

An aerial photograph of the University of Utah campus. The image shows a large, modern university complex with numerous buildings, parking lots filled with cars, and green spaces. In the background, a range of rugged, blue-toned mountains stretches across the horizon under a clear sky. The text is overlaid on the upper portion of the image.

# **LOST IN THE CROWD? RIDESHARING WITH ZIMRIDE AT THE UNIVERSITY OF UTAH**

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## 1.0 EXECUTIVE SUMMARY

The purpose of the Global Changes and Society course was to “develop an interdisciplinary perspective to explore the complex systems of environmental change and the links to society through a project-based approach” (University of Utah General Catalog). The focus for this year’s course was to air quality and global air quality issues. As transportation makes up more than half of pollutant source during winter time inversions in the Salt Lake Valley this project focused on non-single occupancy vehicle (SOV) options available to commuters. This assessment evaluated carpooling and specifically Zimride, a ride matching platform. The authors set out with the objective to complete a comprehensive assessment of the Zimride program at the University of Utah at the midpoint of a 3-year contract period. This evolved into a set of observations, evidence, and recommendations regarding alternative transportation more broadly.

Our team essentially served as a consulting group for the primary campus program coordinator for Zimride, who provided us with a set of research questions and hypotheses to investigate. Based on the research findings detailed in this report, we can provide a set of recommendations to help increase the effectiveness of the program in the remaining contract period.

Support and success of alternative transportation programs have been variable and may lag behind those of many peer institutions based on a review of STARS data. The Utah Transit Authority (UTA) transit pass program has proven to be largely successful, but limited by the convenience of access to transit lines in some geographic areas within commute distance of the university. Programs developed by students and internal departments alike have had variable success. For example, previous carpooling and bike rental programs at the University of Utah have been discontinued.

Where programs have struggled, the authors observed a lack of visibility, communication, or coordination between departments. There are multiple and competing ride sharing programs currently available at the university (UTA Rideshare, Zimride, Ride Amigos) and there is very little coordinated, unified messaging across the university web and social media sites. Further, much of the information that is readily available (web space, orientation materials) disproportionately emphasizes information regarding parking permits, and thus makes single occupancy vehicle use the apparently normative commute mode.

Some key findings are as follows:

### **Zimride/ Ride Sharing**

- The underlying assumption that carpooling best serves geographic areas where transit service is limited is confirmed based on user data from Zimride, UTA Rideshare, and RideAmigos;
- Commute trips rather than one-time ride posts match most frequently;
- Given the university-affiliated population residing in these areas, especially the east side of the Salt Lake Valley and Park City, there is significant room for increased participation;
- Other universities in Utah and the PAC12 with both Zimride and free transit pass programs show significantly higher success rates for Zimride, and therefore transit pass access alone is unlikely to be determining factors;

### **University of Utah**

- The lack of visibility of Zimride or other alternative transportation options across internet sites is likely a causative factor in low participation;
- The University of Utah's public commitment to sustainability is frequently stated but implementation and reporting remains challenging due to a mix of complex and competing demands within the institution;
- University leadership should strengthen the mandate to reduce SOV trips, increase resources to Commuter Services, and improve reporting and accountability to meet stated goals.

Recommendations for future success of alternative transportation programs include:

- Increase Zimride program visibility as the preferred carpool matching platform;
- Use targeted marketing campaigns using geographic data and analytics, especially for residents of the eastern Salt Lake Valley;
- Increase frequency of collaboration and reporting between departments engaged in alternative transportation activities (Commuter Services, Sustainability Office, Facilities). This may provide an opportunity for streamlined efforts and reduced waste for resources allocated to alternative transportation.
- Continue to increase funding/support for alternative transportation program capacity including the current active transportation coordinator (SO), the creation of an alternative transportation coordinator position (CS), and staff use of analytics regarding available transportation data from UTA and commuter transportation surveys to drive informed decisions for the future.

A detailed analysis and set of recommendations is contained in the full report.

## **2.0 PROJECT BACKGROUND—AIR QUALITY AND THE UNIVERSITY OF UTAH**

### **2.1 The Air Pollution Problem in Salt Lake Valley**

Air pollution in the Salt Lake Valley is a complex problem with no simple solution. Due to meteorological patterns and regional topography combined with a large human population serious pollution levels in the wintertime can build thanks to cold pool effects, and then rapidly blow away to be someone else's problem the next. There is an intricate flow of cause and effect with impacts large and small. The interactions are multi-faceted as are the potential solutions.

### **2.2 The Transportation Sector as a Major Source of Emissions**

Our project team chose transportation as the emissions source on which to focus our efforts related to air quality issues in the Salt Lake Valley. Vehicular emissions are widely reported to constitute over 50% of the particulate matter (PM 2.5) in the air during cold air inversions based on emissions inventories from the Utah Department of Air Quality. The number of vehicles and miles traveled have increased steadily in the Salt Lake Valley over the past 75 years. This has a direct relation to the population growth characterizing communities along the Central Wasatch Front. According to the Utah Department of Transportation (2014), Utah's population increased by 68% between 1990 and 2013, while VMT increased 83%, though since 2008 the rate of VMT growth has slowed. Vehicle emissions remain a significant source of PM2.5 pollution despite gains in emissions control technology in cars and light trucks over time thanks to regulatory requirements and fleet turnover. Alternative transportation, ride-sharing and carpooling options represent known mitigation strategies to counter rising numbers of residents with vehicular commute needs.

### **2.3 The University of Utah as a Major Regional Source of Emissions**

The University of Utah is an administrative unit of state government. It operates under the authorities granted by the state legislature as well as relevant state and federal laws. The university is overseen by a Board of Trustees (BOT) which approves regulations and also delegates various operational responsibilities to university administration. A statewide Board of Regents sets higher-level policy.

The University of Utah is one of the state's largest employers as the flagship state institution of higher education. It is a research-intensive university with a major health sciences campus, NCAA Division I athletics teams, and an enrollment of more than 30,000 students. The greater University of Utah campus in the northeast foothills of the Salt Lake Valley thus represents a destination hub for commuters up and down the Central Wasatch Front. Significant numbers of University Health Care doctors, staff and patients, other campus visitors, and university faculty, staff, and most students travel to and from university facilities each day.

The University of Utah is a significant contributor to emissions through commuting, energy and natural gas use, and other operations. It is classified as a major source by the Utah Division of Air Quality (DAQ) and operates under a state permit. However, the permit only covers stationary emissions sources, not mobile (transportation) sources. The university's Department of Occupational and Environmental Health and Safety is responsible for monitoring and reporting.

## 2.4 Directives / Obligations of Transportation Services on Campus

University regulations themselves do not explicitly provide any additional policies that mandate efforts to reduce university-related air pollution. Several policies do provide broad authority for efforts to reduce both air pollution sources, including from private vehicles. Policy 3-300, Occupational and Environmental Health and Safety, reads, “It is the policy of the University of Utah to promote good health, well-being, and occupational safety for its faculty, employees, students, and visitors, whether on campus or elsewhere engaged in the work of the University.” It then sets forth various goals and authorities for implementation. Policy 3-201: Physical Facilities Community Impact states explicitly that the university is not subject to local zoning or regulation. However, “When planning and constructing physical facilities on campus, the university shall seek to minimize any adverse impact on adjacent neighborhoods and/or the community in a manner consistent with the attainment of its missions and goals.” Both air pollution and traffic are adverse impacts that can broadly fall under this clause.

In terms of policies for mobile sources, the primary regulation is Policy 5-206: Vehicle Parking Policy. The regulation provides direction for parking management. It directs Parking Services (now Commuter Services) to assure that “[R]easonable efforts shall be made to provide convenient parking in proximity to various campus facilities.” However, it also includes a clause that states:

“Campus land available for motor vehicle parking is limited. Streets which access the campus have limited capacity and excess traffic negatively impacts surrounding residential and commercial areas. The University administration encourages students, employees, and visitors to use public transportation, car pools, or means of transportation other than a single occupant motor vehicle to commute to the campus.”

Additionally, numerous official plans and reports address air quality and mitigation strategies directly or indirectly. Relevant documents include the following:

- 2008 Campus Master Plan
- 2010 Climate Action Plan
- 2011 Bicycle Master Plan
- 2016 Campus Parking & Transportation & Research Park Mobility Master Plan

Each of these plans and reports contains extensive background information as well as numerous goals and strategies. Many of these, if implemented, would help shift the commuter mode share away from single occupant vehicle (SOV) trips and towards “**[T]he explicit goal for the University ... to reduce single occupancy vehicle trips to 50% of the overall campus trips.** [emphasis added]” (Campus Parking and Transportation & Research Park Mobility Master Plan p. ii).

At this time, there are no publicly available progress reports for any of these plans from which to assess the implementation status or success of these goals. The University of Utah also does not publicly report data on trends in commute mode share or related emissions.

## 2.5 Foothill Drive Transportation Planning

Foothill Drive serves as a major roadway on the northeast bench of Salt Lake City and carries a high

volume of commuter traffic to the University of Utah. It is managed by the Utah Department of Transportation (UDOT) and was once slated to become a freeway to complete the I-215 valley ring road. Although this never happened, Foothill Drive remains a major regional transportation route. Congestion at peak travel times is a matter of significant public concern and ongoing planning efforts. Transit service is limited and buses are caught in the peak hour traffic flow, limiting their appeal as an alternative to driving. There are no bicycle lanes, discouraging commuting by this mode.

In 2008, the Wasatch Front Regional Council (WFRC) commissioned a study to evaluate options for the corridor. Partners included the Utah Transit Authority, UDOT, Salt Lake City, and the University of Utah.

The final report presents several possible alternatives for upgraded transit and traffic facilities. The report concludes with a “recommended action plan.” It states:

Implementation of the recommended improvements on Foothill Drive should occur in a phased manner. Initially, more modest actions would establish the foundation for the subsequent, longer term upgrades. For example, programs that expand transit and rideshare use are needed to allow the later success of the proposed Bus/HOV Lane. Following are the key proposed near and longer term actions with the primary responsible agencies.

Near Term

- Increase commuter express transit service and expand TDM [Travel Demand Management] efforts (UTA and University of Utah). ... (p. 23)

To date, the infrastructure alternatives in the report have not been implemented. Recently Salt Lake City and partners have held public meetings to restart the design process. No updated report is available at this time. That said, travel demand management (TDM) by the University of Utah will likely remain a high priority.

## 2.6 University of Utah Air Quality Task Force

Recognizing the impact and role the University of Utah plays in air quality, senior administrative leaders created an Air Quality Task Force (AQTF) in 2013 to provide a comprehensive review and evaluation and propose near-term initiatives to improve air quality. Their final report, “Improving the Air We Breathe: Emissions Mitigation Strategies for the University of Utah” was released in 2015 [NB: one of our team members was a co-author of the report]. It presented a detailed set of recommended strategies that the task force deemed to be feasible and relatively low cost. The list of strategies covered mobile as well as stationary sources.

The report noted that the university has made real progress in reducing stationary emissions over time despite significant growth. The ability and obligation of the University of Utah system to continue to make progress and fulfill its role as a “thought-leader” in respect to sustainability and public health issues were also highlighted. Nonetheless, the report notes:

“No recommendations were made that impact core functions or potential levels of service. The bulk of the Task Force recommendations are related to increasing efficiency of systems, looking for alternative

equipment and processes with reduced air-quality impacts, and communicating these strategies to the campus and regional community.”

### **3.0 PROJECT BACKGROUND—RIDE SHARING (CARPOOLING) AND ZIMRIDE**

#### **3.1 Zimride Platform Selection**

As the AQTF was developing its recommendations, a spring 2014 Global Changes and Society student team was also focusing on carpooling for their project. Air quality was also the theme of that year for the course. The two efforts converged into the strategy recommendation in the final AQTF report, “Promote Carpool Technology” (4B-8). The student team had researched new technologies among the relatively new ridesharing platforms offered by private companies. At the time, Zimride, a division of the company Lyft, was the largest in the United States. One feature of particular interest was a closed network option for organizations that provided increased security and safety. Use of the platform would be free for university students, faculty and staff under an umbrella contract fee. Participants would register for the service using their institutional credentials.

