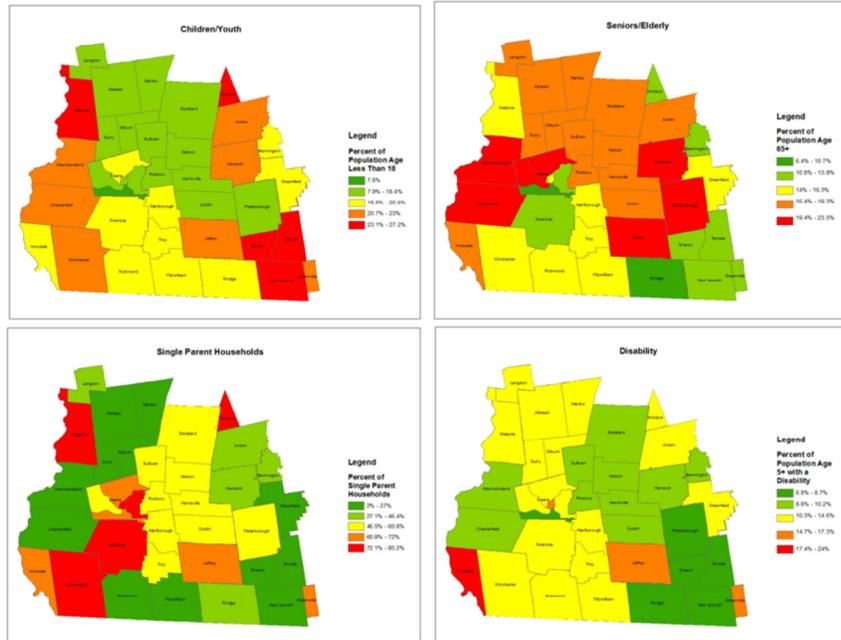
- For the next part of this presentation, I would like to talk about Vulnerable Populations that are likely to have a greater need for community transportation services.

Phase II: Assessment of Transportation Need & Demand

Vulnerable Populations By
Census Tract Level

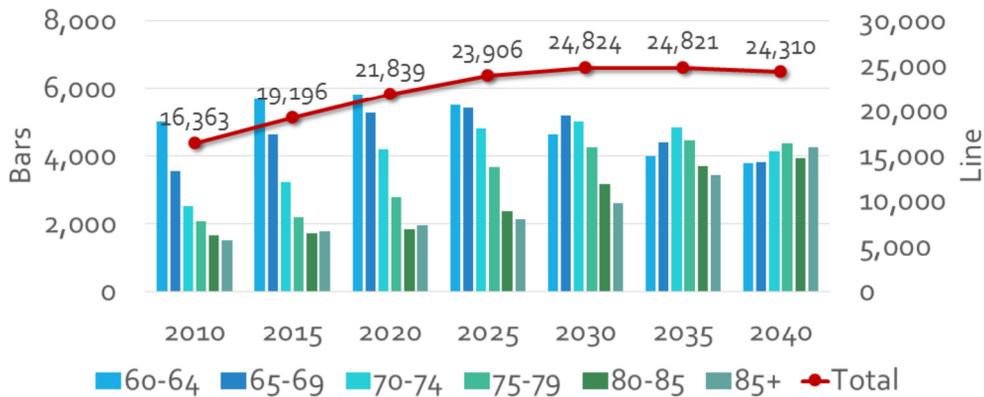
Higher Percentages in Red,
Orange and Yellow Areas

US Bureau of Census
American Community Survey,
2010-2014



- We have made use of Census data to try and understand transportation need in the Region.
- We do this by parsing out certain data to understand where certain vulnerable populations live in our Region.
- This data is a good tool for developing a strategy of where to focus community transportation outreach, or to focus service delivery, however the data is very coarse.
- I'm presenting four maps on this page showing children/youth, seniors/elderly, single parent households and people with an identified disability. Each of the maps presents the percentage of population in a census tract area. Some census tract areas cover more than one town due to the low population densities of those towns. Keene has 5 census track areas.
- You want to focus your attention to the geographical areas that are red first, followed by the orange and then yellow areas.
- On these four maps you see that some towns consistently appear red, orange or yellow: Hinsdale, Winchester, Walpole, Jaffrey, and Swanzey are examples. These are communities with a higher proportion of populations that may need more community transportation services.

Cheshire County Population Projections



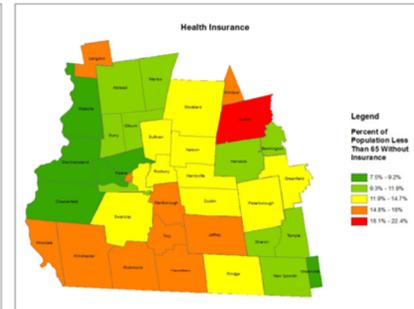
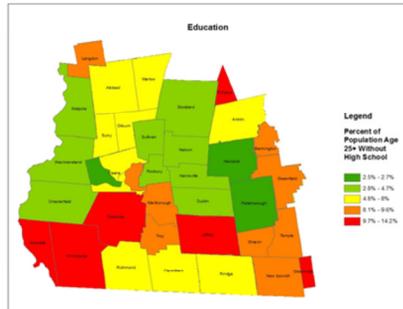
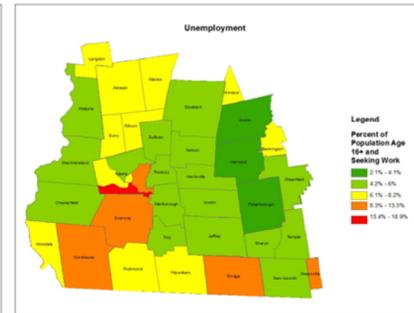
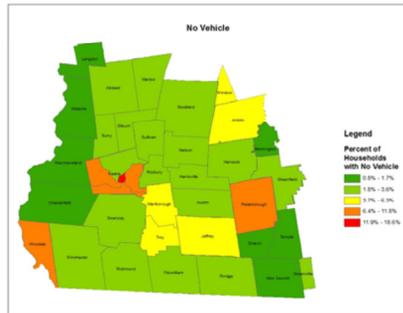
- Here's some more information about how the 60+ population which is expected to increase significantly over the next several decades. Notice how the 75+ age brackets continue to increase over time, suggesting that there will be more and more non-drivers in the Cheshire County. Although this applies to Cheshire County only, this kind of trend is also expected for happen to the Western Hillsborough County communities as well.

Phase II: Assessment of Transportation Need & Demand

Vulnerable Populations By
Census Tract Level

Higher Percentages in Red,
Orange and Yellow Areas

US Bureau of Census
American Community Survey,
2010-2014



- The four maps on this page show the percent of households with no vehicle, unemployment rates, population without HS equivalent diploma and people without health insurance.
- Again some towns consistently appear red, orange or yellow: Hinsdale and Windsor are examples. Some are those shades of colors for 3 out of the 4 maps, parts of Keene, Swanzey, the lower tier of communities in Cheshire County from Winchester to Rindge and Antrim.
- One thing to take stock of is some of the data is skewed by college populations—Keene KSC population probably affects Keene’s vehicle ownership rates.
- These maps and other maps that we have developed should be helpful in developing our new Coordinated Plan. However, this is a fairly course way of understanding need.
- Documenting unmet need through our transportation providers is probably needed in order for us to get a better handle on where need and demand exists and can help us understand how to allocate resources in a more strategic way to address need and demand.
- This is a good Segway to Raul’s portion of the presentation which will dig into some of the ride data by the MRCC’s 5310 POS providers.

DEMAND: PURCHASE OF SERVICE TRIPS AND LOCATIONS

Transportation Need and Demand in Southwest New Hampshire

How transit data was analyzed

- Three agencies, the American Red Cross (ARC), the Contoocook Valley Transportation Company (CVTC), and Home Healthcare Hospice & Community Services (HCS) provided their 5310 Purchase of Service data.
- We analyzed the data for all three agencies during the period of June 9th, 2013 and December 31st, 2015.
- 16,568 trips between the period of 6/9/13 and 12/31/15:
 - 11,830 for ARC
 - 4,458 for CVTC
 - 2,465 for HCS
- 33,274 locations were recorded (more on that later)

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- 16,568 trips between the period of June 9th, 2013 and December 31st, 2015:
 - 11,830 for ARC
 - 4,458 for CVTC
 - 2,465 for HCS
- 33,274 locations were recorded, which I will provide more on that in a few slides.

Types of data collected from transit agencies

Origin Address	Destination Name and/or Address	Pick-up Time	Date	Start Mileage
Origin City	Destination City	Drop-off Time	60+/Disability	End Mileage
Origin State	Destination State	Client Name/ID	Mobility Aid	Total Miles
Origin Zip	Destination Zip	Vehicle ID/ Driver Name	Ride Cancelled?	Notes

- The types of data collected from the transit agencies included Origin and Destination Address, Towns, States, and Zip Codes.
- In addition there was data on Destination Place Name, Pick Up and Drop Off Time and Date, Client and Driver ID, whether the client was 60+ or has a disability, whether they require a mobility aid, if the ride was cancelled, the start mileage, end mileage, total mileage and any notes.
- Unfortunately some data did not overlap between agencies. Other data was missing or could not be deciphered.

