

Introduction

Miami University has utilized a bus system for the transportation of its students and community members for more than ten years. As of this August, the Butler County Regional Transit Authority (BCRTA), in partnership with Miami University, took over transportation from First Transit Incorporated for Miami's Oxford campus and the surrounding communities. According to Lieutenant Ben Spilman, the Director of Parking and Transportation Services, the university made this change as part of its commitment to environmental sustainability and cost effectiveness on campus. While the change was made to decrease single-vehicle dependence amongst students at Miami, it has subsequently resulted in complaints from students, and the change has caused a major inconvenience to those students who depend on the bus for day-to-day transportation.

Our study considered the feasibility of reconstructing the bus routes and schedules provided by the BCRTA services on the Oxford campus, as well as reintroducing certain luxuries regarding usability that were provided by First Transit Inc. We believe that this report will be of interest to you, the Director of Parking and Transportation Services, because it highlights areas in which the university can improve the BCRTA system on campus in order to continue to meet cost and sustainability goals. This study investigated the feasibility of restructuring the current bus routes by BCRTA in order to meet the cost and sustainability goals. Based on our specific criteria and research methods, we recommend that the university not change the current bus routes, but rather, further research the hub and spoke method of transportation for future implementation on Miami's campus.

Criteria for Determining Feasibility

In order to assess the feasibility of a change in the bus system, we addressed the cost of changing the routes, the efficiency & sustainability of changing the routes, and public satisfaction of changing the routes.

Cost

- The cost of our proposal to the bus system must be cheaper than the current system.
- The savings received from changes to the system must justify the change.
- The maintenance and overhead costs should be minimal
- Drivers' wages

Savings

- How much money could the institution save by not contracting to Butler County?
- How much money the Student Body would be able to save through the switch?

Efficiency/Sustainability Goals

- There should not be a lot of overlap among the bus routes
- Multiple buses should not go to remote areas frequently
- The bus system should achieve the sustainability goals set by Miami University

Customer Satisfaction

- The bus arrival times and bus stops must be convenient for students, specifically off campus.
- The bus arrival times and bus stops must be convenient for all the residents of Oxford.
- The arrival and departures times must be effectively communicated at each stop

Methods

In order to determine information and the common opinion about the current BCRTA bus system on Miami's campus we used several methods. The first method was a survey, in the form of an online questionnaire. Through these surveys, we hoped to gain insight into the popular opinion about the use of the bus system by Miami students. The second method we used was an interview. We conducted two interviews, both with you. The purpose of these interviews was to gain insight into the university's methods behind the establishment and changes to the bus system. The third and final method we used was analytical research, in which we looked into the past bus system, efficiency goals, and student use.

Survey

We conducted a survey via survey monkey that we sent out to as much of the student body as possible to assess the effects of the new bus routes on the student body. This survey was sent out through email and fifty-seven students completed the survey. These fifty-seven people generally agreed that the BCRTA bus routes are inconvenient for them and that the Miami Metro routes should be reimplemented. In order to gain information about our demographic, we asked the students to indicate whether or not they identified as an on-campus student, an off-campus student, or a resident of the City of Oxford. 50% of responders identify as an on-campus student, 45% responders identify as an off-campus student, and 5% of responders identify as an Oxford resident.

The survey included a mixture of both quantitative and qualitative questions in order to allow us the opportunity to examine the number of students who responded to our questions, but also to look closely at their individual answers. The responders provided with us their thoughts and we interpreted their answers to the best of our ability. Graphs and explanations are provided in this section; please visit appendix A to view the survey questions.

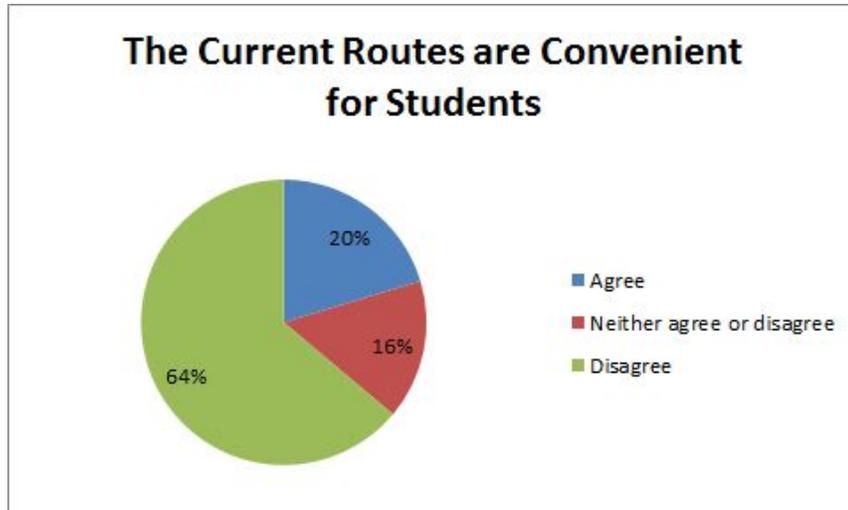


Figure 1:

Survey Results from Question 1

64% of survey respondents either disagreed to some degree that the BCRTA bus routes are currently convenient for them.