To carry out their project, the student team submitted a successful grant proposal entitled “The Future of Commuting at the University of Utah” to the Sustainable Campus Initiative Fund (SCIF). They were successful and received funding for a 3-year contract with Zimride. Eventually, it took almost a year to complete legal review and finalize the contract. The Sustainability Office, not Commuter Services, assumed implementation responsibilities for the program. Zimride at the University of Utah officially launched in August 2015 in time for fall semester. By this point, Enterprise Rent-A-Car had acquired Zimride from Lyft.

#### **3.2 Class Project Selection and Scope**

In February 2017, former students from the 2014 and 2015 Global Changes and Society courses visited our class to relate their experiences, outcomes, and advice. It was here that our team learned about the current status of the Zimride project. After more than a year in operation, it was apparently underperforming relative to expectations and experiences at other universities. Rather than launch a new project, our team decided to focus on Zimride to see if we might increase its success during the remainder of the contract term. We contacted the current university program manager, the Sustainability Office Campus Engagement Coordinator, and offered our services. The offer was accepted.

We began our discovery phase with a meeting to lay out issues and our project goals. The program manager confirmed that compared to programs at other universities, Zimride has not been successful at the University of Utah. In particular, a relatively small number of participants have utilized this service. The best month in terms of enrollment was the first month of the contract.

The program manager suggested that our team should investigate Zimride programs at other universities and seek any information about reasons for their comparative success. Her working hypothesis was that the University of Utah's UTA transit pass program competes with Zimride and makes it less necessary. Did this also occur elsewhere? Was the hypothesis correct?

### 3.3 Methods

Our research consisted of several lines of inquiry into carpooling usage and promotion on campus. We sought to answer questions such as:

- Is there a relationship between having access to a convenient public transportation and carpooling?
- Are there specific geographical areas where Zimride is being used more frequently?
- How widespread is promotion of Zimride? What are the respective responsibilities of various partners in this program? What resources are available?
- How is Zimride performing in the U compared to other universities' platforms, especially in the western U.S. and PAC12?
- Where does Zimride fit in the promotion of alternative transportation at this university?

Our research approaches included:

- reviews of data from any recent surveys of campus commute mode share, carpool user satisfaction, and student attitudes toward sustainability generally and alternative transportation specifically;
- interviews with key partners and program representatives for the University of Utah;
- interviews with Zimride program managers at other campuses;
- assessment of promotional efforts for Zimride, including events, social media, and websites;
- analysis of the institutional context of carpooling and alternative transportation, and
- analyses of actual carpool participant data for trends and correlations.

In the Results section and Appendix C, we explain the statistical tools used to analyze the Zimride dataset to study the carpooling behavior of users. This analysis, in the larger context of program marketing, provides more accurate explanatory factors that help clarify the reasons behind the relatively limited use of Zimride at the University of Utah to date. Based on our findings, we propose a set of recommendations that if implemented may increase participation in the program. We also note larger concerns regarding overall institutional support for alternative transportation.

## **4.0 FINDINGS**

### 4.1 Survey Data

#### ***4.1.1 Attitudes toward Sustainability and Alternative Transportation among Students***

The [2016 Global Changes and Society course](#) focused on climate change. In a first effort to assess student attitudes about climate change and sustainability at the University of Utah, one interdisciplinary graduate student team designed and conducted a survey.

Questions in this survey received between 440 and 483 responses. These respondents represent approximately 2% of the U's student population. Demographics (age, gender, enrollment status) of respondents in this survey were not representative of the student population on campus, however, so



results should be considered in that light. In the survey, three questions directly related to student support for sustainability and transportation programs on campus.

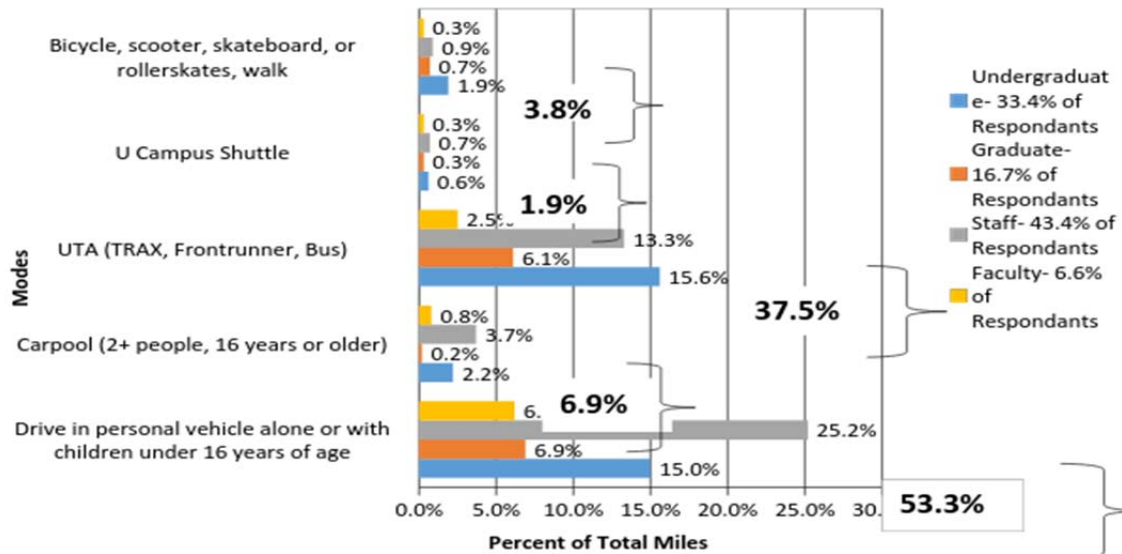
Responses showed strong student support with regards to sustainability initiatives. Included in this was strong support for initiatives related to alternative transportation (public transit & university shuttles) and improved efficiency of the campus fleet. Results from this survey show student support for sustainability initiatives relating to transit when developing University policy as well as the directives, management, and budgeting for the Commuter Services, Fleet Services, and Sustainability departments.

Eighty-nine percent of students surveyed considered sustainability to be a campus issue and of these 64% consider sustainability to be a major issue. When asked to rate support for campus sustainability programs with 1 being low and 7 being high support, 85% of respondents rated their support as 5 or higher. Of total, 56% answered with the highest rating of support. When asked which initiatives they support, 81% of respondents support transportation at a ranking of 4th, grouped with other topics of high concern being water, energy, and waste.

#### ***4.1.2 2014 Transportation Survey—Commute Mode Share***

The Facilities Management Department conducts commuter surveys as a component of its greenhouse gas (GHG) inventory process. The survey is used to estimate emissions from commuting (categorized as Scope 3 emissions) to include in mandatory reporting under the terms of the American College and University Presidents' Climate Commitment (ACUPCC). The survey does not appear to be used by the Commuter Services Department for benchmarking or tracking progress toward non-SOV commute targets although they were able to provide us a copy when requested.

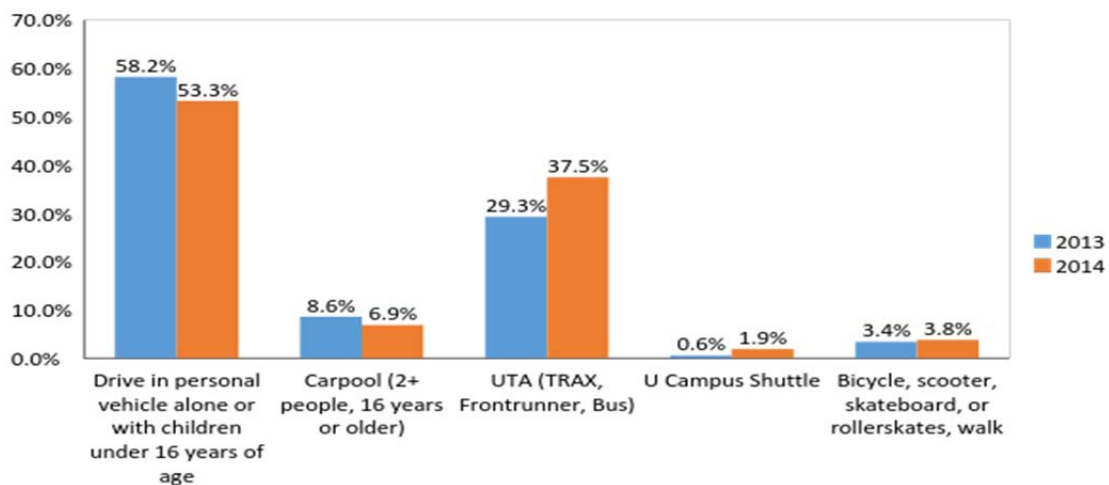
The most recent survey report was taken in 2014. According to the summary report, this was the second annual effort to analyze modes of transportation and preferences for commuters to and from the University of Utah. The survey received input from 11,451 respondents of total 42,228 university affiliates. These respondents spanned across students, faculty, and staff. Responses represented a statistically significant sample.



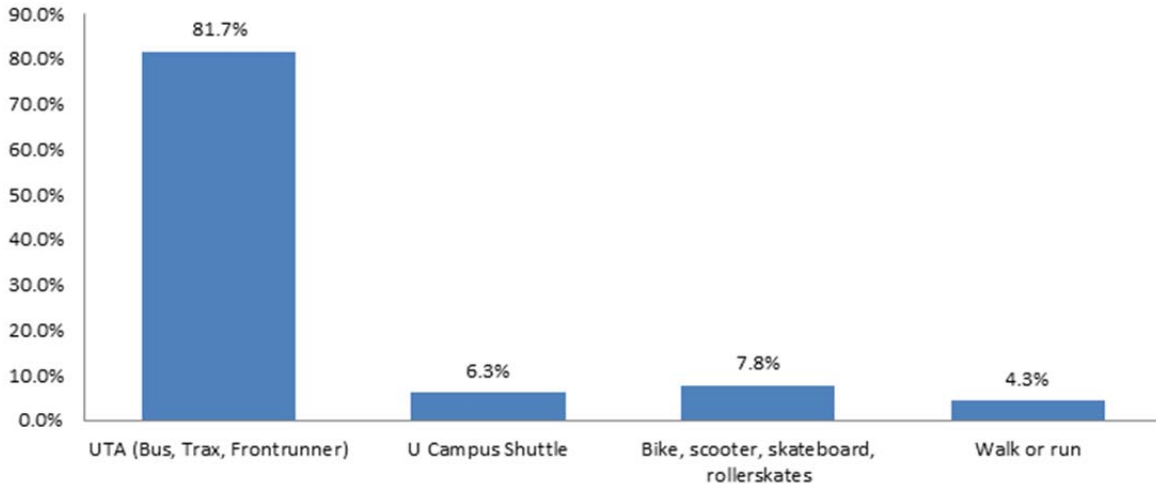
**Figure 1. 2014 Transportation survey results: commute mode share by university affiliation.**

Results show that 53% of respondent travel miles were by single occupancy vehicle (SOV) drivers. The number of individual trips was not reported. Carpooling in 2014 represented 6.9% of total miles, or 14,403 total miles, a decrease from 8.6% reported in 2013, according to the report (see Figure 2).

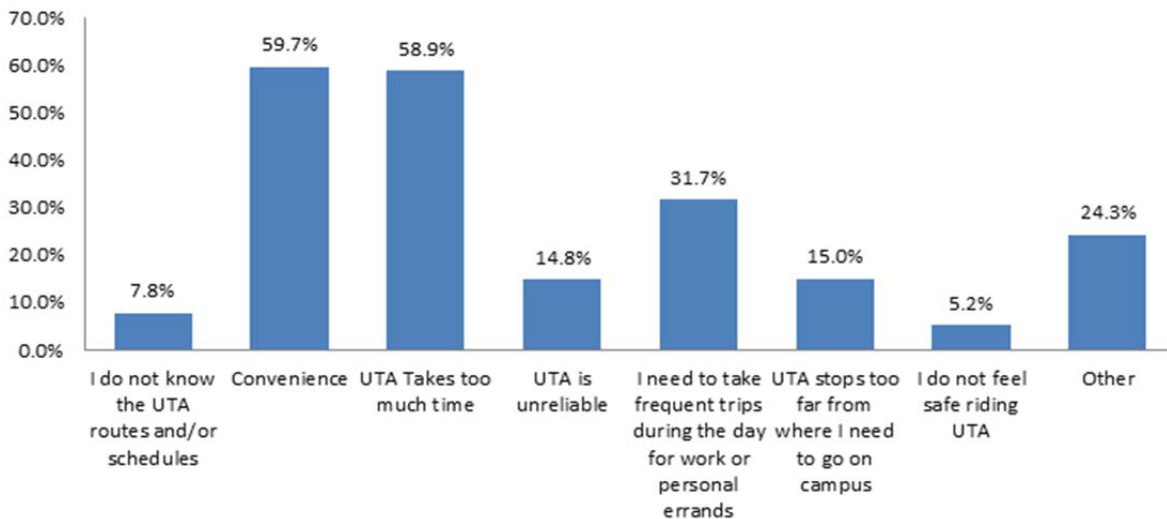
Of the individuals who responded that they are SOV drivers, 82% said they would choose UTA as their second choice for transportation. However, when surveyed on second choice for transportation, SOV drivers were not offered the option of carpooling or ridesharing so the degree of interest in this mode was not evaluated. Respondents cited time and convenience as the leading reasons for not choosing UTA as the primary method for commuter transportation. A transportation survey was not conducted in 2015 so we do not have baseline data from the year Zimride launched. Results from the 2016 survey is not yet available.