Gaps in Data Collection

- Entries were removed where:
 - They did not have a complete address;
 - The address was not found;
 - The address had no street number; and,
 - The entries had the same origin and destination address.
- Some entries were simply place names or cross streets.
- Pick-up and/or drop-off times were not included on some trips.
- Data from certain agencies did not align with other agency data or was absent.

- For this analysis, trip records were removed where:
 - They did not have a complete address;
 - The address was not found;
 - The address had no street number; and,
 - The entries had the same origin and destination address.
 - Pick-up and/or drop-off times were not included on some trips.
- Some entries were simply place names or cross streets. We did our best to associate these entries with an exact address.
- Data from certain agencies did not align with other agency data or was absent.

How the transit data was analyzed

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot	Keene	9:00	60+	None	Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street	Keene	10:15	60+	None	Market Basket	11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd	Swanzey	11:30	60+	None		37 Ashuelot	Keene	

- The following sample of data contains the client id, origin name, if available, origin address, city, pickup time, whether they were 60+ or had a disability, whether they required a mobility aid, the destination name, address, city and any notes regarding the trip. (This also included items such as state, zip code, drop off time, driver ID, and others, but were removed from here for formatting purposes)

How the transit data was analyzed

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot	Keene	9:00	60+	None	Cheshire Medical Center	580 Court St	Keene	
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Client 1	Market Basket	11 W Swanzey Rd	Swanzey	11:30	60+	None		37 Ashuelot	Keene	

- Each row represents a trip, where a client was picked up at the origin address...

How the transit data was analyzed

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street	Keene	10:15	60+	None	Market Basket	11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd	Swanzey	11:30	60+	None		37 Ashuelot	Keene	

- And dropped off at the destination address

How the transit data was analyzed

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd	Swanzey	11:30	60+	None		37 Ashuelot	Keene	

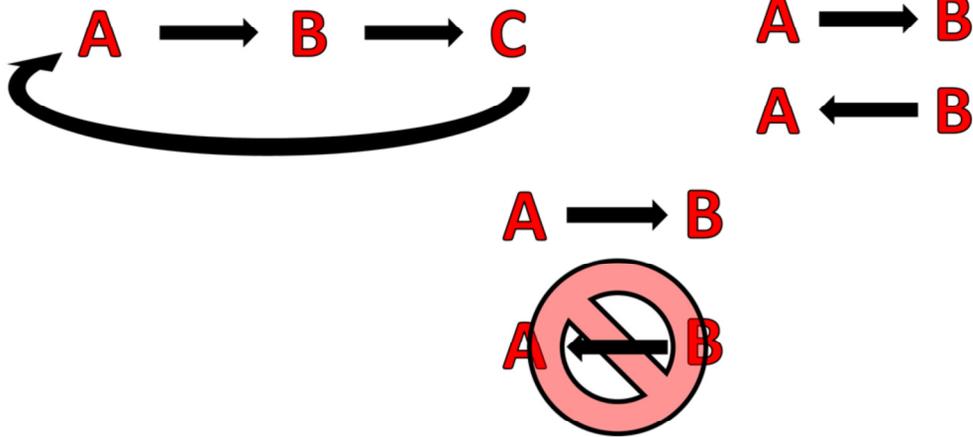
- Another trip is made from Cheshire Medical Center to Market Basket

How the transit data was analyzed

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- And from Market Basket to a sample Home Address.
- As you can probably tell, these three trips are for the same client. In which they went from their residence, to the hospital, from the hospital to the grocery store, and finally from the grocery store to their residence.

Potential completed trips per client



- Which brings us to the what a completed trip may be for a rider. Potential “completed trips” include the example I just provided, where a client is picked up from a residence (A), dropped off at a second location (B), picked up again and dropped off at a third location (C), then picked up again and taken back home.
- This also includes single trips, where a client is picked up at one location and dropped off at another, but does not make a return trip with the transit agency, and the typical back-and-forth trip, which is the most common. Or a combination of these.

Trip data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot	Keene	9:00	60+	None	Cheshire Medical Center	580 Court St	Keene	
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Client 1	Market Basket	11 W Swanzey Rd	Swanzey	11:30	60+	None		37 Ashuelot	Keene	

- What is also noteworthy of our analysis is the difference between trip data

Trip data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- Going from Point A to Point B.

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- And location data.

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- Which are the names and addresses for each location per trip.

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- So when presenting to you our analysis of the location data, you are likely to find double the number of location data than trip data. So with three trips, you'll have...

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- One

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- Two

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- Three

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- Four

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

- Five

Trip data vs. location data

Client Name/ID	Origin Name	Origin Address	Origin City	Pickup Time	60+/ Disability	Mobility Aid	Destination Name	Destination Address	Dest City	Notes:
Client 1		37 Ashuelot					Cheshire Medical Center	580 Court St	Keene	
Client 1	Cheshire Medical Center	580 Court Street						11 W Swanzey Rd	Swanzey	
Client 1	Market Basket	11 W Swanzey Rd						37 Ashuelot	Keene	

Six locations.

LOCATION DATA

Transportation Need and Demand in the Monadnock Region

Most common non-residential locations

Rank	Name	City	State	Zip	PU/DO Locations
1	Monadnock Community Hospital/ Bond Wellness Center	Peterborough	NH	03431	3,244
2	Cheshire Medical Center	Keene	NH	03431	2,339
3	Keene Metro Drug Rehab	Keene	NH	03458	2,153
4	Monadnock Dialysis Center	Keene	NH	03431	1,239
5	Dartmouth Hitchcock Medical Center	Lebanon	NH	03766	1,042
6	VA White River Junction	White River Junction	VT	05001	719
7	Market Basket Swanzey	Swanzey	NH	03446	638
8	VA Keene Outpatient Clinic	Keene	NH	03431	397
9	Contoocook Valley Regional High School	Peterborough	NH	03458	360
10	HCS Keene	Keene	NH	03431	322
11	Monadnock Family Services Peterborough	Peterborough	NH	03458	306
12	Dartmouth Hitchcock Clinic Keene	Keene	NH	03431	283
13	Market Basket Rindge	Rindge	NH	03431	264

Rank	Name	City	State	Zip	PU/DO Locations
14	Monadnock Area Peer Support Agency	Keene	NH	03461	227
15	Performance Health and Fitness	Peterborough	NH	03431	191
16	Hannaford Rindge	Rindge	NH	03458	142
17	Genesis Health Care	Keene	NH	03461	140
18	Shaw's Peterborough	Peterborough	NH	03431	136
19	Concord Hospital	Concord	NH	03458	134
20	Strand Building	Peterborough	NH	03301	120
21	Franklin Pierce University	Rindge	NH	03458	107
22	Hannaford Plaza Keene	Keene	NH	03461	98
23	Jaffrey Family Medicine	Jaffrey	NH	03431	89
24	Monadnock Family Services Keene Emergency Serv.	Keene	NH	03452	86
25	VA Jamaica Plain	Jamaica Plain	MA	03431	85

- The following are the 25 most common non-residential locations.
- Monadnock Community Hospital and the Bond Wellness Center, located right next to one another, are the most unique drop-off and pick-up locations, with 3,244 total (with 1,954 locations being Bond Wellness Center and 1,290 being Monadnock Community Hospital).
- Cheshire Medical Center in Keene comes in second, with over 2,300 unique pick up and drop off points, followed by the Metro Drug Rehab, the Dialysis Center, and Dartmouth Hitchcock in Lebanon rounding up the top 5.

Most common named residential locations

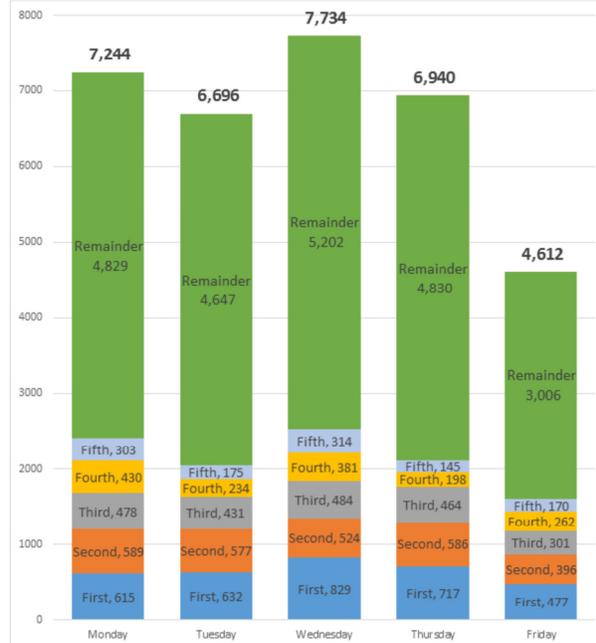
Rank	Name	City	State	Zip	PU/DO Locations
1	Hampshire House	Keene	NH	03431	644
2	Bennett Block Apartments	Keene	NH	03431	589
3	Antrim Village Apartments	Antrim	NH	03440	306
4	Cleveland Building	Keene	NH	03431	302
5	Page Homestead Senior Housing	Swanzey	NH	03446	279
6	Prospect Place Assist. Living	Keene	NH	03431	243
7	Jaffwood Apartments	Jaffrey	NH	03452	185
8	Greenville Falls Elderly Housing	Greenville	NH	03048	155
8	Peterborough Apartments	Peterborough	NH	03458	155
10	Jaffrey Mill	Jaffrey	NH	03452	114
11	Marlboro Street Apartments	Keene	NH	03431	108
11	Rockbrook Apartments	Peterborough	NH	03458	108
13	Payson Village	Rindge	NH	03461	94