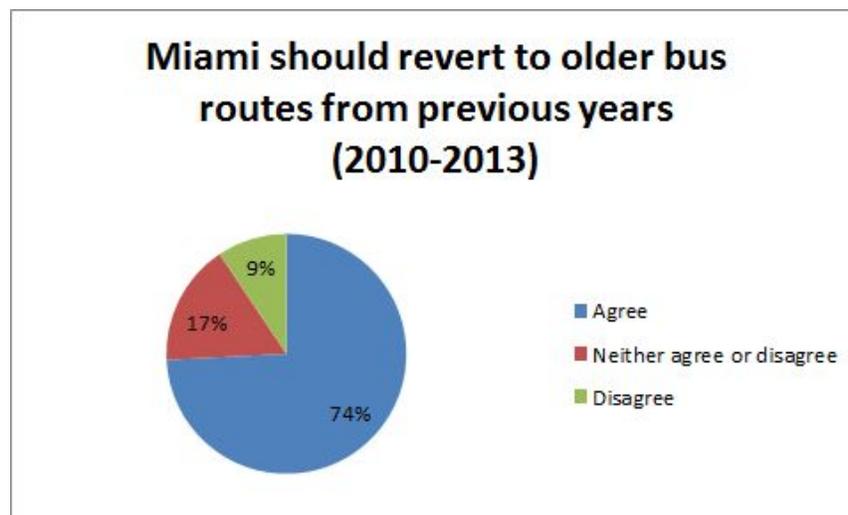


Figure 2: Survey Results from Question 2

74% of survey respondents agreed to some degree that the bus routes should be switched back to the routes provided by First Transit (Miami Metro).

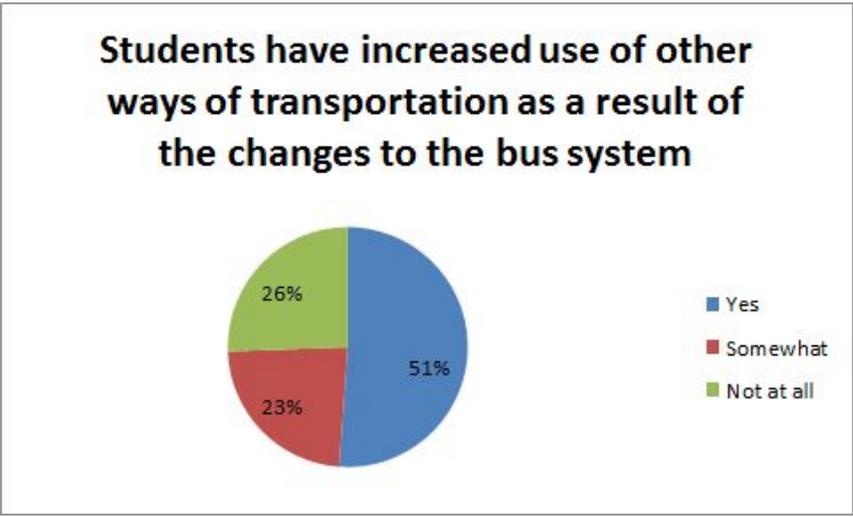


Figure 3: Survey Results from Question 3

More than half of our survey respondents said that they have definitely increased their use of other forms of transportation as a result of the new bus routes, including driving, biking, and walking.