**Figure 2. Comparison of 2013 and 2014 transportation survey results: mode share by percent of total miles.**



**Figure 3. 2014 Transportation survey results: second choice of transportation for single occupancy drivers.**



**Figure 4. 2014 Transportation survey results: Reasons for driving rather than using transit (selection of multiple options allowed).**

#### 4.1.3 2016 Zimride Program Survey

During the spring semester of 2016, an undergraduate student enrolled in class in the Honors College designed a survey to assess factors that affect utilization of the new Zimride service at the University of Utah.

The survey was created using a Google Form. It was distributed by email to all listed users in the Zimride system as well as to fellow students in the class and staff and student interns at the Sustainability Office. The survey was reviewed and approved by



the university and corporate Zimride program managers.

The response rate was small and not statistically representative of campus community as a whole. However, some preliminary findings provide interesting initial attitudes and feedback from respondents. The survey collected basic demographic data and asked respondents to indicate whether or not they used Zimride, and factors that influenced this. According to the final report (Corkery, 2016, unpublished), “We hypothesize that key factors to increasing ridership are how well known, user friendly, and transparent the program is. A second hypothesis we have is that males are more likely to participate in Zimride because they worry less about their safety than females.” (p. 1).

According to the author, results indicated that the key factors that favored use of Zimride were convenience and knowledge of the program. Two primary concerns reported by non-participants were concerns over safety and social awkwardness of sharing a ride with a stranger. The author also concluded: “...we need to expand our question to how can we increase Zimride ridership and ride postings... because a large membership base without active users won’t reduce the number of cars on the road. It is clear that we need to collect more data for our research to be more valid. Once that is accomplished we will develop and implement different advertising techniques and create an advertising action plan for Zimride to increase ridership....”

Since this preliminary survey, no follow-up has been conducted. It would be helpful for future surveys to investigate whether people who rideshare use other platforms or informal networks, whom they share rides with (household members, co-workers, neighbors, strangers), and if they do use ride matching, once a ride has matched, the frequency of shared rides over time.

## 4.2 Current and Past Efforts for Carpooling as Alternative Transportation

### ***4.2.1 Commuter Services Carpool Programs***

As previously noted, the Commuter Services Department manages parking at campus facilities as well as most other transportation-related programs. Carpooling fits well within the portfolio of commuting options because it reduces the demand for individual parking stalls while still generating revenue for the department. It can also reduce congestion on roadways and thus travel time for commuters given sufficiently high participation rates.

According to Commuter Services representatives, for many years the university’s carpooling program consisted of a discounted specialty permit displayed on the rear-view mirror and convenient, carpool-only parking spaces in various lots. Ride matching was done through informal work or social networks or via a partnership with the Utah Transit Authority’s Rideshare program.

This carpool permit program was effectively on the honor system, with no monitoring of spaces other than to be sure that parked vehicles had the proper permit displayed. When Commuter Services conducted an enforcement sweep in 2014, they found that nearly 90% of users were actually single-occupant drivers who were not actually carpooling with others, thereby effectively getting a heavily discounted reserved stall for themselves. Due to these violations, reserved stalls for carpooling were eliminated.

At this time, Commuter Services was also in the process of switching from a physical hang-tag parking permit system to an online system whereby permit holders enter their license plate numbers and can have up to 3 vehicles on a given virtual permit. Only one vehicle may be on campus at a time per permit. Holders may switch authorized vehicles at any time with the online system. Enforcement is via digital camera license plate readers mounted on vehicles and linked to a database of registered vehicles.

The redesigned carpooling program now allows users to add additional personal vehicles to one permit beyond the 3 that would otherwise be allowed. Carpoolers can share one permit and reduce the costs of parking as well as commuting as long as they always rideshare when commuting by car. On days when commuters drive alone, if more than one member of the carpool brings a car, then each person needs a separate permit. Day passes may be purchased, but there is no discounted permit that covers only a limited number of days per week or month. That means that shared permits may be less of a cost savings depending on commute patterns.

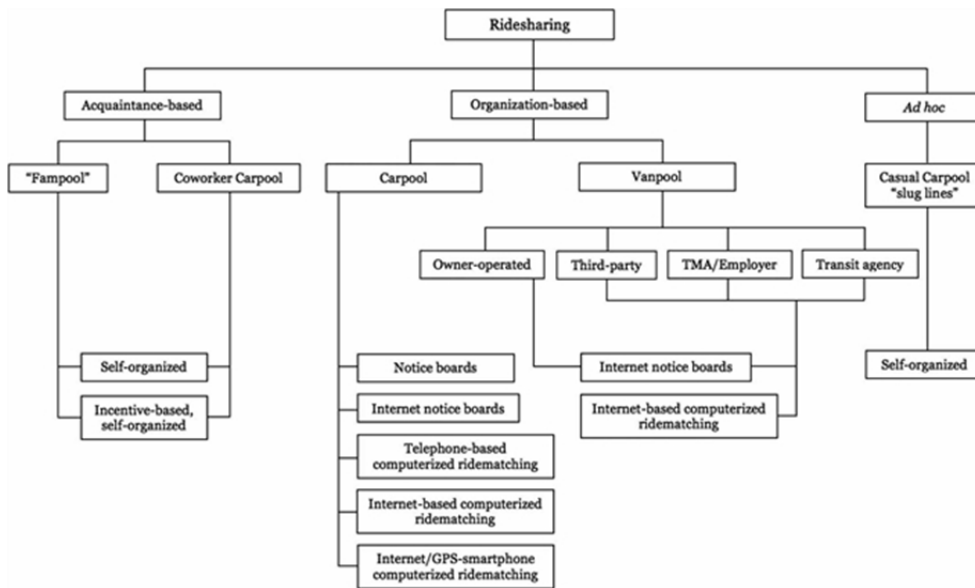
With the new system there is no way to determine who is actually carpooling on any given day, from where, and how frequently. Thus, we were unable to obtain any data for analysis from Commuter Services.

Commuter Services does maintain a set of data for all parking permit holders. This could potentially be used to promote carpooling to groups of drivers in targeted geographic areas in the future.

#### 4.3 Rideshare Matching Platforms at the University of Utah

Ride sharing is a relatively complex behavior that requires potential drivers and riders to be matched geographically and temporally at both ends of a trip. Given both the scale of the university population and the geographic region where this population resides, matching success depends partly on a sufficient number of participants on a given platform to create a network effect.

People interested in sharing rides may use both formal and informal systems to locate partners. Chan and Shaheen (2012) review the history of ridesharing in North America and note that in the United States, it has declined from a 20.4 % modeshare in 1970 to 8-11% today. Figure 5 illustrates typical ride matching options.



**Figure 5. Ridesharing classification scheme, Chan and Shaheen (2012).**

As we began evaluating the Zimride program, it became rapidly apparent that this platform is only one of several ride share matching tools currently available to commuters. In addition to Zimride, UTA offers a vanpool and carpool matching platform. In fact, this is currently the only service listed and linked from the Commuter Services Alternative Modes/U Rideshare page. Additionally, participants in the summer Utah Clear the Air Challenge and the winter Clean Air 4 U Challenge use the platform RideAmigos which also offers a carpooling match service similar to Zimride. Finally, the Off-campus Housing website hosts a message board for carpooling. All four sites will appear in a web search on the term “carpooling” from the University of Utah homepage. We sought information about the features and usage rates of the various platforms to better understand Zimride’s competitive environment.

#### **4.3.1 Zimride**

As noted earlier, Zimride is now a division within Enterprise Rent-A-Car. The corporate representative in charge of the Zimride program is based in St. Louis. She, alongside one other representative, manages all 125 active Zimride campuses, 80+ of which are University/College campus programs. She worked previously for the Enterprise car-share team before moving over to Zimride after it was acquired from Lyft.

As Zimride corporate account development representatives at Enterprise, these two staff work to touch base with all program managers across each respective campuses each month and check in about the programs. Their ability to provide direct or unique support to any individual Zimride program is limited by the size of the portfolio they manage. They do have a limited amount of promotional and marketing materials for the Zimride program which they can offer campuses for tabling events and outreach opportunities. The budget is approximately \$500 per year.

Unfortunately, because of the diversity of clients within the Zimride account portfolio she was not able to share any “wisdom” across all programs. Betsy commented that success is evaluated on different terms at different institutions and across different Zimride programs.

There is a “3-year development model” relative to new Zimride programs at college institutions.

- In the 1st year: the Zimride program is initially launched, and the main goal is simply to gain “signups”
- In the 2nd year: the Zimride program focuses on “posting rides”. Zimride corporate encourages partners to host contests and promotional events attracting riders and drivers in an attempt to grow the network
- In the 3rd year: the Zimride program focuses on “increasing word of mouth” related to the program. During this year “awareness and use of the program become second nature to campus members.”

Enterprise has not conducted any internal or external surveys related to Zimride, so there was no data or information gathered across users, program managers or campus. They do send out occasional short feedback requests to users about the success of their ride matching.

However, the Zimride platform is not equipped with any accurate way to gauge if a ride is completed in a systematic way. Zimride reports and “green” statistics are based upon the assumption that 20% of rides posted are completed. At the outset of the University of Utah’s Zimride program, marketing included a web homepage banner and other advertisements as well as other outreach activities such as tabling at campus events to promote Zimride to new students. After three months, an Instagram promotion with university marketing led to the second surge in new user registrations on the platform. Since then, social media and tabling for a broad range of sustainability programs have been done to promote the platform; however, these have resulted in slower participant growth than first experienced.

#### ***4.3.2 UTA Transit Pass and RideShare***

The Utah Transit Authority (UTA) manages a vanpool and carpool program and has long partnered with the University of Utah for these services. In fact, the UTA carpool platform is currently the primary one promoted and linked from the Commuter Services website. We interviewed the Vanpool Support Specialist who runs the program to learn about the UTA system for carpooling as well as to understand what data might be available for analysis for this project.

The UTA rideshare platform is the second generation of a third-party platform, which replaced a manual matching system formerly done by staff. The provider is Tripspark, a Canadian company. UTA has had a contract since about 2008. The developers are active in upgrading the software platform, often in response to users’ comments or suggestions. UTA pays for the contract and makes it available to regional employers and residents at no cost.

The platform has many similar features to Zimride. It lacks an exclusivity feature—organizations cannot limit carpool matches to only their members. It also mentions employers throughout rather than using terms like “organization” or “school,” so on its face caters less to a student population, although students would be welcome to use it. It does have both regular commuting and one-time ride matching capability.

As far as promoting the services, UTA’s Marketing Department assists program staff. They can offer internal employee surveys to determine how many people may be interested in various modes of

transportation and their home addresses, then help an employer customize outreach to employees – transit, bicycling, carpooling, or vanpooling, for example.

The program manager has access to extensive user data. For the purposes of the project, we were provided a spreadsheet with data for users who indicated an affiliation with the University of Utah. Personally identifiable information was removed but we were given home zip codes and other user data for this analysis.

#### ***4.3.3 Clean Air 4 U/RideAmigos***

RideAmigos is another company that sells a software platform for carpool matching and tracking tools for multimodal travel. The Salt Lake Chamber of Commerce selected this platform for its annual Utah Clear the Air Challenge. Its dashboard is designed for users to self-report actual commute modes and distance within competitive challenges that encourage participants to reduce SOV driving over some period of time, typically one month. The platform also has a module for carpool matching.