Rank	Name	City	State	Zip	PU/DO Locations
14	Gilmore Court Apartments	Jaffrey	NH	03452	90
15	Stone Arch Village	Keene	NH	03431	87
16	Warwick Apts	Winchester	NH	03470	81
17	Good Shepherd Rehabilitation and Nursing Center	Jaffrey	NH	03452	53
17	Eastside Housing	Keene	NH	03431	53
17	Waterview Apartments	Swanzey	NH	03446	53
20	Autumn Leaf Apartments	Keene	NH	03431	48
21	Bently Commons Assisted Living	Keene	NH	03431	40
22	Sunrise Village	Winchester	NH	03470	38
23	Railroad Square Senior Housing	Keene	NH	03431	35
24	Applewood Apartments	Walpole	NH	03608	34
25	Putnam Farm Senior Living	Charlestown	NH	03603	32

- Provided are the most common residential location points.
- You may notice that the number of locations is significantly lower than the nonresidential locations. This is due to the fact that most residential locations are simply single-family dwelling units and/or nameless units.

Most Common Non-Residential Location by Day of the Week

	Monday	Tuesday	Wednesday	Thursday	Friday
1	Market Basket Swanzey	MCH/Bond Wellness Center	MCH/Bond Wellness Center	MCH/Bond Wellness Center	MCH/Bond Wellness Center
2	MCH/Bond Wellness Center	Cheshire Medical Center	VA White River Junction	Cheshire Medical Center	Keene Metro Drug Rehab
3	Keene Metro Drug Rehab	Keene Metro Drug Rehab	Cheshire Medical Center	Keene Metro Drug Rehab	Monadnock Dialysis Center
4	Cheshire Medical Center	Dartmouth Hitchcock Medical Center	Keene Metro Drug Rehab	Dartmouth Hitchcock Medical Center	Cheshire Medical Center
5	Monadnock Dialysis Center	Monadnock Dialysis Center	Monadnock Dialysis Center	Monadnock Dialysis Center	Dartmouth Hitchcock Medical Center

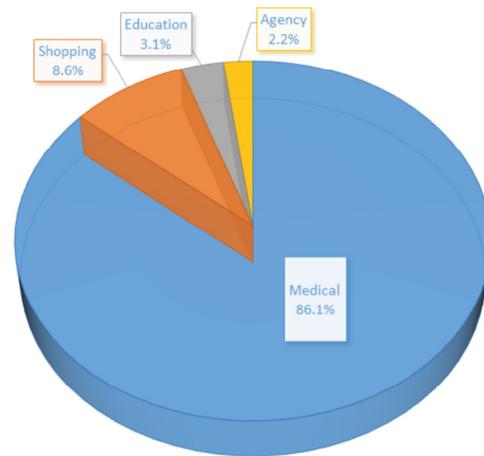


- The most common location for Monday is the Market Basket in Swanzey and for Tuesday through Friday is Monadnock Community Hospital/Bond Wellness Center
- As you can tell, the top five for the most common non-residential locations are represented here, as well as the VA in White River Junction and Market Basket, which are numbers 6 and 7, respectively.
- Only a handful of trips were on Saturday and Sunday (about twenty total) and were not included in this.
- As a reminder, this includes both pick-up and drop off points.

Location Analysis of 5310 Purchase of Service Data

Top 25 Non-Residential Locations by Category

- Categories created by using the Grant Rider Data Tracking Sheet created by Cheshire County
- Categories that were used were: Medical, Education, Agency, and Shopping
- Categories that could not be deciphered were: Work, Social/Family, Personal, and Other



- When we tracked the top 25 Non-Residential Locations by Category we utilized trip purpose categories created by using the Grant Rider Data Tracking Sheet created by Cheshire County
- The categories that were used were: Medical, Education, Agency, and Shopping
- Categories that could not be deciphered were: Work, Social/Family, Personal, and Other
- Also, we took into assumption that certain trips were for only one purpose, and even then, for example, if a rider is going to Market Basket, we assumed that it was for shopping purposes, and not because they worked there.

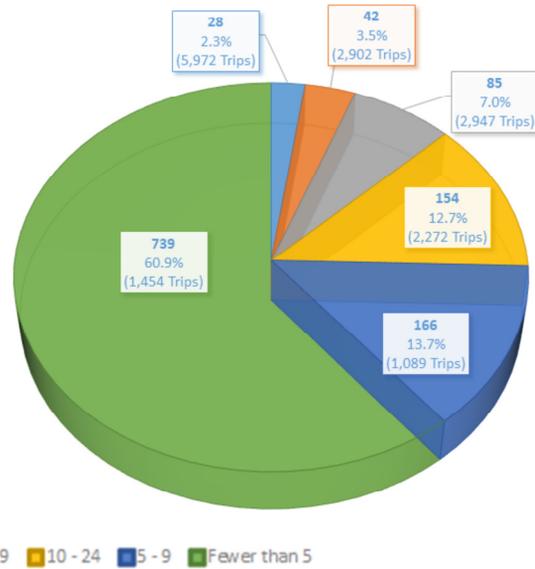
TRIP DATA

Transportation Need and Demand in the Monadnock Region

Trip Analysis of 5310 Purchase of Service Data

Number and Percent of Unique Riders per Trips

- The average number of trips per rider was 13.7, the median, 3 trips
- As you can see from the chart, most riders took fewer than 5 trips
- A little over 12% of riders took more than 25 trips between June 2013 and December 2015
- One ARC client took 617 trips during this time

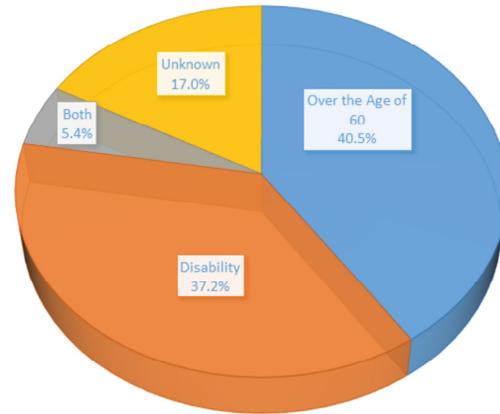


- There were a total of 1,214 unique rider IDs recorded for all three agencies.
- The average number of trips per rider was 13.7, the median, 3 trips.
- As you can see from the chart, most riders took fewer than 5 trips.
- A little over 12% of riders took more than 25 trips between June 2013 and December 2015.
- 28 riders took more trips, 5,972 to be exact, than the combined total of all of the riders that took fewer than 25 trips (4,815). (That's 87.3%).
- One ARC client took 617 trips during this time.

Trip Analysis of 5310 Purchase of Service Data

Description of Transportation Services for Seniors and Persons with Disabilities

- Data received from the agencies was disparate
- Of it, riders over the age of 60 and riders with a disability were fairly close in use of services
- 17% of trips did not have information on riders' POS 60+/Disability

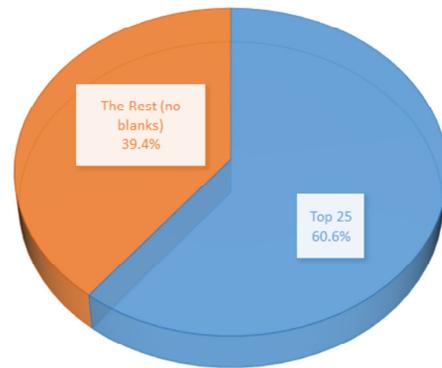


- Data received from the agencies was disparate.
- In the data, riders over the age of 60 and riders with a disability were fairly close in use of services.
- 17% of trips did not have discernable information on riders' POS 60+/Disability

Trip Analysis of 5310 Purchase of Service Data

Most Common Volunteer Drivers

Rank	Vehicle	Total Trips	Rank	Vehicle	Total Trips
1	ARC #1	718	14	CVTC ID# 822	208
2	CVTC ID# 263	707	15	ARC #11	194
3	ARC #2	697	16	ARC #12	188
4	ARC #3	585	17	CVTC ID# 707	183
5	CVTC ID# 1050	575	18	ARC #13	174
6	ARC #4	558	19	ARC #14	169
7	ARC #5	494	20	CVTC ID# 225	167
8	ARC #6	353	21	ARC #15	141
9	ARC #7	337	22	ARC #16	140
10	ARC #8	285	22	CVTC ID# 311	140
11	ARC #9	274	24	CVTC ID# 952	137
12	CVTC ID# 710	230	25	ARC #17	131
13	ARC #10	223	-	Blank or 0	694