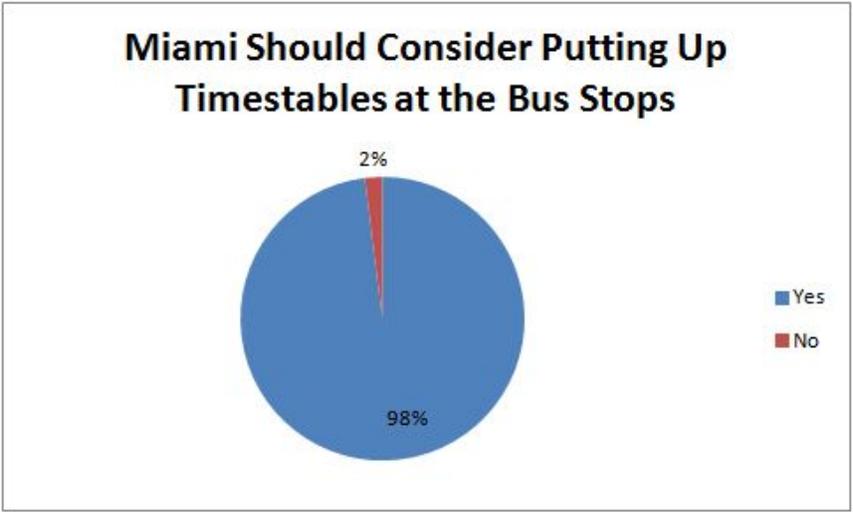


Figure 4: Survey Results from Question 4

Nearly 100% of students responded “yes” when asked whether Miami should consider putting up timetables at the bus stops as during previous years. Students who responded yes either indicated that seeing the timetables would help students to further understand the bus system, and help students to know if they have time to wait for the bus, or find another form of transportation. Students also indicated that in

the event that more route changes are made, the timetables would help to keep the students and Oxford population up to date with the new changes. Please refer to Appendix A to see the rest of the responses from the survey.

Responder #5 indicated that most times, students do not carry maps around with them in order to check the bus schedule, and in some cases, they do not have access to their phones. For example, the buses do stop running at certain times during the night, and with timetables posted at each bus stop, students would know whether or not the bus they aim to catch stopped running for the night. In response to this question, an overwhelming large population of students indicated that putting up timetables at the bus stops would further increase their understanding of the bus system and encourage them to take the bus more often. Because students do not often carry the bus schedules with them, it would be much more convenient to see the schedules at each stop.

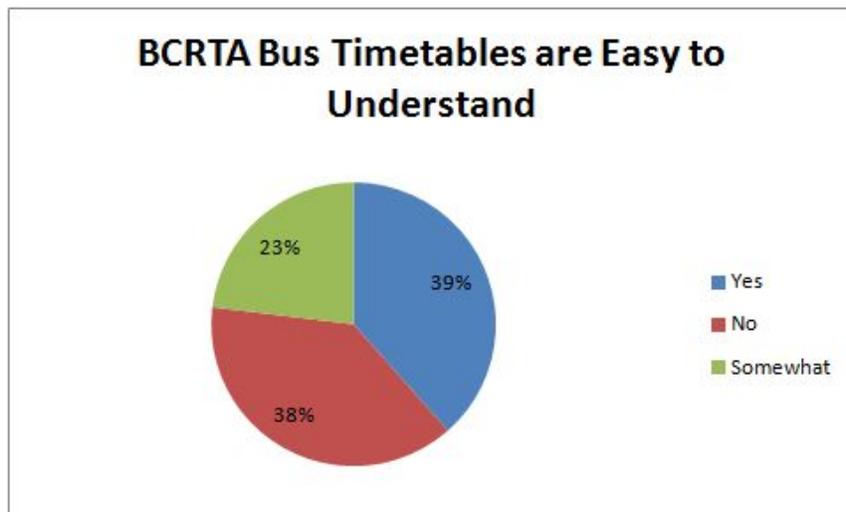


Figure 5: Survey Results from Question 6

While 40% of students agreed that the bus timetables are easy to understand, they stated that timetables themselves are hard to read due to the formatting of the text. Responder #26 answered that paper pamphlets and the pamphlets available on the BCRTA website were difficult to understand. Responder #29 stated that the timetables are easy to read, but they are confusing because so many of the buses run

over into the next hour. 40% of students stated that the bus timetables are not easy to understand. Responder #7 stated that the timetables were not easy to understand because the buses crossover hours and it is difficult to determine the direction in which they are going. The 20% of students who stated “somewhat” both agreed that the timetables were fairly easy to read, but mentioned that in order to fully understand them, memorization was required to understand the schedule. From the data, we concluded that the students are fairly evenly divided on the question of whether or not the timetables are easy to understand. Some students responded the timetables are easy to understand after studying them and reviewing the schedules available on the website or the paper pamphlets available on the BCRTA buses. Others stated that the bus schedules are difficult to understand simply because they memorized the old bus schedules.