Members of the University of Utah community participate in the Chamber’s annual Challenge in significant numbers. The Sustainability Office now sponsors a university-only challenge in February that also uses RideAmigos for tracking purposes. While the carpooling match service is not emphasized, it is available to users. Features are similar to Zimride and Tripspark.

The public relations firm PennaPowers manages the RideAmigos contract and promotes the Clear the Air Challenge on behalf of the Salt Lake Chamber. We were provided data for 2017 Clean Air for U challenge users for comparative purposes. However, the data did not include home zip codes. Also, miles reported for carpooling were self-reported and may not be linked to any ride matching within RideAmigos or another service.

#### ***4.3.4 Carpooling Message Board***

The University of Utah contracts with a vendor, Off Campus Partners, LLC, which provides a website, Off-Campus Housing, which looks and feels like an internal site. It provides a platform for property managers and students to list or search for housing as well as related services such as buying and selling furniture or books. Listings are free.

One of the [message boards](#) is for carpooling. This comes up in a search for “carpooling” from the University of Utah home page. However, the board does not seem to be used actively, with no posts listed as of this month.

Nonetheless, its existence can potentially detract from creating a strong network effect for effective carpool matching. Overall, this message board reflects the lack of coordination and consistent messaging to promote carpooling.

#### ***4.3.5 Usage and Performance of Carpooling Platforms at the University of Utah***

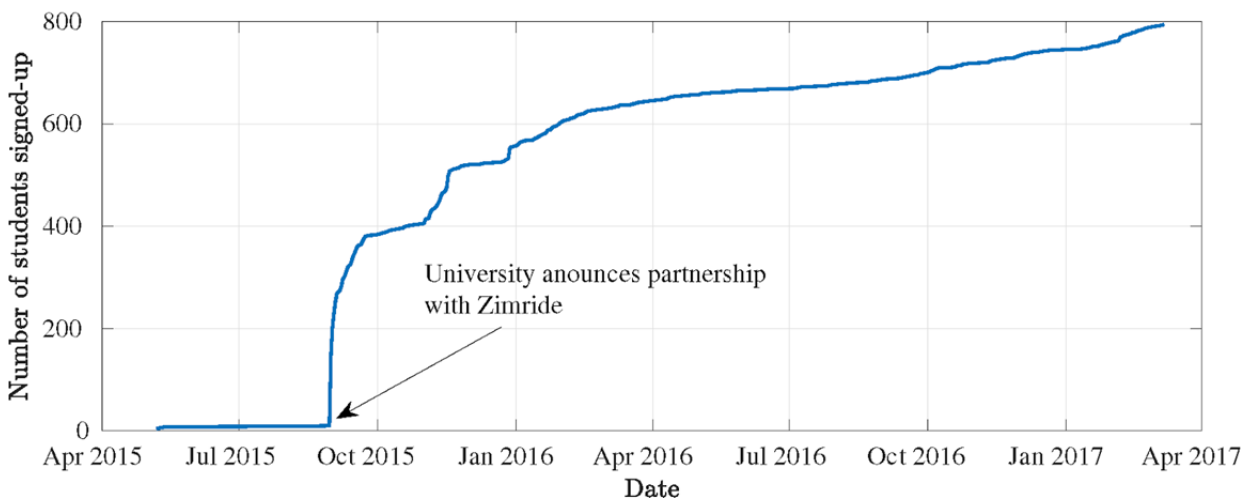
We were able to obtain various data sets for Zimride, RideAmigos, and UTA Rideshare for comparative purposes. We were provided access to user-specific data for Zimride and RideAmigos with the understanding that no personally identifiable data would be shared publicly. Each platform defines



somewhat different data fields and each data set covered a different time period, therefore our ability to compare platform usage and performance is somewhat limited.

We examined participation rates and also whether platforms had unique sets of participants. Zimride is limited to University of Utah affiliates, while RideAmigos and UTA Rideshare can filter their member lists by affiliation with the university. As of March, 2017, Zimride at the University of Utah had 804 members, RideAmigos reported 123 carpool mode users during the Clean Air 4 U challenge in February 2017, and UTA Rideshare had 133 users who identified an affiliation with the University of Utah. A comparison of user names showed no overlap between Zimride users and RideAmigos carpoolers in the Clean Air 4 U Challenge. We did not have user names for UTA Rideshare so could not assess whether its participants had also registered for either of the other platforms.

Figure 6 shows the number of registrations versus date specifically for Zimride. As the figure shows, in August 2015, an initial number of members (approximately 200) signed up for the Zimride service as the service launched. However, although others have continued to sign up for this service over time, we see that the rate of increase is not as high. According to this data, as of March 2017, slightly more than 800 participants have signed up for this service. On the other hand, the total population of faculty, students, and administrative staff at the university is approximately 51,000. Hence, less than 1.6% of the university population has enrolled in Zimride as of March 2017. That said, there are now nearly 5 times more Zimride members than UTA Rideshare members, and by that measure Zimride is comparatively more successful.



**Figure 6: Cumulative number of sign-ups as a function of date.**

## 5.0 ZIMRIDE MARKETING AND COMMUNICATIONS ASSESSMENT

The finding that several different carpool ride matching platforms co-exist at the University of Utah led to a broader exploration of Zimride’s relative visibility on websites and other media platforms. We began the exploration as though we were students unfamiliar with alternative transportation options at the University and we were seeking information about them, including carpooling.

### 5.1 Utah.edu Webpage Experience

Starting at the University of Utah's main page, there was no obvious link to transportation aside for something labeled "Shuttle Tracker" in the menus at the bottom of the layout. As previously noted, using the Google search box on the main page with the term "carpooling" brings up several different options in the top 10, with Zimride the first option. A search may be the most likely place someone would start, but otherwise many people would likely follow links to find relevant webpages directly rather than via search terms. We investigated how deep into the site a visitor must click to find transportation options, and specifically Zimride.

Following links to "Student," "Future Student," "faculty," or "staff" led to an overwhelming amount of content. Students/future students are presented with promotion statements about how great the U is at everything: student life, academics, innovation, athletics, and more. Marketing promotions are focused on technology, diversity, and the range of academic programs available.

### 5.2 Sustainability Webpages

The sustainability homepage is also accessible via a link to "Sustainability" on the bottom of the Utah.edu homepage. In "Future Student" section is one able to, after 3 clicks, also find a link to the U sustainability homepage. Well-informed students or employees may connect sustainability to alternative transportation options, but we believe this is unlikely the first place that they would look.

From the sustainability homepage, three clicks takes the user to carpooling options. The sequence is Engagement (top menu bar)>Programs>Rideshare. This means a person would need to connect Engagement to carpooling. We note that the linked tile for Rideshare is placed at the bottom right among tiles for 13 different program areas. A user must scroll well down the page to find it. Within the Rideshare page, Zimride (Share the Ride) as well as the Enterprise Carsharing program (Share the Car) are presented. The Zimride page itself is unremarkable and basic in visual and written content, and when there, what is noticeable is a plug front and center for Enterprise Carshare. This has the appearance that Zimride is more useful as a tool to advertise the Carshare platform than the Zimride itself.

While the sustainability page boasts "The University of Utah is committed to implementing solutions that encourage better transportation habits to improve our air quality" this isn't clearly communicated through web design and information content, since individuals have to probe deep within the pages to find Zimride or other available services. An "Active Transportation" link is not yet live. There are also no links to Commuter Services resources and its alternative transportation pages from Rideshare. The "Commuter Challenges" page does provide several well-positioned and clear options for Commuting Strategies that are linked to Commuter Services pages on each topic. However, they are again at the bottom of the page and require scrolling down below the first screen.

### 5.3 Commuter Services Webpages

The department of Commuter Services is intended to serve as the central point of contact for transportation matters in and around the University campus. When landing at the Commuter Services homepage, the user immediately sees the content and links are focused primarily on the specifics of the parking permitting system. There is a section of alternative transportation, which includes information

on a ridesharing program and vanpool sponsored by UTA, carsharing through Enterprise, and “bike to the U” options, however, there is no mention of, or link to Zimride. Similarly, drilling down into the “Commuter’s Guide to the U” section under the homepage “Info” tab, one can see the alternative means for commuters to get to campus. Overall, the Commuter Services web presence has limited representation of carpooling and effectively no visible promotion of Zimride and alternate transportation. The majority of links and overall focus of the homepage is on private vehicle parking and permitting.

Carpooling options could be of interest to people who are buying or managing parking permits. The parking permit portal is a third-party vendor product that is linked to the Campus Information System (CIS) and branded for the university. It does appear that some text is customizable. However, neither the carpooling additional permit option nor any links to carpooling platforms are presented during the permit purchase or management process.

In summary, the two primary departments connected to transportation management do not prominently display information and promotion of non-SOV commuter travel options. They appear to be largely siloed from each other and emphasize their own primary programs: in the case of Commuter Services, parking management, and for Sustainability, a broad mix of programs that cover the gamut of topics areas, one of which is sustainable transportation.



## 5.4 Webpage Analytics

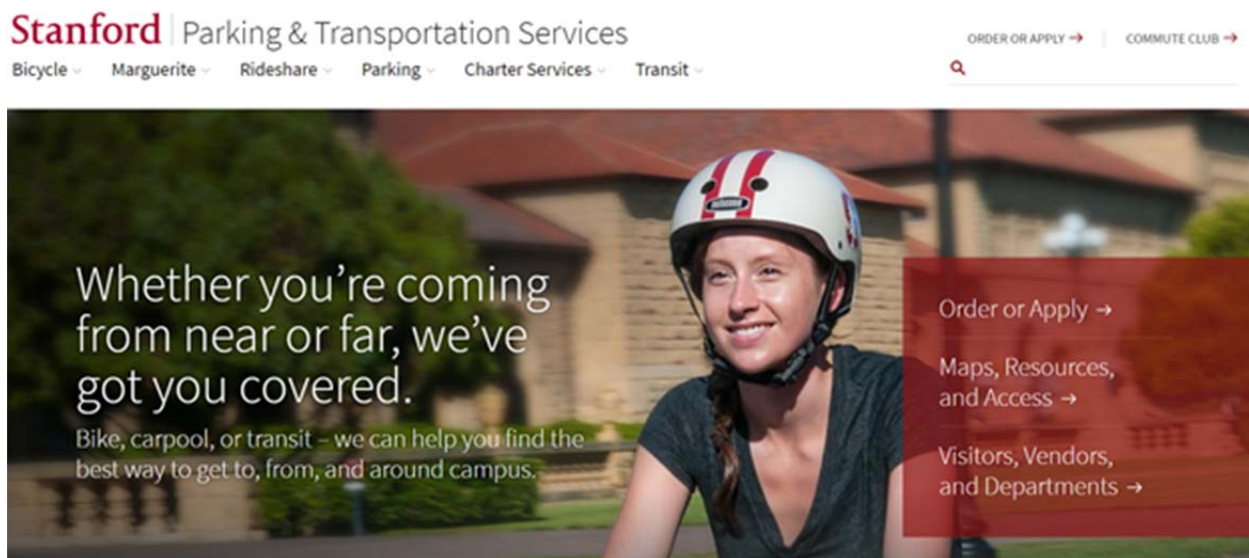
To better understand user behavior and access to web-based information, we requested data analytics (Google Analytics is a commonly used tool) for both Sustainability and Commuter Services websites specific to carpooling/ridesharing and alternative transportation. We learned that Sustainability Office had launched a new website in January 2017 and had no data available for our review. Such data is also not being used actively to track response to promotional activities for Zimride nor overall accessibility to ridesharing information. Commuter Services also does not actively review or benchmark web page traffic.

## 5.5 Transportation Webpages at other PAC12 and Utah Universities

For comparison, we looked at several PAC-12 and select peer school transportation web home pages to understand their respective levels of support for Zimride (if available at the institution) and alternative transportation. Every website was unique in their appearance and it was clear in their layouts that some put more emphasis on alternative transportation options (See Appendix –).

### ***5.5.1 Stanford – Multimodal Options***

Stanford is an example of a school demonstrating a web space that highlights alternative transportation and ride sharing.