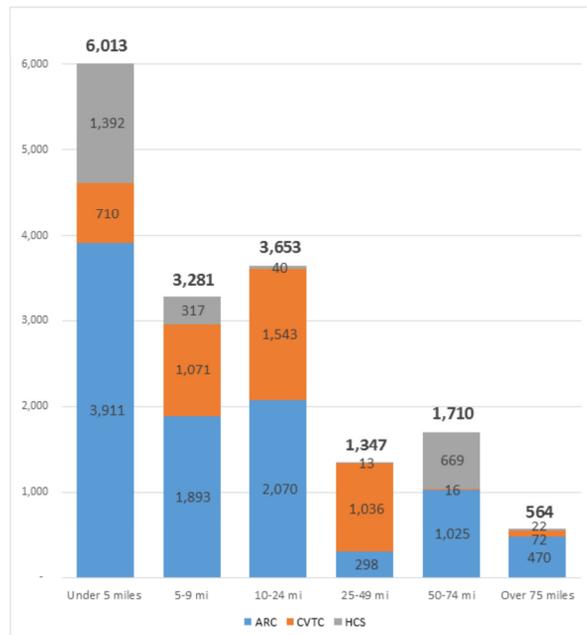


- This data does not include HCS, which does not have volunteer drivers.
- This does not include driver profiles that were blank or had a zero for an Identification Number.
- The average number of trips per volunteer driver was 48, the median, however, was 8.
- There were 274 unique volunteer drivers, not including blanks.
- The Top 25 drivers for both volunteer driver programs provide more rides than all other volunteer drivers combined.

Trip Analysis of 5310 Purchase of Service Data

Distance Per Trip

- Most trips during the time period were under 10 miles
- The average miles per trip were 17.97 miles
- The median miles per trip were 8.24 miles
- Eight trips, all from ARC, were over 100 miles

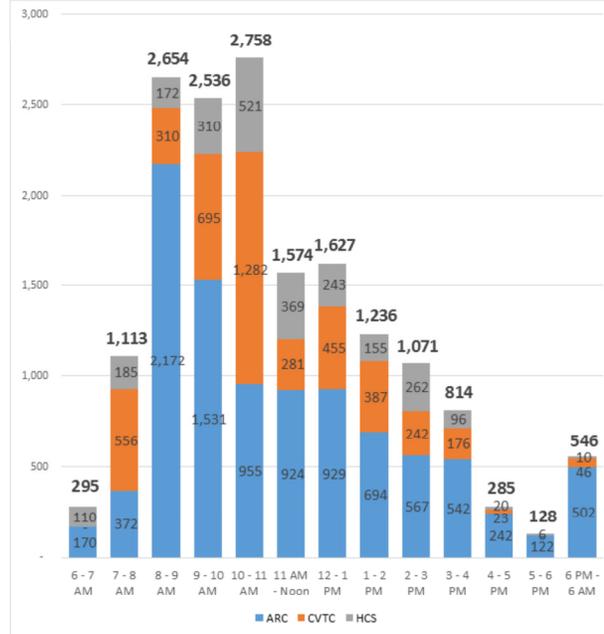


- Please keep in mind this chart shows single trips (from Point A to Point B) and not round trips.
- Most trips during the time period were under 10 miles
- The average miles per trip were 17.97 miles
- The median miles per trip were 8.24 miles
- Eight trips, all from ARC, were over 100 miles. These were from Alstead to Boston.

Trip Analysis of 5310 Purchase of Service Data

Time of Day Clients were Picked Up

- Most riders were picked up between 8 a.m. and noon
- Less than a third of riders were picked up between noon and 6 p.m.
- Only 5% of rides were after 4 p.m.
- The most common pick-up hour was between 8 to 9 a.m. for ARC, 10 to 11 a.m. for CVTC and HCS

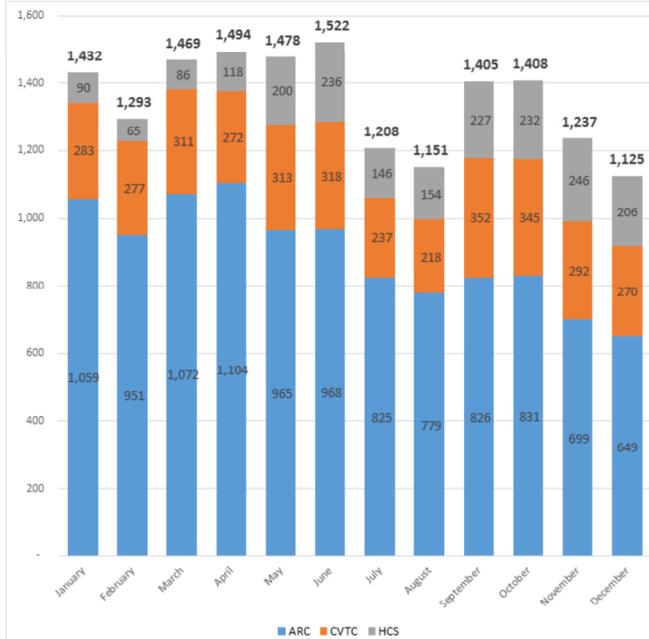


- This chart shows the time of day clients were picked up. It begins at 6 AM and is displayed on an hourly basis up until 6 PM. The last bar is for all hours between 6 PM and 6 AM.
- Most riders were picked up between 8 a.m. and noon
- Less than a third of riders were picked up between noon and 6 p.m.
- Only 5% of rides were after 4 p.m.
- The most common pick-up hour was between 8 to 9 a.m. for ARC, 10 to 11 a.m. for CVTC and HCS.

Trip Analysis of 5310 Purchase of Service Data

Time of Year Trips were Made

- The time period covers calendar years 2014-2015
- The most amount of trips for all agencies was June, with 1,522 total trips
- The difference between the months with the most and the least amount of trips was 397



- The most amount of trips for ARC was April, with 1,104, for CVTC September, with 352, and for HCS, November, with 246.
- For all agencies the busiest month was June, with 1,522 total trips.
- The difference between the months with the most amount of trips, June, and the least amount of trips, December, was 397.

Recommendations for Preventing Further Gaps in Data Collection

- Location data should be presented in a Street Address-Town-State format.
- It should be collected on a “per single trip” basis.
- Including pick-up and drop-off times for every trip would be beneficial.
- A universal categorization of Disability/60+ data and use of mobility aids.
- There should be a cross-agency form of collecting cancelled rides.
- It would be useful if trip purpose was included to differentiate the different drop-off locations.
- It would be helpful if the agency had a mobility aid list and something stating the number of attendants, if any.
- Is there a way the agency documents bundled trips?
- A list of driver vehicles and whether they could accommodate mobility aids would be useful.

- SWRPC has put together a number of recommendations regarding transportation agency data collection that will improve future data analysis if the MRCC wishes to evaluate this kind of information into the future:
 - Location data should be presented in a Street Address-Town-State format. Also, including a separate place name with the address would be helpful.
 - It should be collected on a “per single trip” basis. As mentioned earlier, trips with the same origin and destination had to be removed from the analysis.
 - Including pick-up and drop-off times for every trip would be beneficial.
 - Better categorization of Disability/60+.
 - There should be a cross-agency form of collecting cancelled rides. For example, No shows? Ineligible passengers? Vehicle unavailability (Passengers/Vehicle ratio)?
 - It would be beneficial if trip purpose were included to differentiate the different drop-off locations.
 - It would be helpful if the agency had a mobility aid list and something stating the number of attendants, if any.
 - Is there a way the agency documents bundled trips? That is, trips with more than one client.
 - And if you don’t already, a list of driver vehicles and whether they could accommodate mobility aids would be useful.

DEMAND: AREAS AND PLACES

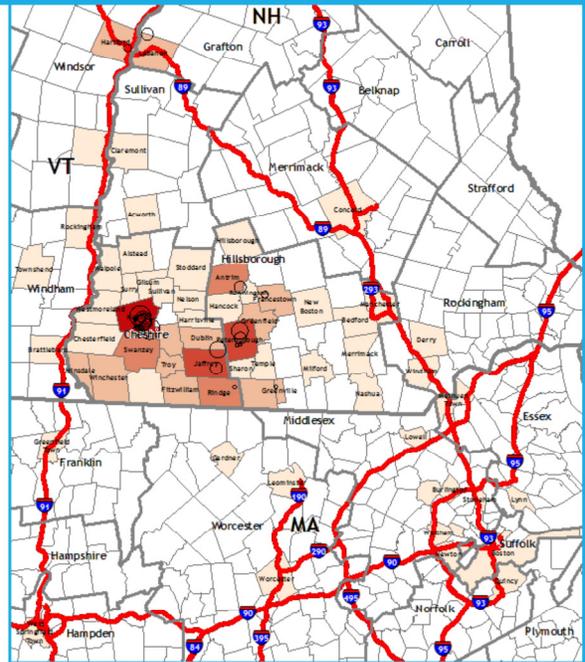
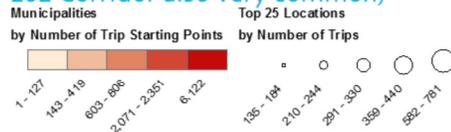
Transportation Need and Demand in Southwest New Hampshire

- Raul spoke about trip data versus location data. The following analysis and visual aid we created by SWRPC utilizing trip data. The demand for trips, as shown on the following maps was determined by using trip origin address information.
- The goal of this mapping exercise was to help answer the questions: “Where are people going?”, “Which agencies serve a particular community?”, “Where are the most common address locations located and how many trips to they generate?”
- To do this, to take address information and translate it to a set of map coordinates, SWRPC utilized a process called geocoding. The address information provided each of the three providers was reviewed, in some cases repaired and supplemented, before being processed by a commercial service designed to accurately find and map each point. This is the basis for the following analysis. I will use the phrase “trips” and “trip origins” interchangeably because these help to provide information about where the highest “trip generators” are.