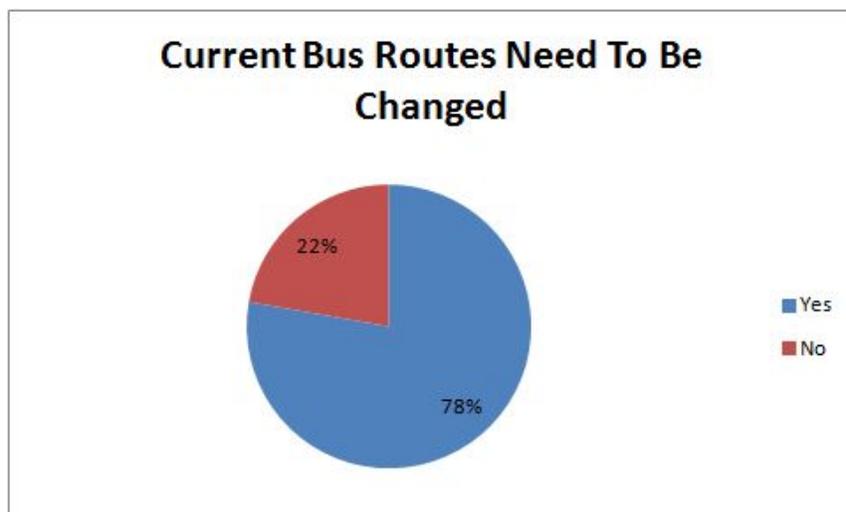


Figure 6: Survey Results from Question 7

77% of students agreed that some routes needed to be added or removed from the schedule. These responses are based off of personal preferences; we provided no choices for them to choose from. The students who agreed stated that changing the schedule would be more convenient for them when traveling across campus.

Responder #9, stated that creating a “backwards” version of the U4 or U8 would be especially helpful for students who live at Hawks Landing, because students have to spend an hour on the bus to get

home. Responder #22 stated that adding routes closer to Walmart would be convenient. Along College Corner Pike, there are locations such as Verizon Wireless, car and auto repair stores, and Enterprise. 22% of students disagreed that some routes needed to be added or removed from the schedule. These students provided answers such as “No” or “Not sure.”

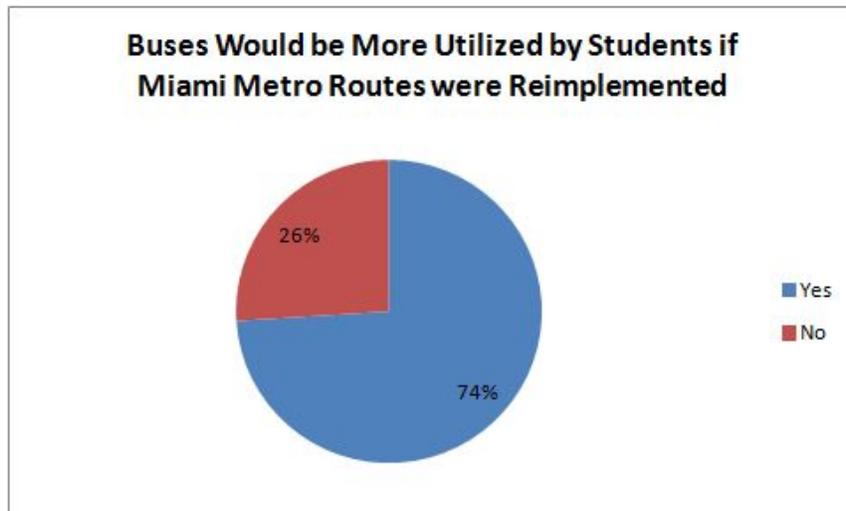


Figure 7: Survey Results from Question 8

74% of students agreed that they would take the bus more often if Miami reverted to the old routes. Responder #3 stated that they would consider riding the bus more often because their class schedule would match up with their academic schedule, and they would have multiple options to get to North Quad. Responder #14 stated that they would, because it was much easier to get to and from places in the winter. They hardly use the bus at all because it is not always convenient. Responder #31 stated that they would, as following the change they have taken the bus 2 times.

Responder #4 stated that they would not have a need to drive their car as much if the routes were changed. 26% of students disagreed that they would take the bus more often if Miami made the change. These students who responded indicated that they were graduating, or in some instances, they lived close enough to campus that they did not need to take the bus. Responder #8 stated the current bus system meets their needs. Responder #20 stated that they live close enough to campus that a route change would not affect them.

A larger percentage of Miami students agreed that if the routes were reverted to bus schedules from previous years, they would take the bus more often rather than resorting to walking to get to or from their destination. Off-campus students indicated that the change would be especially helpful. These conclusions serve to indicate that the Miami population is open to a change in the routes on campus. While the changes were made for economical reasons, if the administration chose to adopt the hub and spoke model, it might provide better transportation options for students.

Interview

We interviewed the director of transportation services, Ben Spilman, to access the criteria by which the University implements the bus service. Two interviews were held with Ben Spilman.

Interview One

Our first interview with Ben Spilman was informal and used as means to get ideas on exactly where to begin research for our study. Ben Spilman made clear in this interview that Miami University is working hard to reach their sustainability goals. The current bus system will help Miami to do so. In result of this interview, we focused heavily on research regarding these goals and how to accomplish them effectively.

Interview Two

Our second interview with Ben Spilman was more formal. We asked a preset set of questions and recorded the answers to each of the questions in writing. After coming to an understanding of what exactly the student body wanted from the BCRTA transit system, we wanted to determine the possibility of meeting the student bodies needs and meeting the sustainability goals of the university. This interview showed the little potential for both satisfaction and goals being satisfied. The university is focused on transportation demand management as a solution to its carbon footprint problem. This consists of encouraging students to utilize other forms of transportation like walking and biking. The full contents of this interview are in the appendix.