As is clearly illustrated in the Stanford transportation landing page, alternate transportation and ridesharing services are presented as comparable options to traditional on campus parking. This is in sharp contrast with the University of Utah and others who do limited advertising of these options. It should be noted that Stanford no longer uses Zimride, however it does provide links to the university sponsored rideshare program.

### **5.5.2 Washington State University - Will I Need A Car?**

Other PAC12 universities provide a clear message to incoming students and staff about their range of mobility options. Washington State University's website, for example, includes a page in the

Community Life section that emphasizes transit and rideshare. It is titled “It’s easy to get around” and highlights that most students do not need a car. The page layout puts bus and Zimride information at the top. Its main transportation pages also highlight alternative transportation, including Zimride with a proportionally more balanced site design between alternative modes and parking information.

WASHINGTON STATE UNIVERSITY

TRANSPORTATION

It's easy to get around

Will I need a car?

For many people, the answer is no. There's a very efficient transit system to and from campus. It's free for faculty, staff, and students. (Others can pay per ride or purchase a pass inexpensively.) Most students who bring cars find that they use the local transit system instead. They leave their cars parked most of the semester.

- [Campus map](#)
- [Pullman map](#)

WASHINGTON STATE UNIVERSITY

Zimride is a private ridesharing network for WSU

## 5.6 Orientation Materials for New Students and Employees

Orientation sessions, trainings, and information packets are other primary communication channels where commuting and transportation options can be promoted to new students and employees. As the AQTF report notes, “Life transitions such as starting a new job or beginning college are time periods when individuals are likely to make corresponding behavior changes, including changing their regular travel modes. It will likely be the first time new employees and students have access to a monthly transit pass, which significantly reduces a barrier to transit ridership. The Task Force proposes the University distribute educational materials and develop online training modules for new employee and student orientations to promote alternatives to single-occupant vehicle travel.” (p. 24). Strategy 4A-2 in the report is thus “Add Alternative Transportation to Orientations.”

To that end, the 2014 Global Changes and Society class produced a video to promote alternative transportation options during new student orientations. This was used for one year and then eliminated because the Orientation Office felt it was too long. A typical new student orientation presentation now briefly highlights the UTA transit system and campus parking options for commuters in one slide of a

PowerPoint presentation. Future presentations could present additional options like bike or walking and carpooling as shown below.



**Figure 7. Current new student orientation slide (left) and proposed slide redesign (right).**

New graduate students do not receive any university-wide orientation or training. The Graduate School and individual departments do provide information packets. However, transportation and commuting options are not covered by the Graduate School in its mailings or on its website. Individual departments may provide information but a comprehensive review was beyond the scope of this analysis.

The Human Resources departments for the main university and Health Sciences provide new employee orientations. The orientations are online trainings. The HR Training and Development website also includes a page entitled "[Employee Resource List](#)." It does include a link to Commuter Services, with a description as follows: "Learn how to buy your parking pass and find out which lots you can use on campus." There is no mention anywhere on various "Prospective Employee" or Benefits pages about alternative transportation-related benefits, such as the Zimride, Carshare memberships and the UTA transit pass. Given that SOV commuting imposes significant time and financial costs to employees and the University of Utah does offer a wide range of other options as well as goals to reduce SOV trips, this oversight is rather glaring.

## 6.0 ZIMRIDE PERFORMANCE IN COMPARISON TO OTHER UNIVERSITIES

### 6.1 Zimride at Other Utah Campuses – Marketing and Performance

#### 6.1.1 *Utah State University*

Our group's successful efforts to contact Zimride program managers at two nearby campuses (USU and BYU) yielded us additional information about Zimride Corporate support, as well as insights into different strategies for success.

The Utah State University (USU) Sustainability Coordinator informed us that it was her own initiative to start their University relationship with Zimride, after taking advantage of the program on a different college campus while she was a student. This staff member's initiative and continuing support for the program has allowed it to remain actively promoted on their campus. Information about Zimride as the principal University ride-sharing platform is available on the USU Web spaces, and is featured on a

high-traffic University member “landing page” (akin to the University of Utah CIS Web space). The USU Sustainability Coordinator confirmed that placement and prominence of information about the Zimride program is a key element of maintaining and increasing ridership.

In addition, the USU Sustainability Coordinator confirmed that the majority of Zimride student use at USU is for “one-time” travel. Security concerns regarding public ride-share boards at USU (before the Zimride program launched) created a partnership opportunity between the USU Sustainability Office and Campus Safety.

The USU Sustainability Coordinator commented that Zimride Corporate has been able to provide a limited amount of promotional materials for tabling events, however noted that these efforts are always coupled with the for-profit “Enterprise Car-share” program, and co-branded as such. Enterprise representatives available to attend at such events are primarily focused on promoting Enterprise Car Share.

### ***6.1.2 Brigham Young University***

At Brigham Young University (BYU) in Provo, the Zimride program is managed by an administrative assistant to the Chief Financial Officer of the University. This administrative assistant advised our group that the BYU contract with Zimride was initiated based on a belief that the platform would function “better than a ride board”, and would – in essence – “run itself”.

A BYU Facebook Webpage for the program was set up, and immediately provided a vital “social network” bridge between students and the program. This social media website facilitates a significant amount of communication about the Zimride program, and allows students to quickly and easily spread awareness of the program to their peers.

Our BYU contact commented that her office does very little to actively manage the Zimride program, and checks in with Betsy from Zimride Corporate once a month for a brief meeting. BYU promotes Zimride primarily by handing out flyers, presenting the program to new students at new student orientations, and working to create a campus promotional video through their creative video department. Orientation events for students at BYU have proved to be some of the best opportunities to effectively promote the program.

Zimride falls into a portfolio of alternative transportation options available to BYU commuters. These include Enterprise Car Share, Rent-a-bike on campus, UTA student discounts (not a free pass), and BYU “ride shuttles” (i.e. the “Ryde” program) provided through a contracted provider. It is worth noting that the Zimride program is the principal and primary ride-sharing platform recognized by BYU, and is promoted as such.

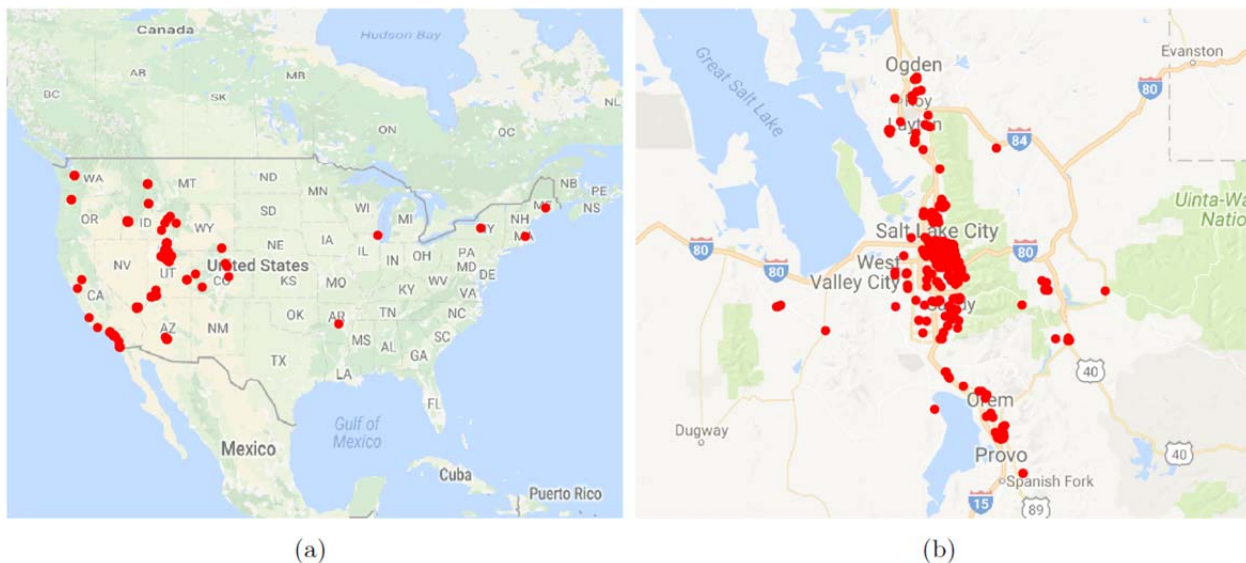
### **6.2 Zimride Performance at Other Western US and PAC12 Universities**

In this section, we perform some preliminary analysis and visualization to understand some of the fundamental explanatory features of the ride sharing behavior among the university members in the University of Utah. We also compare certain metrics of Zimride performance between the University of Utah and other universities in the Western U.S. and PAC12.

### 6.2.1 University of Utah Zimride Dataset Description

Zimride platform provides an “Administration” (admin) page for program managers with proper permission levels to access and analyze user data in a variety of ways. We were granted temporary access to University of Utah data with the agreement that no personally identifiable information would be reported and data security would be maintained. The Admin page provides various filters and graphical analysis tools. Data sets may also be downloaded for more detailed or specialty analysis. We used various reporting tools within the platform and downloaded data for statistical analysis.

The Zimride dataset contains a number of features corresponding to each ride post including: sign-up dates, ride types (one-time or commute), ride posted dates, start city and zip codes, end city and zip codes, trip distances, departure and return times, number of matches with other users, etc., for each user's post. The dataset included information for a total of 453 ride offers or needs posted from August 2015 to March 2017. Although each post contains a start/end city name, not all of them have start/end zip codes. In an effort to make the dataset uniform, we converted each address to a pair of latitude and longitude numbers assigned randomly within the area describing the given city or zip code.



**Figure 8. Origin/destination of the posted rides. (a) Locations across the United States, (b) Zoomed-in version in the Greater Salt Lake City area where most of origins/destinations are located.**

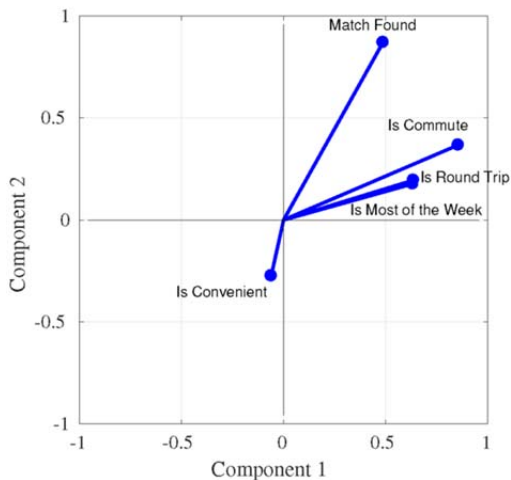
Figure 8 shows the origin/destination of the ride posts across the United States. As the figure shows, the locations are spread throughout the country and are not limited to Utah only. This is because there are two categories of posts: one-time travel and regular commutes. We note that most of the rides are located in the Greater Salt Lake City area. Hence, in Figure 8 we have zoomed-in to show the rides within this area. As the figure shows, the density of the ride posts in the eastern Salt Lake Valley is significantly high. Moreover, a considerable amount of the rides is located in Provo, Ogden, and Park City.



### 6.2.2 Summary of Our Results of Key Factors

As mentioned above, the goal of this section is to study the ridesharing behavior of users at the University of Utah. The key idea is to apply *principal component analysis* (PCA) to the Zimride dataset in order to reveal factors that contribute the most to the success (i.e., if a match is found) of a given ride post. We also added UTA route data to the analysis to assess relative convenience of public transportation in a given geographic area. A more detailed explanation of the PCA statistical approach can be found in Appendix A.

The analysis allows for comparing multiple factors. In a PCA chart, the angle between two components shows to the degree of relationship between them. Smaller angles indicate more correlation between the factors.



**Figure 9. Results of factor analysis: matches found in relation to home area transit convenience and commute characteristics.**

In particular, using this approach, we find that the distance to the university and availability of convenient public transportation in the geographic area are the main factors explaining the behavior of users looking for ridesharing. For example, we find that the likelihood of a commute ride post being matched is **inversely related** to whether the origin is within the Salt Lake City area, where it is very convenient to use the public transportation to reach the university. Most commute rides were round trips and were planned for at least three days a week. These were also the most likely to be matched.