Geographic Analysis of 5310 Purchase of Service Data

ARC, CVTC, HCS

- 16,568 trips between 6/9/13 and 12/31/15
- Served almost every community in Southwest New Hampshire
- Trips from Keene, Peterborough, and Jaffrey were most common
- Majority of addresses with highest demand in Keene (Upper Valley and US 202 Corridor also very common)



- In this first map, all of the 16,000+ trips are shown by municipality. We can see that the extent of trips forms somewhat of a triangle between major interstate highways, including 91, in Vermont and Massachusetts, 89 and 93 in New Hampshire, and 90, 91, and 93 in Massachusetts. The furthest communities north are Hartford (incl. White River Junction) and Lebanon in New Hampshire. The furthest communities west include Brattleboro, VT, Greenfield, MA, and West Springfield, MA. Major destinations on the eastern side of the dataset include Concord, NH, Manchester, NH, Boston, MA (and surrounding communities). No trips extend beyond this area.
- Almost every community within the MRCC Region had at least one ride (via a trip origin in databases shared by each provider). Marlow (population 744) and Roxbury (population 226) were two exceptions. The other areas outside of the region appear because they were listed as a trip starting point on a return trip.
- Trips from Keene, Peterborough, and Jaffrey were the most common. Keene included 6,135 points, 37% of all trips origins. Peterborough was the second most common trip generator, with 2,408 points, 15% of all trip origins. Jaffrey was the third highest, with 2,072, or 13% of all trip origins. On the map, these three communities appear in the highest two categories in the map legend.
- Hartford (incl. White River Junction) and Lebanon were two areas outside of the region acting as substantial trip generators. Even more significantly, there are no “home addresses” in this area included in the provided data. This is not the case for other

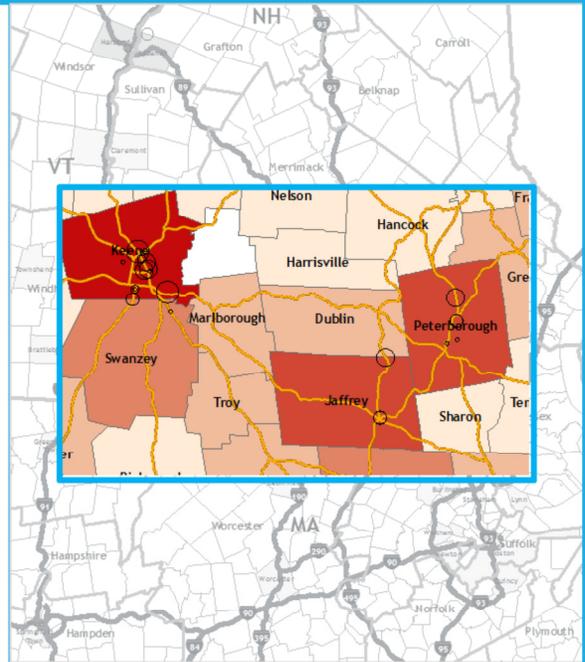
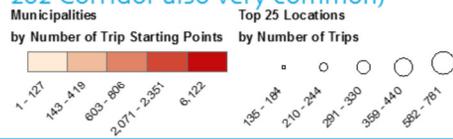
communities in Cheshire County and the eastern portion of Hillsborough County. White River Junction included 333 trips and Lebanon included 419 trips. The majority were associated with the Veterans Hospital in White River Junction and Dartmouth Hitchcock Medical Center in Lebanon.

- There were more out of state addresses in Massachusetts than in Vermont.
- Within the region, communities north of NH 9 were more likely to be in the lower categories, in terms of number of trips. Southern tier communities like Hinsdale, Winchester, Fitzwilliam, Rindge, etc. had larger numbers of trips.
- **The majority of the most common 25 addresses were in Keene and nearly all were in the Monadnock Region. The exceptions are hospitals in the Upper Valley area (White River Junction Veterans Hospital and Dartmouth Hitchcock Medical Center in Lebanon), highlighting them as a key trip generators not directly connected to the region.**
- The most frequented address in Keene was identified as Keene Metro Drug Rehab (781 trips). Cheshire Medical Center was listed as the trip origin in 582 trips. In comparison, Dartmouth Hitchcock in Lebanon was listed 295 times as a trip origin. However, the Bond Wellness Center and Monadnock Community Hospital amounted for more trips than were made to Cheshire Medical Center. This could be due to a variety of factors. CMC is more accessible due to existing public transportation options. Some visitors could also be more likely to be able to obtain transportation than those visiting Peterborough facilities.
- Other non-residential destinations included Monadnock Dialysis, and at least three assisted living facilities.
- More information on trip data by community, as well as the largest 25 trip generating addresses is available upon request.

Geographic Analysis of 5310 Purchase of Service Data

ARC, CVTC, HCS

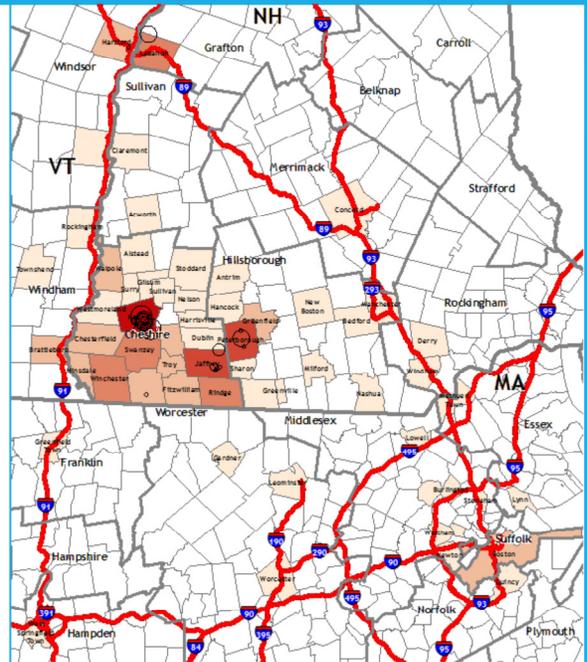
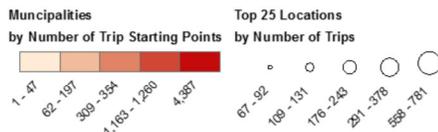
- 16,568 trips between 6/9/13 and 12/31/15
- Served almost every community in Southwest New Hampshire
- Trips from Keene, Peterborough, and Jaffrey were most common
- Majority of addresses with highest demand in Keene (Upper Valley and US 202 Corridor also very common)



Geographic Analysis of 5310 Purchase of Service Data

ARC Only

- 9,667 trips between 6/9/13 and 12/31/15
- No trips from Roxbury, Marlow, Temple, and Bennington
- Highest level of trip generation in Keene
- Significant visits to Boston Metropolitan Area



- This slide focuses on trip generation related to only those trips provided by American Red Cross. However, these trips represent a clear majority (58% of all trips) in data obtained by SWRPC. It should be noted that many ARC trips within this time period were excluded (because a unique origin and unique destination were not provided). This map looks closest to the previous one, because ARC makes up such a large number of overall trips.
- According to trip data, ARC served almost every community in the Monadnock Region during the time period above (with the exception of Marlow, Roxbury, Bennington, or Temple).
- Keene, Peterborough, and Jaffrey were the most common addresses, with 4,382, 1,164, and 1,261 trips. 70% of all trip origins were in one of these three communities.
- **Again, the majority of the most common 25 addresses were in Keene and nearly all were in the Monadnock Region. The exception is Dartmouth Hitchcock in Lebanon, highlighting it as a key trip generator not directly connected to the region.**
- The top 5 generators for trips were in Keene (if Bond Wellness Center and MCH are “separate”). The most frequented address in Keene was identified as Keene Metro Drug Rehab (781 trips), 100% of trips from this address were from ARC. Cheshire Medical Center was listed as the trip origin in 558 trips. In comparison, Dartmouth Hitchcock in Lebanon was listed 295 times as a trip origin. However, the Bond Wellness Center and Monadnock Community Hospital amounted for more trips than were made to Cheshire