Research

We conducted research on the four separate criteria that we determined feasibility.

Cost

The main concern of cost was to determine if the contract with BCRTA was cheaper than the contract with First Transit. We found that although the explicit cost of a contract with BCRTA is, in fact, not cheaper than First Transit, the short and long-term benefits of BCRTA are much greater than those of First Transit. In turn, these benefits result in future lower costs for the university.

Savings

In regards to savings, we wanted to know if Miami University and its students were, in fact, saving money with this switch to the BCRTA transit system. Although the Miami University and its students are definitely not saving money currently with the switch, there is potential for both to do so with the continuation of a BCRTA contract. Due to the fact that BCRTA has access to grant funding, the chance of inflation affecting Miami University's contract payment with BCRTA is less likely than with a First Transit. In addition, the availability of grant funding that BCRTA is provided with, takes the potential of an increase in the funding burden seen within tuition payments off of the hands of the students.

Efficiency/Sustainability Goals

Initially, when wanting to improve the bus routes, we considered efficiency because we noticed that many buses in the current routes overlap excessively and multiple buses were making stops at lower populated areas of campus. During our study, we learned that Miami University was in lieu of achieving a smaller carbon footprint as part of its sustainability goals. With both of these issues in mind, we sought out to determine that change in the bus routes could make the routes more efficient (in our terms) while achieving an even smaller carbon footprint than the University planned. We learned that although changing the routes could possibly help Miami go above and beyond its original sustainability goals, improving the routes to the liking of the students may not accomplish the same feat. This would include creating a routing system that is less redundant in its coverage of the campus. Creating a more "efficient"

routing system would, in fact, set the university back in terms of its transportation demand management. Miami is trying to encourage other forms of transportation to lessen the presence of its carbon footprint.

Customer Satisfaction

With customer satisfaction, we wanted to know what exactly could be done to create maximum utility within the student body. In addition to meeting the needs of the students, we wanted to be sure not to take away from community transit in result. We found that creating this maximum utility would stem from making the bus arrival times and stops more convenient for the student body as well as effectively communicating this to the student body at the actual stops. Currently, complaints from the students consist of frustration about the buses being inconsistent in arrival and departure as well as buses exceeding their capacity and passing stops due to this. We found that a large amount of the students that we talked to and surveyed agreed that the bus routes need to revert back to the ones provided by First Transit in order to please them.

Overview and Evaluation of Alternatives

Due to the many ways the bus system can be altered we have come up with three different alternatives. These alternatives are:

- 1) Alter the current bus routes to accommodate needs/Revert to old routes
- 2) Leave the current bus routes unchanged.
- 3) Conduct further research into the Hub and Spoke model of public transportation.

To evaluate these alternatives we compared all of the information gathered from our criteria. While the customer satisfaction and efficiency/sustainability goals criteria are the most telling of what people want done with the buses, the costs and savings criteria show that there is little benefit to reverting the bus system back to the Miami Metro. When looking at costs we found that Miami contracted services from First Transit for \$1.5 million a year and the new contract with BCRTA costs \$1.6 million a year. While the BCRTA may seem like a decent sum more than the First Transit system we must consider that the BCRTA get grant funding which will keep costs lower and inflation would eventually raise the cost of First Transit to be much more expensive. We also found that the cost of transportation fees to the students has remained at \$66 since the change occurred, giving no possibility for saving more money by changing by to First Transit. Due to the large costs for buses it is also unlikely to modify the routes by adding more that connect at various places with the current routes. While it doesn't seem likely that Miami could revert to the old bus system, we cannot ignore the dissatisfaction that many in the student body have towards the new BCRTA system's routes. Further research can be done into the effectiveness of using a Hub and Spoke model for Miami University and the Oxford community at large.

Recommendation

Our research has shown that reverting to the old Miami Metro routes run by First Transit as well as remaining with the current BCRTA system are both not feasible due to the conflict between cost and user satisfaction. The costs of First Transit purchasing new buses to fit our needs and the cost of the contract in the coming years with inflation are too high for Miami to revert back to them. While the BCRTA has huge plans for increased public transportation capabilities and a reduction in private vehicles clogging up Oxford roadways we cannot ignore the fact that we see a larger number of private vehicles being used and increased frustrations with the buses. We therefore recommend our third option which is conducting further research into the Hub and Spoke model for public transportation. Due to the size of Miami University and Oxford the Hub and Spoke model seems to be the most viable option for busing using the Shriver Center area as a central location and having all of the bus routes stemming out from there as opposed to doing needlessly long loops. Riders could take the bus to any point on the route and, if need be, move from one route to another or take the bus all the way to the central hub. We believe that eliminating the long loop routes would increase the efficiency of the buses and that for most routes it is estimated that a bus could go from startpoint to endpoint in roughly 20 minutes. With further research we believe that this would be the most feasible option for everyone living in the Miami University and Oxford community.