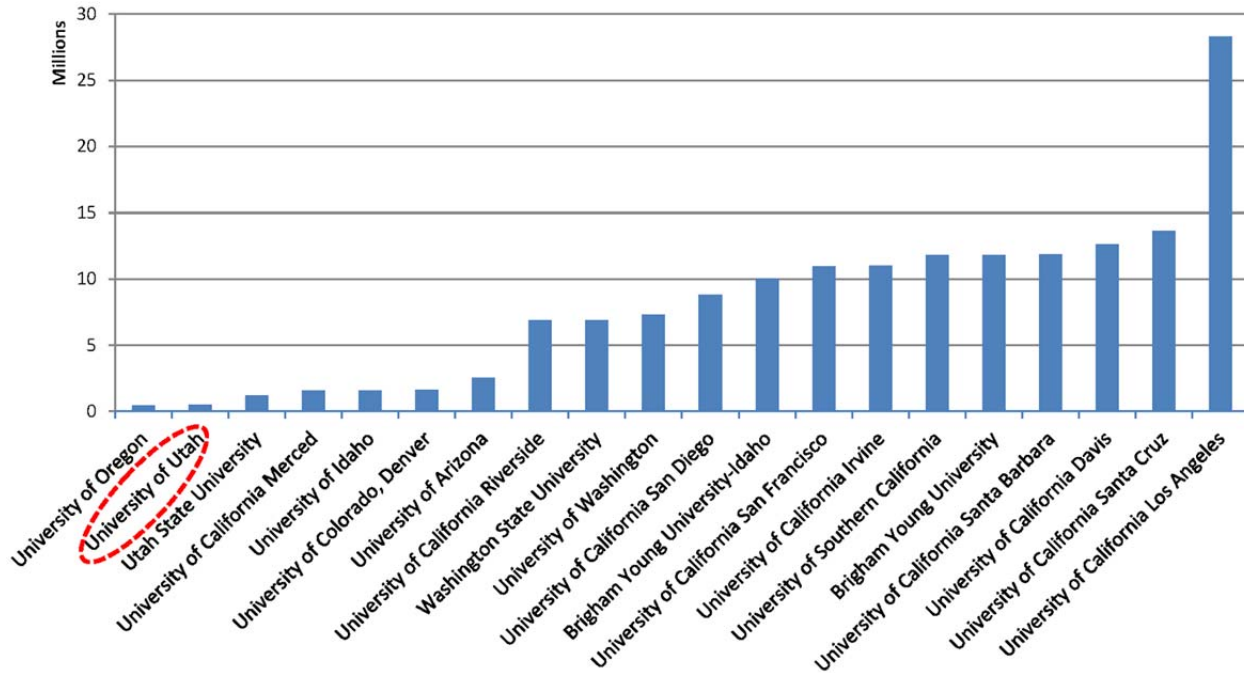
On the other hand, for one-time (e.g., travels during the break) ride posts, the likelihood of being matched is very closely related to the travel distance. Short distance travels (less than 20 miles) are not usually of interest for users. We also find the factors that do not significantly contribute to the success of each specific ride.

### 6.2.3 Zimride in the Context of Other Universities

To begin with, we obtained Zimride activity data reported as posted ride miles by member campus, which is publicly available via the Zimride.com website. This data shows that the Zimride carpooling platform has not been a success by this metric at the U of U when compared to a number of major

universities in the US. We note the caveat that these figures are not normalized for a set time period but rather are total miles posted since program inception. Unfortunately, we were not able to obtain start dates for each program despite requesting the information, so therefore the results are likely skewed by time elapsed for Zimride at various campuses. That said, Zimride has only been available since about 2010.

Figure 10 shows that the U has the second least posted miles among this group of universities. Note that the third least posted mile is associated with the Utah State University, but this is still more than twice the miles than reported for the University of Utah.



**Figure 10: A comparison of total posted miles in Zimride carpooling platform among some major universities in the United States**

The working hypothesis for this study was that the University of Utah’s transit pass program and regional transit network negatively affects the utilization of Zimride-facilitated carpooling. The PCA analysis does support that users in geographic areas that lack convenient transit service are the most likely to post rides.

In addition to the PCA analysis, we sought to determine whether other universities in our comparison group also provide discounted or free transit passes to student and employees and if this appeared to influence Zimride use. Since we did not have direct access to Zimride data from other campuses we could not perform detailed analyses but we could look for any basic patterns. We used data from the Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Reporting and Tracking System (STARS) and also transportation information available directly from university websites.

According to our research, the following universities also provide free<sup>1</sup> transit passes to students and employees or are located in a community with fare-free transit service: Utah State University, University of Oregon, Oregon State University, Stanford, University of Colorado at Boulder, University of Washington, and Washington State University. The University of Colorado at Denver provides free passes for students and discounted passes for employees; all other universities we reviewed provided lower levels of transit subsidies and discounts to students and staff. Of the campuses with free transit access, Utah State University, the University of Oregon, University of Washington, Washington State University, University of Colorado at Denver use Zimride for carpool matching. Stanford, University of Colorado at Boulder, and Oregon State University use other carpool matching platforms.

We note that some universities such as Washington State University and the University of Colorado at Denver performed much better than University of Utah in terms of the total posted mile in Zimride, despite also having free transit pass programs. While transit availability and cost does shape commuter choice, most U.S. cities have relatively mediocre service density and frequency as compared to many other countries. Thus, even with a free transit pass program, there appears to be a large untapped pool of potential Zimride users in areas with inconvenient or non-existent transit service. This applies to both regular commuting and one-time rides.

## 7.0 CARPOOLING IN THE CONTEXT OF OTHER ALTERNATIVE TRANSPORTATION INITIATIVES

As we investigated the Zimride program, we became aware of its place in the larger context of other sustainable transportation-related program innovation. The rubric of “campus as a living laboratory” has gained traction within academia, giving students project-based learning experiences while contributing to larger institutional goals. The Global Changes and Society course is but one such learning opportunity for students. The Sustainable Campus Initiative Fund, student government, and various departmental funds can provide financial resources for implementation. Often, such projects are designed as pilot programs to test out concepts before launching larger initiatives. The 2014 and 2015 Global Changes and Society classes created several alternative transportation-related projects, once of which as previously noted was Zimride.

In recent years, there have also been two efforts by University of Utah students to start bike sharing or long-term rental programs on campus. The Associated Students of the University of Utah (ASUU) designated its annual class gift for a fleet of cruiser-style bicycles that could be checked out for the semester by students. In a similar effort in 2014, a group of Global Changes and Society students received a SCIF grant for a new bicycle rental program. They launched with a pilot fleet of 10 bicycles that were more appropriate to the terrain of campus than the cruiser bicycles in the ASUU project.

In both cases, the initial demand for the bike rental service was high. However, there was insufficient longer-term administrative support to manage either the programs. In both cases the pilot projects were shuttered. Other significant issues beyond staffing were storage space and maintenance of the fleets, as well as choice of bicycle model (the terrain of campus limits the functionality of cruiser-style

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<sup>1</sup> By “free” we mean passes provided with no point-of-purchase cost; users often do, however, pay indirectly through student or other university fees.

bicycles. Also, some bicycles were stolen or not returned, and there were no funds to replace them.

Bicycle sharing programs have overcome such challenges and become successful on other campuses, such as USU's Aggie Blue Bikes. Unfortunately, there appears to be no real support for such programs at the University of Utah at this time.

Other bicycle-related student-initiated projects on campus have included a Bike to the U Day event and a branch of the Bicycle Collective on campus. Like the bike rental programs, these have been student-initiated pilot projects. The Bicycle Collective ultimately lacked sufficient long-term administrative support to continue, and the Bike to the U Day was incorporated into the fall Farmers Market as a theme day, providing capacity to keep it going in some form.

Commuter Services has also initiated various new programs to promote non-SOV commuting. Based on a recommendation in the 2011 Bicycle Master Plan, the department created a bicycle coordinator position. When the employee who was hired for the position resigned, the position was not refilled and duties were reassigned or dropped. However, a new active transportation manager position has now been created at the Sustainability Office and an advisory committee has been formed.

To increase transit access in the Harvard/Yale neighborhood south of campus with limited UTA options, in August 2014 the department launched a free shuttle bus service, the Red Flyer. Service hours were from 7-10 am and 3-6 pm to cover peak commute hours. To promote the service, Commuter Services used internal employee data records to create a list of university-affiliated residents in the area. Promotional flyers were distributed directly to the doors of potential riders close to the route. Commuter Services also marketed the service via its website, campus newsletters, and other media channels. The department invested significant resources in this pilot project and its assessment. After several months, the results were analyzed. Despite extensive promotional efforts, ridership was low and costs comparatively high, so the Red Flyer route was cancelled after one semester.

An effort to increase transit ridership for attendees at university sports events has been more successful. The Athletics Department provides funds to allow attendees to use their event tickets as transit passes.

Overall, there appears to be a frequent gap between innovative pilot programs and their institutionalization. There are likely a variety of reasons for each project's relative success or failure. More broadly, we note a lack of publicly available program assessment reports as a basis on which to judge performance. We also note the shift of numerous alternative transportation-related programs from the Commuter Services portfolio to the Sustainability Office. This may provide more program support, especially for student-created projects. However, this also seems to complicate coordination and diffuse authority. Regardless of a given program's administrative home, the commitment of sufficient staff and financial resources are needed to give programs the best possible chance to succeed.

## **8.0 IMPROVING ZIMRIDE AND THE UNIVERSITY'S COMMITMENT TO SUSTAINABLE TRANSPORTATION PRACTICES**

### **8.1 Conclusions**

To date, Zimride has shown relatively limited success. However, as compared to UTA Rideshare and Rideamigos, it has still gained a user base of approximately six times that of the other services in its first 18 months of operation: 800+ registered Zimride users as opposed to ~130 for each of the others.

Our data analysis led to several specific conclusions:

- The underlying assumption that carpooling best serves geographic areas where transit service is limited is confirmed based on user data from Zimride, UTA Rideshare, and RideAmigos;
- Commute trips rather than one-time ride posts match most frequently;
- Given the university-affiliated population residing in the area where most registered users located, especially the east side of the Salt Lake Valley and Park City, there is significant room for increased participation;
- Other universities in Utah and the PAC12 with both Zimride and free transit pass programs show significantly higher success rates for Zimride, and therefore transit pass access alone is unlikely to be determining factors;
- The lack of visibility or penetration of Zimride as the university's preferred platform across internet sites is likely a causative factor in low participation;
- The University of Utah's public commitment to sustainability is frequently stated but implementation and reporting remains challenging due to a mix of complex and competing demands within the institution;
- University leadership should strengthen the mandate to reduce SOV trips, increase resources to Commuter Services, and improve reporting and accountability to meet stated goals.

For students, Zimride and similar ride matching platforms may be more useful for one-time rides than for regular commutes. University employees may well be a better target for regular commute ride matching but outreach to date has focused primarily on students. Overall, ride sharing mediated by platforms like Zimride do have a place in the university's efforts to reduce SOV travel. In particular, increased ride sharing to the university from the eastern Salt Lake Valley could help reduce congestion in the Foothill corridor. This is a significant issue for university commuters and Salt Lake City residents alike.

### **8.2 Recommendations**

Based on our analysis, there are numerous actions that university program coordinators and administrators can take to improve both ride sharing (Zimride) specifically and alternative transportation support more broadly. Several of these strategies are already documented in current plans and reports but have not been implemented. Others are in progress or longer term. Many of the short-term strategies for increasing the success of Zimride are low cost in terms of direct programmatic expenses but do require additional staff time and coordination.

Key overarching elements include:

- Increase Zimride program visibility as the preferred carpool matching platform;
- Use targeted marketing campaigns using geographic data and analytics, especially for residents of the eastern Salt Lake Valley;
- Increase frequency of collaboration and reporting between departments engaged in alternative transportation activities (Commuter Services, Sustainability Office, Facilities). This may provide an opportunity for streamlined efforts and reduced waste for resources allocated to alternative transportation.
- Continue to increase funding/support for alternative transportation program capacity including the current active transportation coordinator (SO), the creation of an alternative transportation coordinator position (CS), and staff use of analytics regarding available transportation data from UTA and commuter transportation surveys to drive informed decisions for the future.

The following is a more detailed list of our suggestions.