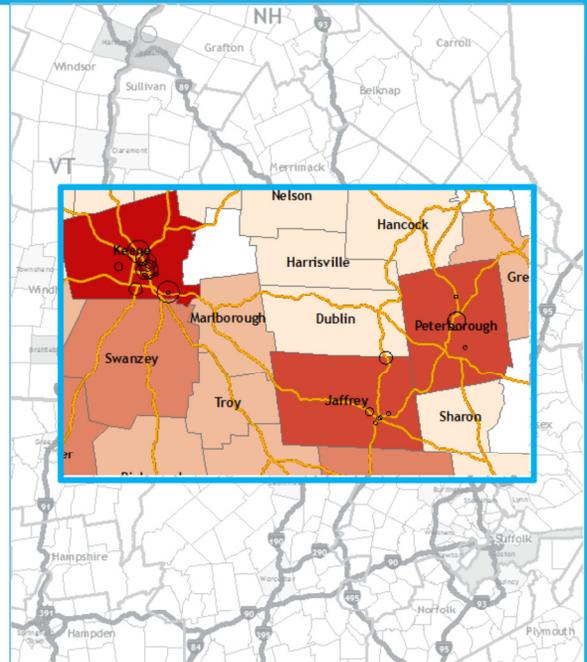
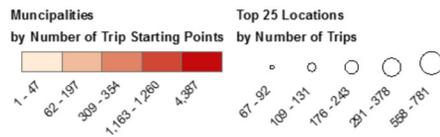
Medical Center. This could be due to a variety of factors. CMC is more accessible due to existing public transportation options. Some visitors could also be more likely to be able to obtain transportation than those visiting Peterborough facilities.

- More information on ARC trip data by community, as well as the largest 25 trip generating addresses is available upon request.

Geographic Analysis of 5310 Purchase of Service Data

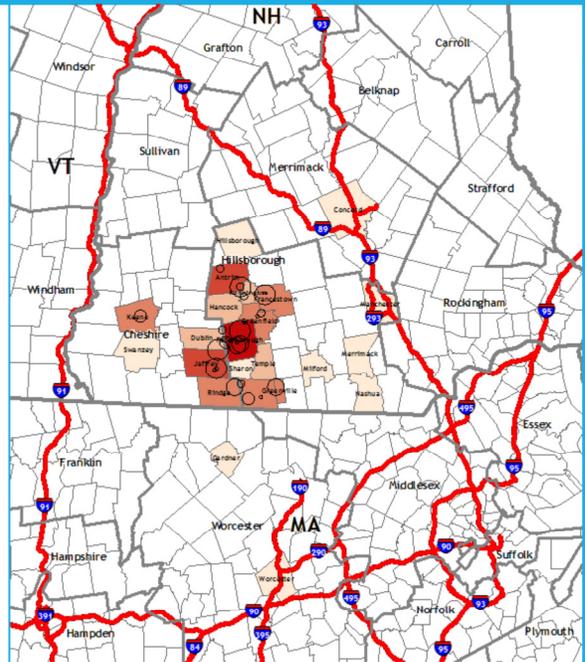
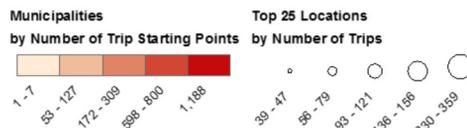
ARC Only

- 9,667 trips between 6/9/13 and 12/31/15
- No trips from Roxbury, Marlow, Temple, and Bennington
- Highest level of trip generation in Keene
- Significant visits to Boston Metropolitan Area



Geographic Analysis of 5310 Purchase of Service Data CVTC Only

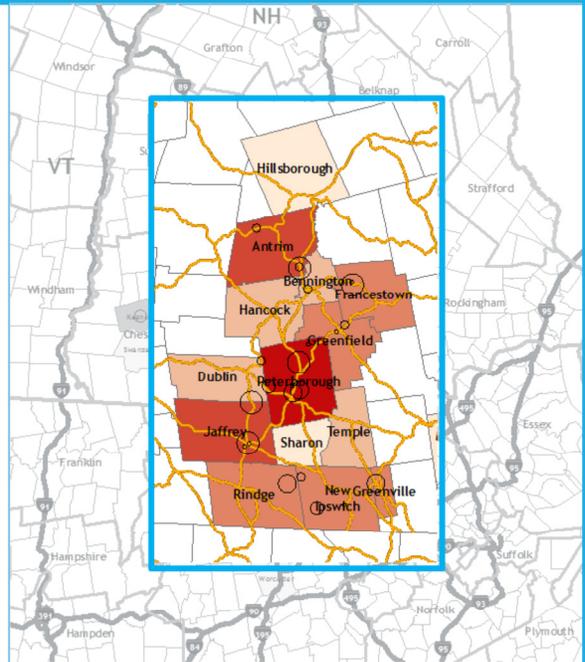
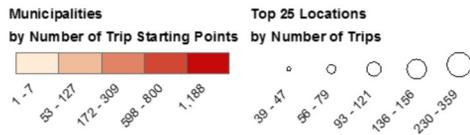
- 4,448 trips between 6/9/13 and 12/31/15
- Focus on western Hillsborough County
- Little activity out of state
- All top addresses within Monadnock Region
- Antrim, Peterborough, and Jaffrey areas with highest demand



- This slide focuses on trip generation related to only those trips provided by CVTC. These trips represent approximately 27% of all mapped trips. Much of the focus, from analysis of trip origins, is the eastern portion of the Monadnock Region. CVTC dominated the number of trips in this area compared to ARC in Antrim (598 vs 5), Bennington (127 vs. 0), Frankestown (309 vs. 0), Greenville (197 vs. 1), and others. However, they were less dominant in providing service to eastern region service centers when compared to ARC like Jaffrey (800 vs. 1,261) and Peterborough (1,244 vs. 1,164).
- CVTC was the only agency providing service to Temple, Bennington, and Frankestown.
- Areas outside of US 202 are “islands”, there were few trips to and from Massachusetts (to Gardner and Worcester only), and no trip to and from the Upper Valley area of New Hampshire.
- Peterborough most frequent trip beginning point (1,188 or about 27% of all trip origins)
- Jaffrey and Antrim very common, with approximately 800 and 600 trip starting points, respectively.
- More information on CVTC trip data by community, as well as the largest 25 trip generating addresses is available upon request.

Geographic Analysis of 5310 Purchase of Service Data CVTC Only

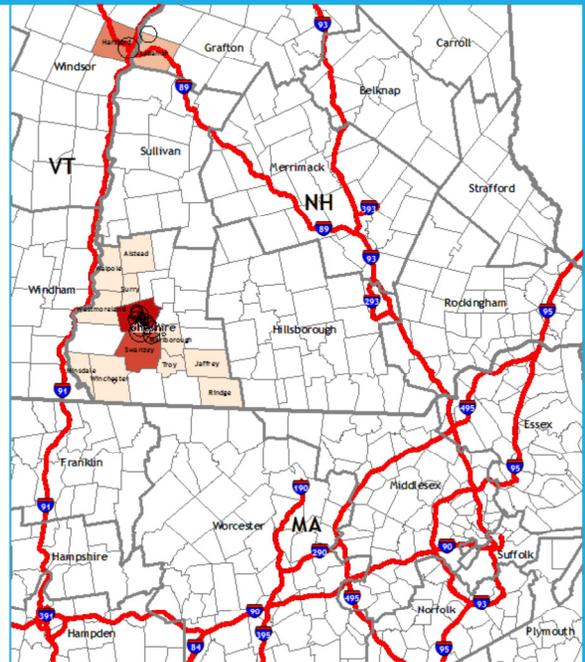
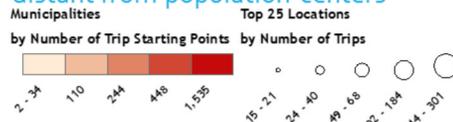
- 4,448 trips between 6/9/13 and 12/31/15
- Focus on western Hillsborough County
- Little activity out of state
- All top addresses within Monadnock Region
- Antrim, Peterborough, and Jaffrey areas with highest demand



Geographic Analysis of 5310 Purchase of Service Data

HCS Only

- 2,453 trips between 6/9/13 and 12/31/15
- Strong relationship to White River Junction and Lebanon hospitals
- Swanzey Market Basket supermarket most common origin address
- Second highest location of demand (White River Junction Veterans Hospital) distant from population centers