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Appendix A: Survey Questions and Responses

1. Please select the option that describes you best:
 - a) On-campus student
 - b) Off-campus student
 - c) Oxford resident
2. The bus routes are convenient for you.
 - a) Strongly agree
 - b) Somewhat agree
 - c) Neither agree or disagree
 - d) Somewhat disagree
 - e) Strongly disagreeWhy?
- 3) You want Miami to revert to older bus routes from previous years (3010-2013)
 - a) Yes
 - b) Somewhat
 - c) Not at allWhy?
- 4) Have you increased your use of other ways of transportation as a result of the changes to the bus system?
 - a) Yes
 - b) Somewhat
 - c) Not at all
- 5) Should Miami consider putting up timetables at each bus stop?
- 6) Are the timetables easy to understand? Why, or why not?
- 7) Are there any routes that Miami should consider adding or removing from the bus schedule?

Individual Responses

Should Miami Consider Putting up Timetables at the Bus Stop?

1. Yes, it would be easier for students to understand the bus system.
2. Yessir
3. Yes. That way people know if they have time to wait for the bus or find another form of transportation.
4. Yes. It would be new helpful to know when the buses come instead if having I memorize each bus.
5. Yes, most students don't carry maps around and some of us don't have access to internet from our phones
6. Yes!! It's hard trying to look up bus times everytime I need one
7. Yes
8. Yes
9. yes...can be confusing.
10. YES! these were very helpful before
11. YES!!!
12. yes
13. yes because its annoying to have to look up the schedule on my phone
14. Yes that would be significantly more helpful
15. Yeah, that would be fairly convenient.
16. Yes
17. Yes Absolutely!

18. I think it's a good idea if possible. I understand it's a little complicated, but not everyone has a schedule on them all the time so it would help a lot of people.
19. Yes, not everyone carries a bus schedule with them. A person could be waiting for a bus that may have stopped running.
20. Yes therefore the students will know when the bus come
21. Yes
22. Yes
23. Yes
24. Yes
25. Yes, they're helpful
26. Yes
27. Yes absolutely. It was very helpful and everyone knew exactly what time the bus was supposed to show up. The pamphlets they have now are incorrect and most of the bus drivers dont even follow the times
28. Yes
29. Yes! they need to be as specific as possible. It would be very convenient!
30. Yes absolutely. I have to look up the schedule on my phone all the time.
31. I think that would be extremely helpful. I remember when one particular bus never showed up on time, and my friend had to eventually call in to complain. It was really frustrating not knowing if the bus was going to come three minutes early or two minutes late. I think timetables would help because then you could better wager how early to be at the stop, and it might also put some pressure on the drivers to stay on schedule more tightly.
32. A thousand times yes. That would make it far easier for me to quickly ascertain whether I can catch a bus or not.
33. Yes, definitely
34. Yes, I never understand when the bus is going to come since there are so many lines at the same place and no schedule.
35. Yes, that would help me so much - a big reason I don't use the busses much is because I don't know the times.
36. YES!!!! I don't know why they got rid of them. Also, if the route changes, they need to do a much better job of making sure that these signs are up-to-date.
37. Yes. A student cannot be expected to always know when they will need the bus-they may need to use it due to unforeseen circumstances and thus would not have thought to bring a timetable with them.
38. Yes!! This would make it so much easier for students to use the buses if they know where they will be at stop and at what time.
39. Yes, if people were to actually use the bus....
40. Yes!
41. Yes, all the buses come at different times, it's hard to figure out which bus comes when.

Are the timetables easy to understand? Why or why not?

1. Idk I don't ride the bus
2. I feel like they are. They have the minutes that they come and the hours that that bus runs.
3. They are fairly easy to read, but my friends and I all double-check each other because sometimes we can get mixed up trying to figure out if the minutes given are even hours or odd hours
4. Yes if they were more accessible that would be great
5. No
6. Yes
7. No because they cross over hours and it's hard to determine directions. Buses need to run both directions on each route to ensure quicker times.
8. somewhat, should have different ones for different stops/buses
9. If you take the time to read them. Bigger font would be nice
10. yes, so we know when buses come
11. somewhat, but the times that run into other hours becomes rather hard to decipher
12. I have not seen a stop with a time table sign but the ones on the paper maps are difficult because many have several different times and different times and stops over the weekend
13. It's a lot of information to convey, so it's typically a bit muddled. But it doesn't take long to glean the information needed.