#### NEAR-TERM: INCREASE VISIBILITY AND TARGET PROMOTIONS

- 1) Re-organize, coordinate, and greatly expand ride sharing/Zimride information on U Web spaces
  - a) Commuter Services Pages
    - i) Add Zimride to Commuter Services Ride share page as recommended matching service, and remove references to bicycling, transit, and U Car Share
    - ii) Add Zimride information and registration link as option in parking pass purchase portal
    - iii) Add Rideshare / Zimride to the [Commuter's Guide to the U](#) page
    - iv) Add carpooling permit terms to [New Permit System](#) and [New Permit System FAQ](#) pages
    - v) Link relevant Sustainability Office pages to Commuter Services pages
  - b) Sustainability Office Pages
    - i) Move Ride Sharing image link out of the doghouse (bottom left corner of Programs page) – group all sustainable transportation-related information together on page/site
    - ii) Promote Zimride and alternative transportation options to University members at times personal/professional transitions (AQTF)
    - iii) Increase cross-linking to Commuter Services pages
    - iv) Periodically promote ridesharing Sustainability main page banners and work with U Communications and Marketing to rotate promotions on main page
    - v) Work with Zimride corporate managers to create “how to” zimride videos (similar to RideAmigos FAQ).
  - c) Other U Web Pages
    - i) Replace inactive Sustainability Pledge on [Students](#) page with Zimride information
    - ii) Evaluate best placement for additional Zimride promotions and links across U sites: Housing and Residential Education, Outdoor Recreation, Future Students, ASUU and ASUU Money Management Center, Student Life, etc.
- 2) Use LCD screens around campus for Zimride advertising

- 3) Provide Zimride information to departmental sponsors of off-campus events and encourage them to share it (Bennion Center, PRT, Staff Council, etc.).
- 4) Design print and social media campaigns for Zimride - Re-start MoveU campaign
  - a) Address the safety and cost saving dimensions of ride-sharing in Zimride publicity with positive stories of users
  - b) Connect Clean Air 4 U winners and stories to ride sharing and broader sustainable transportation stories
- 5) Re-run or update SustainableU newsletter stories (5 stories to date between September 2015 and July 2016).
- 6) Measure rideshare online campaign results using the platforms and tools which are currently available.
- 7) Enlist departmental green teams to promote Zimride.
- 8) Enlist HRE resident assistants and University Student Apartment Managers to promote ride sharing and alternative transportation.
- 9) Target new student and employee orientation materials to promote Zimride and alternative transportation.
- 10) Develop a broader marketing campaign to promote the university and region as a place for successful personal car-free living.

NEAR-TERM: GATHER AND ANALYZE ADDITIONAL ZIMRIDE USER AND COMMUTER DATA

- 1) Periodically survey current Zimride and other ride matching platform users.
- 2) Add more carpooling/ridesharing questions to GHG transportation survey

NEAR-TERM: TARGET LIKELY RIDESHARE PARTICIPANTS

- 1) Develop targeted ridesharing campaigns for staff who have purchased parking permits using home addresses and work site locations (Red Flyer campaign model, but via email rather than door-to-door).

LONGER-TERM: ENHANCE THE ENVIRONMENT AT THE U FOR ALTERNATIVE TRANSPORTATION USE AND SUCCESS [ADMINISTRATIVE LEADERSHIP].

- 1) Provide sufficient funding and staff resources to implement AQTF recommendations and make real progress toward non-SOV commute goals
- 2) Create graduate research assistant positions to support students from appropriate disciplines to work on specific projects and analysis
- 3) Strengthen the mandate for Commuter Services to advance university non-SOV commute goals
- 4) Re-align and clarify resources and authority of Sustainability Office and Commuter Services regarding alternative transportation
- 5) Increase collaboration and expertise by creating a working committee for alternative transportation
- 6) Measure and publicly report transportation mode share trends and other relevant metrics.
- 7) Continue parking stall reduction and permit cost increases
- 8) Prioritize efforts to avoid of new parking lot construction.

## APPENDIX A – UNIVERSITY OF UTAH ZIMRIDE USER ANALYSIS

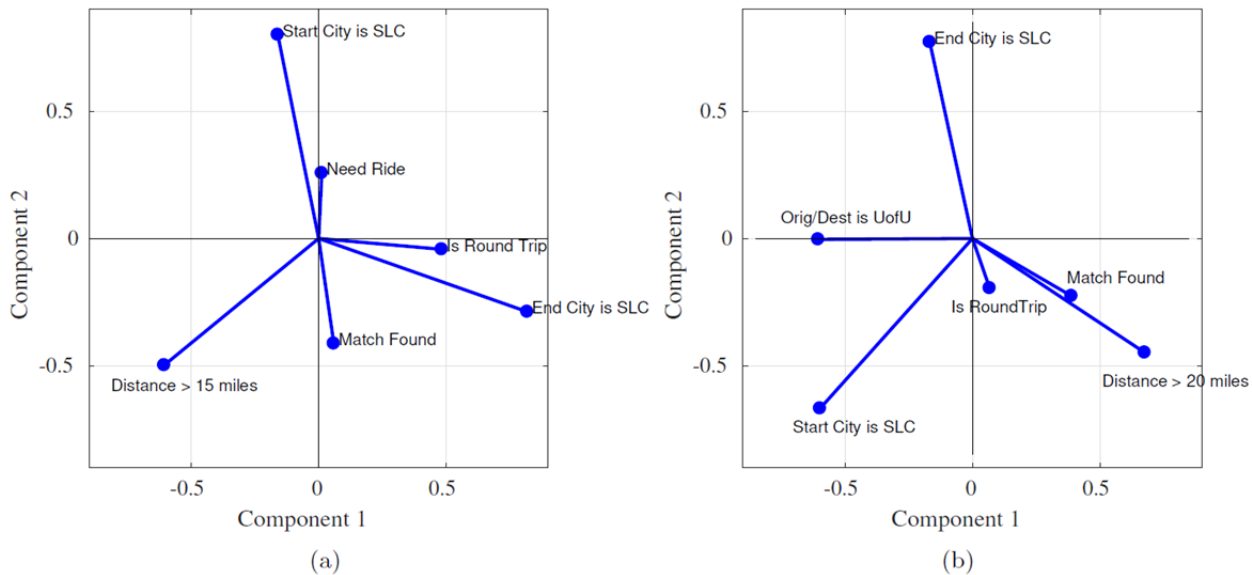
### Principal Component Analysis (PCA)

In this section, we deploy PCA to analyze different components that have the most contribution in making a given ride post a successful one. In other words, our aim is to come up with a set of explanatory elements that demonstrates why a given ride post was matched a number of times, whereas any other user did not match another one.

The method that we used here is based on PCA. This is a statistical technique to explore data sets with multiple potentially correlated factors. In particular, we extract a number of features from our dataset and construct a data matrix that holds those features for different ride offers/requests. Next, we utilize PCA to find the most important *principal components* that describe the features most efficiently. The caveat with principal components is that they are formed by a linear combination of the observed inputs and do not necessarily describe something meaningful (i.e. correlation is not necessarily causation). Hence, in order to extract a useful information from them, we find the variation of the observed input features along the principal components. This technique is commonly referred to as the *factor analysis* in statistics literature.

### ***Commute Rides***

Figure A1 shows the result of our analysis on the rides which are marked as *commutes*. We form the input data matrix according to whether or not (i) a given ride starts from Salt Lake City (Start City is SLC), (ii) the ride ends at SLC (End City is SLC), (iii) the trip distance is larger than 15 miles (Distance > 15 miles), (iv) the trip is marked as round trip (Is Round Trip), (v) the ride post is a request (Need Ride), and finally (vi) if the ride is matched with other requests/offers (Match Found). Hence, the elements of the input matrix are 0 or 1. The horizontal and vertical axes represent the first and second principal components, respectively.



**Figure A1: Results of the factor analysis on (a) commute rides, and (b) one-time rides.**



From the results of Figure A1, we are in particular interested in the direction of Match Found, and its relation with other observed features. For example, one important result is that Start City is SLC is negatively correlated with Match Found. Hence, in most cases, the matched rides are those with origin outside of the Salt Lake City. Our explanation is that ride sharing is not as attractive for users who live in Salt Lake City and are close to the University of Utah because there exist more practical ways such as using the public transportation system that is free for them. The same observation can also be seen from the partial correlation of Distance > 15 miles with Match Found. Note that Is Round Trip is approximately orthogonal to Match Found. Hence, there is no significant correlation between whether or not a given ride is a round trip and it is successfully matched.

### ***One-Time Rides***

In the next experiment, we analyze the ride posts that are marked as *one-time*, i.e. are not commutes. Figure A1 demonstrates the result of our analysis on these rides. We form the input data matrix similar to the previous part with some adjustments. In particular, the input data matrix is formed according to weather or not (i) a given ride starts from Salt Lake City (Start City is SLC), (ii) the ride ends at SLC (End City is SLC), (iii) the trip distance is larger than 20 miles (Distance > 20 miles), (iv) the trip is marked as round trip (Is Round Trip), (v) the origin or destination of the ride is the university of Utah (Orig/Dest is UofU), and finally (vi) if the ride is matched with other requests/offers (Match Found). Again, the elements of the input matrix are 0 or 1.

By examining Figure A2, we can draw a number of conclusions. In particular, in this case, whether or not a match has been found is strongly correlated with if the distance is more than 20 miles. Hence, among one-time ride posts, long distance trips are more frequently sought. On the other hand, whether or not the origin is Salt Lake City is not very relevant to getting a match in this case, as opposed to the previous case. This suggests that successfully matched one-time rides are requested by users who live in Salt Lake City as well as those who live far away.

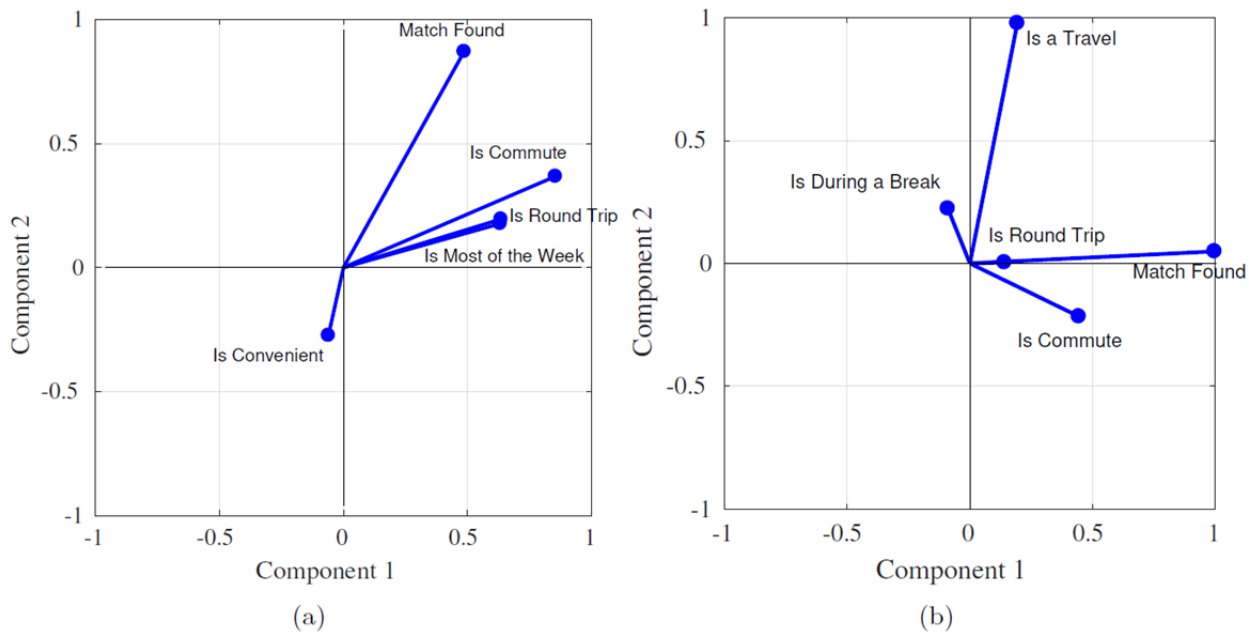
### ***Rides to the University***

This subsection is aimed at finding the most important principal components that describe rides *to the university* most efficiently. The input data matrix is created taking into account whether or not (i) a given ride is marked as a round trip (Is Round Trip), (ii) the ride post is a commute (Is Commute), (iii) the availability of a convenient public transportation to the university (Is Convenient), (iv) the ride/offer is requested for more than 3 days a week (Is Most of the Week) and finally (v) if the ride is matched with other requests/offers (Match Found). Again, all the elements of the input matrix are 0 or 1.