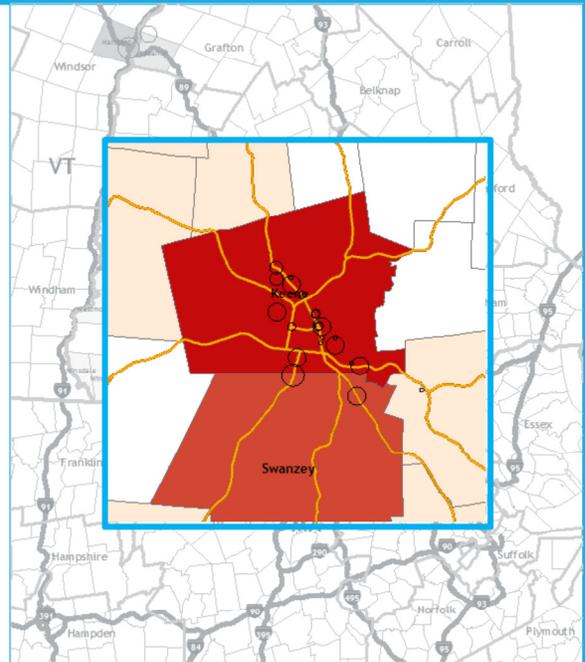
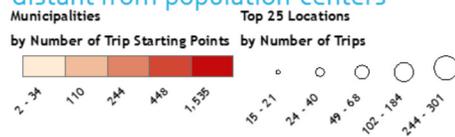


- This slide focuses on trip generation related to only those trips provided by HCS through 5310 Purchase of Service funding. These trips represent a about 15% of all trips in data obtained by SWRPC.
- HCS 5310 trips offers service in the smallest number of communities, with a focus on Keene, Swanzey, and to a lesser extent trips to the Upper Valley and neighboring White River Junction.
- Service was provided (using analysis of trip origin addresses) to 12 of 23 Cheshire County communities.
- Trips from Keene were the most common (1,553 out of 2,453) or about 63% of all HCS trips and about 1 in 4 of all trips from Keene by any 5310 provider.
- Swanzey was the second most common trip starting point (448 out of 2,453) or about 18% of all trips, the majority of these being trips to Market Basket off NH 10.
- HCS provides nearly $\frac{3}{4}$ of demand from the Veterans Hospital in White River Junction through an analysis of trip origin addresses (244 of 333 vs. 89 from ARC)
- HCS is less likely to provide 5310-funded trips to Dartmouth Hitchcock Medical Center in Lebanon, accounting for 110 of 419, or about 26% of trips from this address.
- More information on HCS trip data by community, as well as the largest 25 trip generating addresses is available upon request.

Geographic Analysis of 5310 Purchase of Service Data

HCS Only

- 2,453 trips between 6/9/13 and 12/31/15
- Strong relationship to White River Junction and Lebanon hospitals
- Swanzey Market Basket supermarket most common origin address
- Second highest location of demand (White River Junction Veterans Hospital) distant from population centers



DEMAND: ROUTES

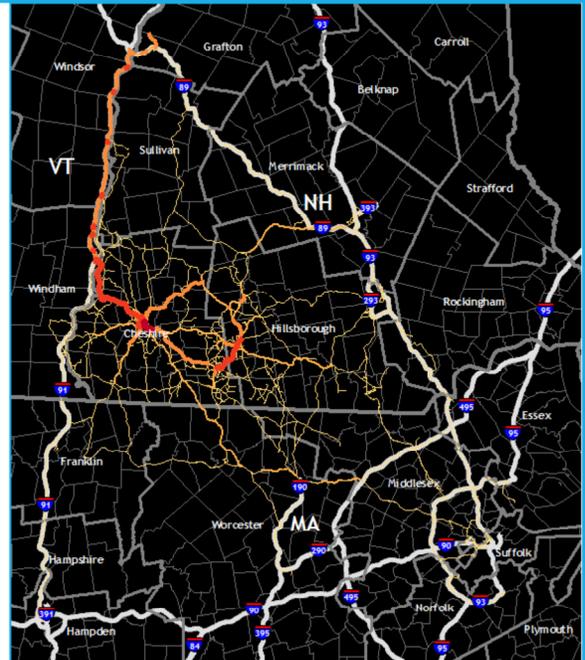
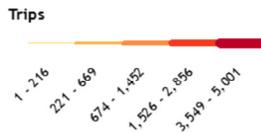
Transportation Need and Demand in Southwest New Hampshire

- The goal of this mapping exercise was to help answer the question: “What routes are utilized by transportation service providers?” What I am going to show and talk about here are not the actual routes taken in every case, they are the most likely routes, as determined by commercially-available navigation software. In general, this assumes a driver wants to get to their destination as quickly as possible.
- 5310 trips between 6/9/13 and 12/31/15 amounted to over **48 years** of driving time (the average trip duration was estimated to be about 25 minutes), and almost **300,000 miles** traveled (the average trip distance was approximately 18 miles).

Geographic Analysis of 5310 Purchase of Service Data

ARC, CVTC, HCS

- 16,568 trips between 6/9/13 and 12/31/15
- I-91 via NH 12 significant trip mileage generator
- Substantial traffic between east and west areas via NH 9, NH 123, and NH 124
- NH 12 key route to Boston Metropolitan Area

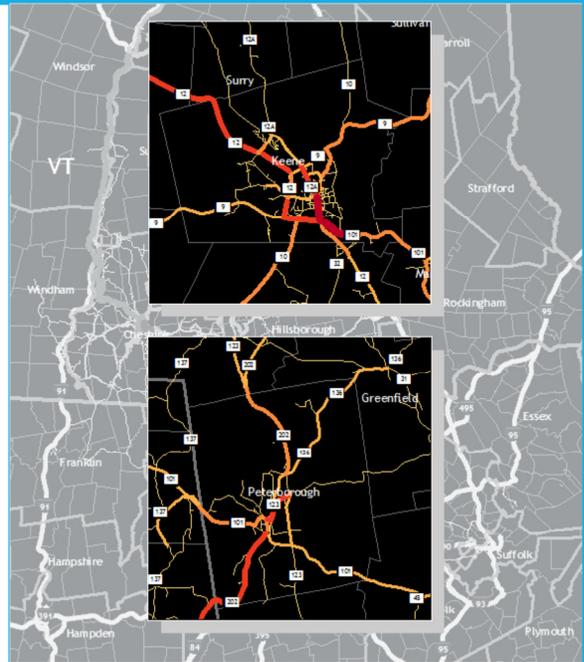
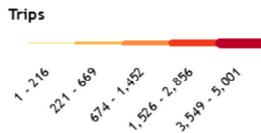


- A general note on all route maps: routes that take place on divided highways such as I-91 and I-89 generally have their trip volumes aggregated for each direction. This results in a *lower* than expected appearance in the map legend. Stakeholders with specific questions are encouraged to contact SWRPC for clarification regarding this and other perceived anomalies.
- In general, US 202 between Jaffrey and Peterborough and NH 12/ I 91 between Keene and White River Junction, VT/Lebanon, NH were the most frequently traveled routes. Other key connections across and between communities were NH 9 and NH 124.
- NH 12 south from Keene to Route 2 in Massachusetts was the most effective route for all 5310 trips to the Boston Metro Area.

Geographic Analysis of 5310 Purchase of Service Data

ARC, CVTC, HCS

- 16,568 trips between 6/9/13 and 12/31/15
- I-91 via NH 12 significant trip mileage generator
- Substantial traffic between east and west areas via NH 9, NH 123, and NH 124
- NH 12 key route to Boston Metropolitan Area

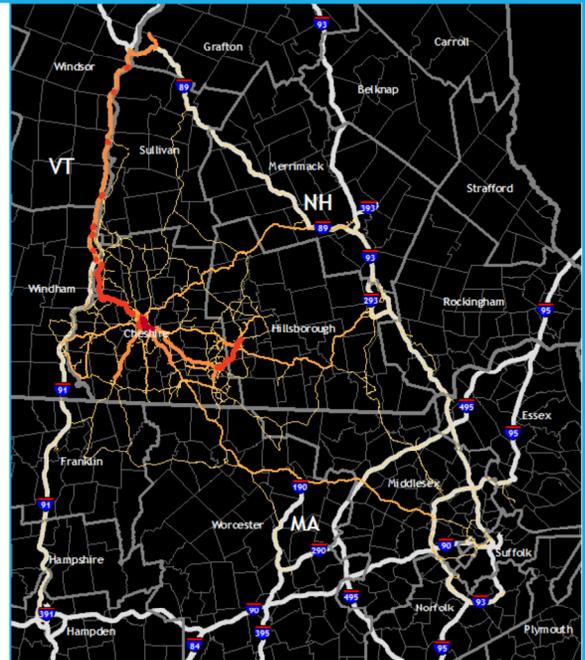
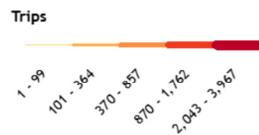


- Inset maps show more demand on US 202 south of Peterborough and to the hospital, than on US 202 north of Peterborough. This is partially explained by the fact that Jaffrey is a close-by trip generator comparable in size to Peterborough (2,072 trip starting points vs. 2,408)
- There were 4,066 trips to and from an address in Keene, about $\frac{1}{4}$ of 5310 trips. Trips within Peterborough amounted to 1,021.