14. I have not seen it yet
15. They are easy to understand because they are clearly labeled and I always knew what times the bus was coming.
16. They're a little hard to understand but I think that's just because the routes themselves are complicated, which is understandable. I think they did a good job considering.
17. I think they are, but I have heard many complaints about them/
18. Yes
19. Yes
20. No, I be so lost just tell me when it's coming or going
21. Depends, should be digital displays that say when the next bus is coming
22. They can be confusing but once you get it they're helpful
23. They are easy for me to read.
24. Yes because I know that the bus should show up and 30min and after evening hours maybe even 40min.
25. No, hard to read
26. No. Many times I would go to the bus stop and the time on the pamphlet or other displays dont match up with the actual bus route and I end up missing my ride to where I need to be
27. They are a little convoluted in format.
28. Yes, as long as I remember to pay attention to whether or not the header on the R3 timetable says Northbound or Southbound.
29. They are easy to read, but the times that go into the next hour are confusing
30. No, I just miss the old system because it was easier to understand.
31. No, I asked someone to explain it to me and I still am having trouble reading the schedule.
32. It takes some getting used to in order to fully understand
33. For the most part they are fairly easy to understand. It would be helpful if they added when the bus stopped running.
34. Not necessarily due to less buses circulating after noon.
35. Yes, it took a little getting used to with the old routes, but with some explaining I was all good I think maybe they should split up the timetable into the regular hours and the hours where busses run alternate times like :00, :40,:20 and put those times in another table
36. No because the names of the stops don't necessarily correlate with the names of the streets.
37. Somewhat, but you have to study them. Right now it looks as if they come every 20 minutes rather than at the 2:20, 3:20, etc that they actually come at.

Are there any routes that Miami should consider adding or removing from the bus schedule?

1. I'm not sure
2. I feel like there should be more routes that come to North Quad and I feel like the bus should not have long layovers at places like Ditmor because most of the time people aren't getting on and off there as often.
3. Add a bus route that goes down I the football stadium
4. Stop by Millett.
5. Summer busses
6. Not that I am aware of.
7. probably
8. I would like for there to be a bus going in one direction on a popular route and one coming in the reverse direction
9. Have a route that is essentially a backwards version of the U4 or U8. Hawks Landing and nearby students don't want to have to spend an hour on the bus just to get home.
10. It should go to Hawks Landing
11. More routes to Millet!!
12. I'm not sure. I feel like maybe the routes are pretty good and go most places they need to but I can't be sure because the real problem is just that they are never available when I need them.
13. There needs to be routes that go the opposite direction of the routes we have now. If I'm trying to get from Shriver to North Quad there is no reason I should have to go off campus!
14. Adding a bus that comes from shiver to martin dinning hall
15. No

16. Not sure
17. More to northquad
18. Adding more stops by Oxford-Miami Commons and Hawks Landing
19. Add a route where the bus comes from Tallawanda back to Millet to Sycamore. Before these buses, there were two sets of buses that went each way so students wouldn't have to walk all the way from Millet back to the apartments 20min away.
20. More near off-campus housing
21. They should consider a bus trip to Cincinnati incase students need to take a trip there
22. If it were possible, it would be nice to add more routes to places close to Walmart. I
23. Not that I know of.
24. Add from McGuffey to Kroger direct
25. More in town off campus routes should be added.
26. I'm not sure
27. It would be nice if they had a bus that goes around campus, both ways, like the purple buses used to.
28. Add more routes to the bus station (the one to get to other schools).
29. Adding one that goes from heritage commons on chestnut to shriver stopping at oak and spring on the way would be great
30. More direct routes or express buses. Maybe one that goes from Armstrong to uptown and vice versa only.
31. None

If Miami reverted to the old bus routes, would you take the bus more often? Why or why not?

1. Probably, they were more convenient for off campus students
2. No I don't ride it shawty
3. Yes because they schedule would match up with my classes and I would have multiple options to get to North Quad.
4. Yes, I would not have to drive my car as much and I would be able to get around easier.
5. Yes, I get allergy shots every other week and I would lose less time if I could take the bus
6. I don't know.
7. N/A
8. No...it meets my needs.
9. i am moving off-campus, so it applies less to me now
10. yes because the old system was way better
11. Yes the old routes were more convenient for me
12. Like I said, I'm not really familiar with the old routes. I think there was a bus that ran from Benton-area to Hawks Landing-area; if there was, then yes, I would ride the bus more often due to shorter commute times. If not, my bus habits would not change.
13. Yes
14. Yes, it was much easier to get to and from places in the winter. I used the previous bus system at Miami all the time, and now I hardly use it at all because it is not always convenient and I'm often unsure of what times it is arriving in various locations.
15. I think I would. But like I said, the real problem is just that the buses seem to be running as little as possible. Maybe if they were available more often the routes themselves *might* not matter as much. Even if not many people ride the buses later, it's really important for the safety of many people to have them running late. Especially college students who are often up studying or going out very late at night and often don't have their own transportation.
16. Yes, I liked those bus routes, but they also needed routes that went to and from.
17. Yes because they would take me where I need to go
18. Yes
19. I am graduating
20. No, I walk because I live that close
21. Yes because it's more realiable.
22. Absolutely because it was much easier to understand and much more convenient.
23. Yes, I loved that bus system.