The criterion we have considered to determine whether a location is convenient in terms of traveling to the university by means of public transportation is as follows: Considering the latitude and longitude describing the start location of a given ride, Google Maps gives us the average transfer time using public transportation. If this time is less than 50 minutes, we consider it as convenient.

Figure A2 shows that whether a match has been found for a given ride is negatively correlated with if there is a convenient public transportation. It is worth mentioning that more than 73% of all the matched rides to the university are those whose origin does not have access to convenient public

transportation. The average transportation time for the matched rides to the university is about 80 minutes. It can be concluded that most of the successful carpools to the university are associated with origins with poor access to public transportation.



**Figure A2: Results of the factor analysis on (a) ride to the university, and (b) rides from the university.**

### *Rides from the University*

The focus of this subsection is on finding the most important principal components that describe rides *from the university* most efficiently. The input data matrix includes whether or not (i) a given ride is marked as a round trip (Is Round Trip), (ii) the ride post is a commute (Is Commute), (iii) the ride can be considered as a travel (Is Travel), (iv) the ride is requested during a university break (i.e., Fall break, Christmas break, Spring break or summer break) (Is During Break) and finally (vi) if the ride is matched with other requests/offers (Match Found). Again, the elements of the input matrix are 0 or 1.

The criterion we have considered to mark a given ride as a travel is as follows: Considering the latitude and longitude describing the end location of a given ride, Google Maps gives us the average transfer time using public transportation. If this time is more than 2 hours, we consider it as a travel.

Most of the ride offer/request posts in this category are associated with travels. As Figure A2 shows, the rides with matches are not correlated with if the ride has been posted during a university break. It can be concluded that most of the successful carpools starting from the university occurred during a non-break time. This shows the lack of awareness among students to use Zimride during the university breaks. Moreover, the figure shows that most rides with matches are round trips, thus demonstrating that among the trips starting from the university primarily round trip ones are in demand.

## APPENDIX B - SUGGESTED COMMUNICATION MATERIAL DESIGNS FOR PROMOTING ZIMRIDE AND NON-SOV COMMUTING

### Commuter Services Main Page

This page currently emphasizes driving, parking, and permits. Because there is limited mention of ridesharing visible, SOV travel is effectively the mode that is being privileged and promoted. Five of the six shortcut buttons relate to parking or permits. The top menu is broader, but still starts with parking. Some recommended design and menu changes are illustrated below.

The screenshot shows the current website layout with a top navigation bar (DRIVE AND PARK, BIKING, TRANSIT, RIDESHARE, EVENTS, INFO), a main heading 'COMMUTER SERVICES', and six shortcut buttons: BUY/MANAGE PERMIT, MANAGE WAITLIST, PAY TICKET, APPEAL TICKET, LIVE SHUTTLE MAP, and PARKING MAP. Below the buttons is a banner image of a bus with a 'SPECIAL EVENT' sign.

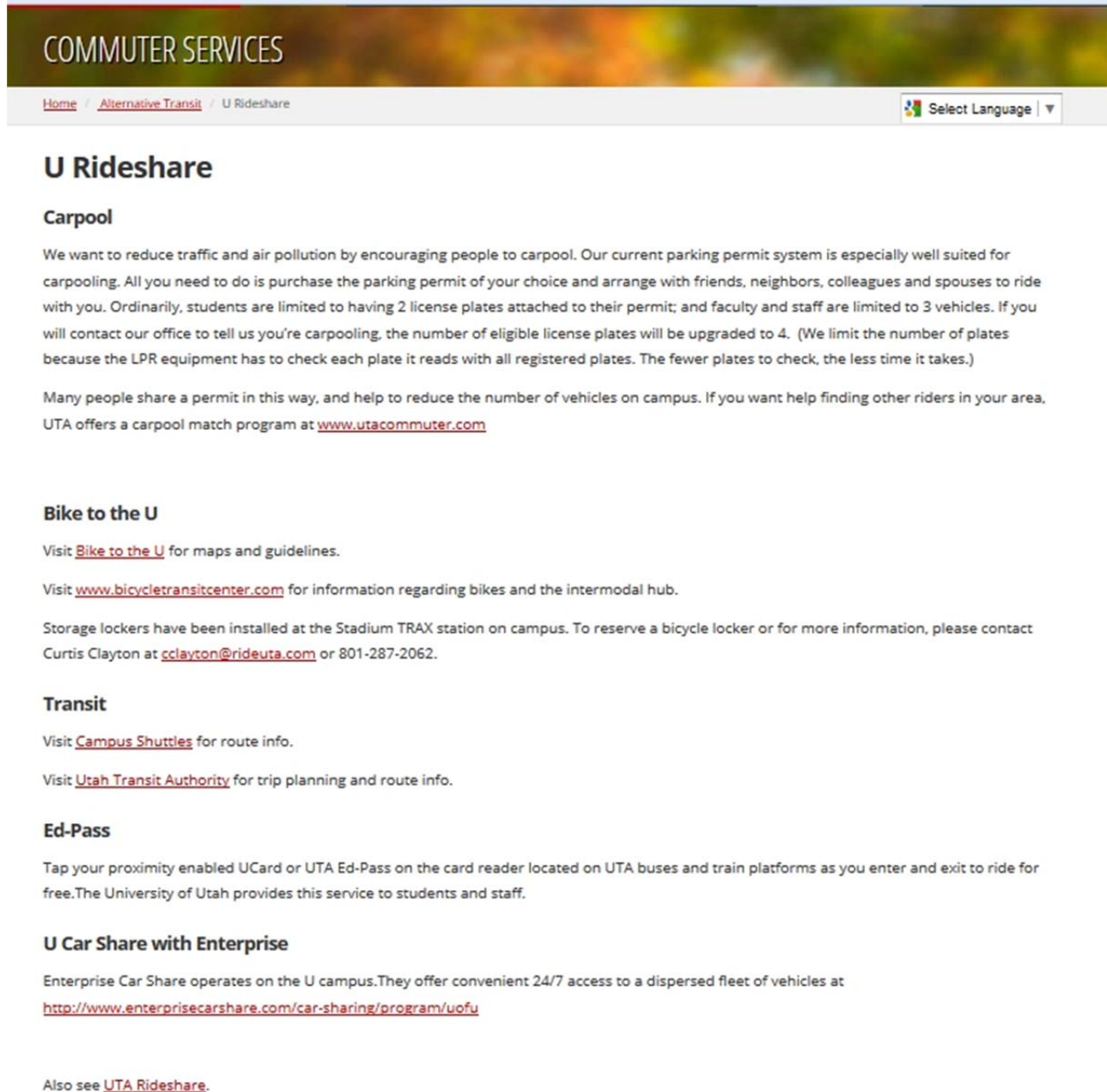
DRIVE AND PARK	BIKING	TRANSIT	RIDESHARE
*All existing links including bubble icons on front page *Permit Types	*Add link to Bike routes into campus *Add link to city bike map *Keep existing Bike links	*UTA you're your trip link *UTA <u>Trax</u> link *UTA Bus link *UTA Fronrunner *On Campus Shuttle link	* <u>ZimRide</u> link * <u>Ushare</u> link *Vanpool link * <u>CarShare</u> *Other existing links

BUY/MANAGE PERMIT	BIKING	RIDESHARE	TRANSIT PLANNER	LIVE SHUTTLE MAP	PARKING MAP
*existing links *Move other parking bubbles here (Manage waitlist, Pay Ticket, Appeal Ticket)	*Add link to Bike routes into campus *Add link to city bike map *Keep existing Bike links	* <u>ZimRide</u> link * <u>Ushare</u> link *Vanpool link * <u>CarShare</u> *Other existing links	*UTA Transit Planner link	*existing link	*existing link

## Commuter Services U Rideshare page

The Commuter Services U Rideshare page does begin with carpool as an option. However, it does not mention Zimride at all. It then lists several other alternative modes that have their own pages and links elsewhere. It does not link to any Sustainability Office pages. We recommend a complete revision to correct this. If Commuter Services would still like to reference UTA Rideshare, then we recommend that Zimride be described first and designated as the university's recommended and most popular matching service. See the Utah and Washington State University Zimride pages that follow, which can also be a model for the Sustainability Office page.



**COMMUTER SERVICES**

[Home](#) / [Alternative Transit](#) / [U Rideshare](#) Select Language ▼

## U Rideshare

### Carpool

We want to reduce traffic and air pollution by encouraging people to carpool. Our current parking permit system is especially well suited for carpooling. All you need to do is purchase the parking permit of your choice and arrange with friends, neighbors, colleagues and spouses to ride with you. Ordinarily, students are limited to having 2 license plates attached to their permit; and faculty and staff are limited to 3 vehicles. If you will contact our office to tell us you're carpooling, the number of eligible license plates will be upgraded to 4. (We limit the number of plates because the LPR equipment has to check each plate it reads with all registered plates. The fewer plates to check, the less time it takes.)

Many people share a permit in this way, and help to reduce the number of vehicles on campus. If you want help finding other riders in your area, UTA offers a carpool match program at [www.utacommuter.com](http://www.utacommuter.com)

### Bike to the U

Visit [Bike to the U](#) for maps and guidelines.

Visit [www.bicycletransitcenter.com](http://www.bicycletransitcenter.com) for information regarding bikes and the intermodal hub.

Storage lockers have been installed at the Stadium TRAX station on campus. To reserve a bicycle locker or for more information, please contact Curtis Clayton at [cclayton@rideuta.com](mailto:cclayton@rideuta.com) or 801-287-2062.

### Transit

Visit [Campus Shuttles](#) for route info.

Visit [Utah Transit Authority](#) for trip planning and route info.

### Ed-Pass

Tap your proximity enabled UCard or UTA Ed-Pass on the card reader located on UTA buses and train platforms as you enter and exit to ride for free. The University of Utah provides this service to students and staff.

### U Car Share with Enterprise

Enterprise Car Share operates on the U campus. They offer convenient 24/7 access to a dispersed fleet of vehicles at <http://www.enterprisecarshare.com/car-sharing/program/uofu>

Also see [UTA Rideshare](#).

## USU Rideshare

### Rideshare

Utah State University and Zimride from Enterprise are now offering a money-saving, air quality-enhancing way to share rides one time or every day. Zimride is a unique way to carpool, using social networks to help you find riders with similar interests and schedules. The interface provides the security of sharing rides only with USU employees and students. After all, if you're sharing the same destination, you might as well share the same ride too. Over 1200 USU students and employees have joined.

1. Set up a profile with your USU A# on [zimride.com/usu](http://zimride.com/usu).
2. Search for open seats.
3. Post a ride or carpool of your own.



## WSU Zimride is here !

**It's new to the WSU community.**

**WSU Zimride is building a critical mass of riders and others providing rides.**



Join the Ride!



#### What is WSU Zimride?

Zimride is a fun and easy way to share the seats in your car or catch a ride. With Zimride, you can find WSU friends, classmates, and coworkers going the same way you are. Zimride is WSU's private social network for ridesharing. Whether you need a ride to the airport or want to lower the costs of your commute, just post your ride on [WSU Zimride](http://WSU Zimride) and we'll match you up with other Cougars making the same trip.

#### Who can use this site?

WSU Zimride requires a "wsu.edu" email address. You can also sign in using your Facebook account if you are part of the WSU network.

#### Have a car? Need a ride?

[WSU Zimride](http://WSU Zimride) helps you offer or request rides for commutes, road trips, and popular events. If you have a car, split costs by offering rides. If you don't have a car, find rides where you need to go.



**STOP THE MADNESS SHARE YOUR RIDE**

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### Online databases and datasets for analysis

- Sustainability Tracking, Assessment & Rating System™ Dashboard, available at <https://stars.aashe.org/institutions/data-displays/dashboard/> (member access required to download data).
- Zimride Administrative Tools - authorized access only, which was temporarily granted to report authors.
- RideAmigos Clean Air 4 U Dataset, authorized access only, requested datasets downloaded and provided to report authors by program managers.
- UTA Rideshare Dataset, authorized access only, requested datasets downloaded and provided to report authors by program managers.

### Unpublished Reports

- Corkery, Georgie. (2016). Zimride: Another car off the road. [class paper].
- University of Utah Facilities Management (2014). Commuter survey. Salt Lake City, UT.