Geographic Analysis of 5310 Purchase of Service Data

ARC Only

- 9,667 trips between 6/9/13 and 12/31/15
- I-91 via NH 12 key route
- "Radial" patterns extending from Keene, Peterborough, and Jaffrey

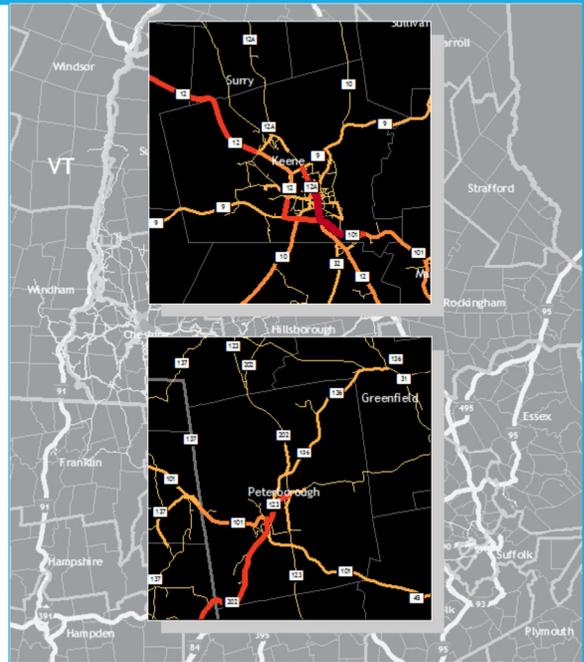


- This slide focuses on trip generation related to only those trips provided by American Red Cross. Remember, these trips represent a clear majority (58% of all trips) in data obtained by SWRPC. It should be noted that many ARC trips within this time period were excluded (because a unique origin and unique destination were not provided). This map looks closest to the previous one, because ARC makes up such a large number of overall trips.
- ARC trips were represented by the same trend on the previous slide, with the highest routes being NH 12, I 91, and US 202.
- There was also fairly heavy use of southern routes in the region, on NH 10, NH 12, and NH 124, a reflection of higher demand coming from these communities.

Geographic Analysis of 5310 Purchase of Service Data

ARC Only

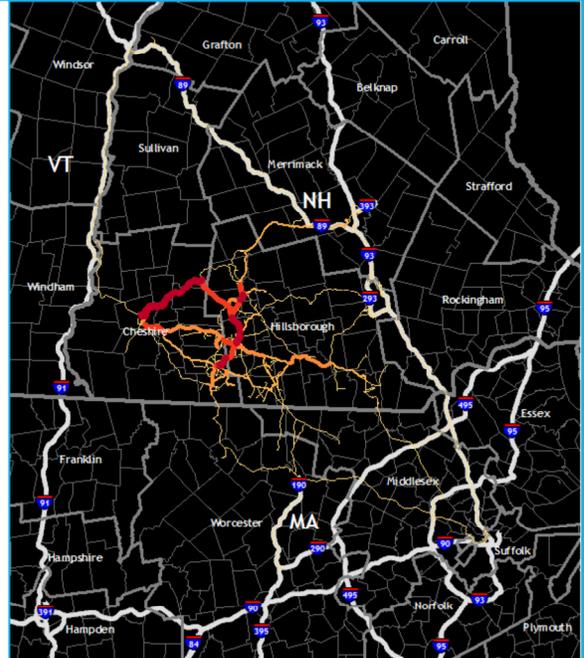
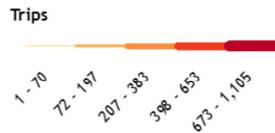
- 9,667 trips between 6/9/13 and 12/31/15
- I-91 via NH 12 key route
- "Radial" patterns extending from Keene, Peterborough, and Jaffrey



Geographic Analysis of 5310 Purchase of Service Data

CVTC Only

- 4,448 trips between 6/9/13 and 12/31/15
- Highest demand on US 202
- NH 9, NH 123 as key routes to and from Keene
- Few trips outside of Southwest New Hampshire

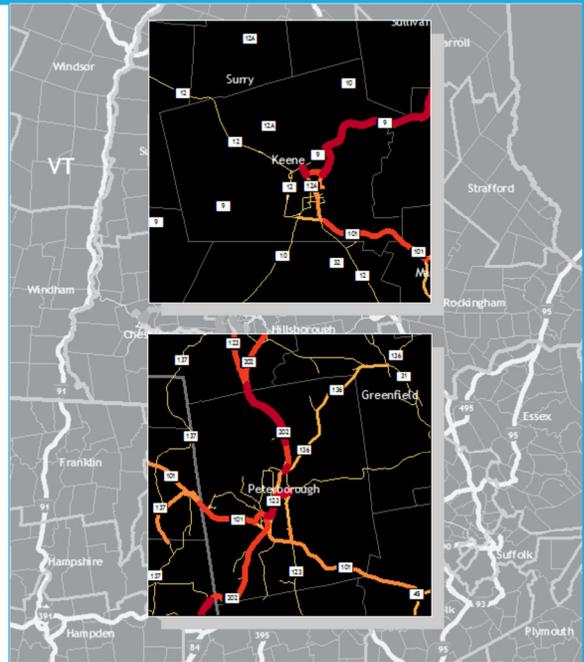
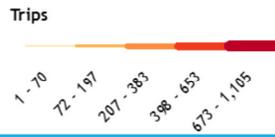


- This slide focuses on trip generation related to only those trips provided by CVTC. These trips represent about 27% of all trips in data obtained by SWRPC.
- Trips captured by CVTC's 5310 trips show strong demand for NH 9 (via NH 123) and NH 101 as important connectors between need by eastern Monadnock region residents to access destinations in Keene.

Geographic Analysis of 5310 Purchase of Service Data

CVTC Only

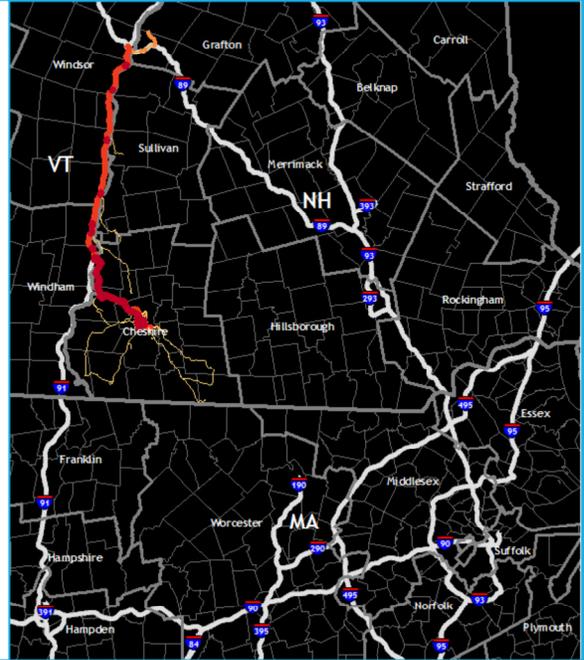
- 4,448 trips between 6/9/13 and 12/31/15
- Highest demand on US 202
- NH 9, NH 123 as key routes to and from Keene
- Few trips outside of Southwest New Hampshire



Geographic Analysis of 5310 Purchase of Service Data

HCS Only

- 2,453 trips between 6/9/13 and 12/31/15
- Highest demand in the vicinity of Keene and on NH 12 to I-91
- Rare trips via NH 10 south of Keene (more common than trips via NH 124 or NH 12 south of Keene)

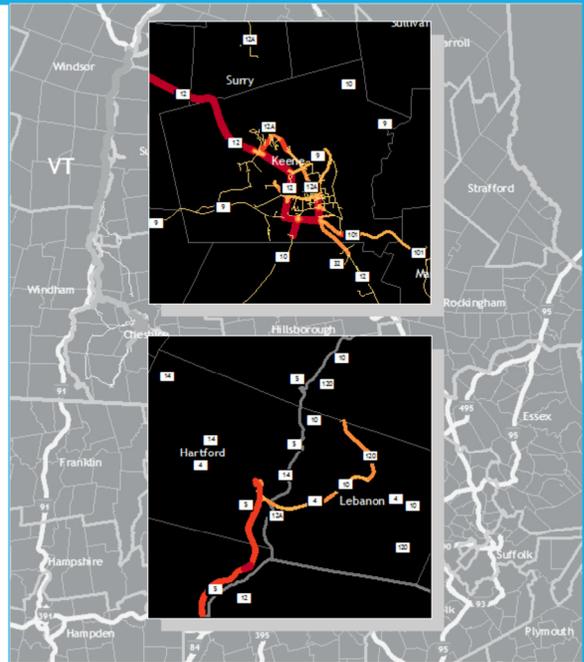


- This slide focuses on trip generation related to only those trips provided by HCS. However, these trips represent about 15% of all trips in data obtained by SWRPC.

Geographic Analysis of 5310 Purchase of Service Data

HCS Only

- 2,453 trips between 6/9/13 and 12/31/15
- Highest demand in the vicinity of Keene and on NH 12 to I-91
- Rare trips via NH 10 south of Keene (more common than trips via NH 124 or NH 12 south of Keene)



QUESTIONS?

Southwest Region Planning Commission

37 Ashuelot Street, Keene, NH 03431

(603) 357-0557, admin@swrpc.org