24. Yes I would because It would be a lot more convenient and I would know how the bus system works again.
25. Yes
26. Yes absolutely! Since I walk everywhere to begin with, it would be nice to know that I can sometimes take the bus to Kroger or Taco Bell. I would definitely take advantage of the bus especially in these cold blistering winters
27. Yes I used to take it and I had to stop because they're no longer useful.
28. No, I would probably take it less because I would have less options of where to go.
29. I take the bus every day, no matter what. As long as the R3 route stays the way it's always been.
30. If they offered a direct route from campus to Kroger
31. Yes, I took the bus multiple times a day every day when the old system was around. Since the switch I've taken it a total of 2 times.
32. Yes, I plan to move off campus next semester and would like to be able to have reliable bus services available at more hours.
33. Probably not - I don't know how much they changed, so I don't know if it's more or less convenient
34. Yes, because I would understand it better. On another note, it would be nice if Miami got rid of having to use an ID. It was much more convenient for when I had friends come visit to be able to ride the bus, for example uptown, instead of trying to find a parking spot.
35. Yes I would because it was a more convenient system and much more reliable.
36. I would most likely use the bus more because it would be less confusing and more convenient.
37. Yes, if I wasn't graduating.
38. Yes. They're more direct.
39. Yes, I am more familiar with that system.

Appendix B: Interview with Ben Spilman, Questions and Answers

1. Why did Miami decide to begin a contract with BCRTA?	BCRTA was able to provide a public transit that has access to grant funding and is open to the community as a whole. BCRTA also helps to achieve sustainability goals.
2. What exactly are the sustainability goals that Miami is trying to achieve?	20% of Miami's sustainability goals consist of parking and transportation. This involves a concept called <u>transportation demand management</u> which considers bicycle routes, pedestrian walkways, park & ride, prices for parking, and ride & share.
3. Is Miami reaching the sustainability goals under the current busing system?	The process of reaching these goals takes time. With the implementation of the ideas behind transportation demand management, Miami should be able to reach its goals in time.
4. What was the idea behind the current bus routes, stops, and times?	The routes, stops, and times were suggested by a consultant hired by Miami University. Miami is working on making other forms of transportation more preferred. As part of their Traffic Circulation Master Plan, the BCRTA is widening the sidewalks for pedestrians and installing bicycle paths on the streets.
5. Why were the schedules removed from the actual bus stops?	The routes are changing too often to replace timetables at the stops. It is a large task and quite costly(54 bus stops). In time, when the routes are more static, this could be a possibility.
6. What feedback have you heard about the current bus situation?	First semester, all of the feedback was negative and non-constructive. They have been trying to encourage constructive criticism so that they can make. For example when people said they needed more accessibility from Tollgate BCRTA added another bus to the route during peak times.
7. Is Miami saving money by utilizing the BCRTA services?	Continuing with First Transit would have cost the university \$1.5 million and another ten year contract with inflation causing yearly increases in the price paid to First Transit. BCRA cost the university \$1.6 million, however, BCRTA offers a fleet of new and smaller buses, has access to grant funding, is open to the community, and 80% of its equipment is paid for.
8. There have been complaints of the BCRTA buses being full and in result,	BCRTA has adjusted to this problem by adding another buses to rous like that at peak times. Miami

<p>passing stops without picking people up at that stop. What are our thoughts on this?</p>	<p>Metro buses were very large, bulky, and, often, empty. Miami Metro only did exactly what the university told it to do, nothing more and nothing less. BCRTA has smaller buses that may accommodate less people but BCRTA is hearing the community out and addressing these issues appropriately. BCRTA is wanting to show to the community that they are a competent and well run program and so they work to appeal community needs.</p>
<p>9. What type of maintenance cost are required of the university, BCRTA, First Transit?</p>	<p>Miami University owns no buses. Maintenance costs are covered by whomever is providing the service. However, First Transit passed these costs onto Miami University through the cost of the contract. BCRTA is able to cover some percentage of these costs by way of grant funding.</p>
<p>10. How will BCRTA accommodate for people who don't have smartphones to access bus routes?</p>	<p>BCRTA will put timetables at major stops and in time, do this for all 54 stops.</p>

Appendix C: Bus Route Maps

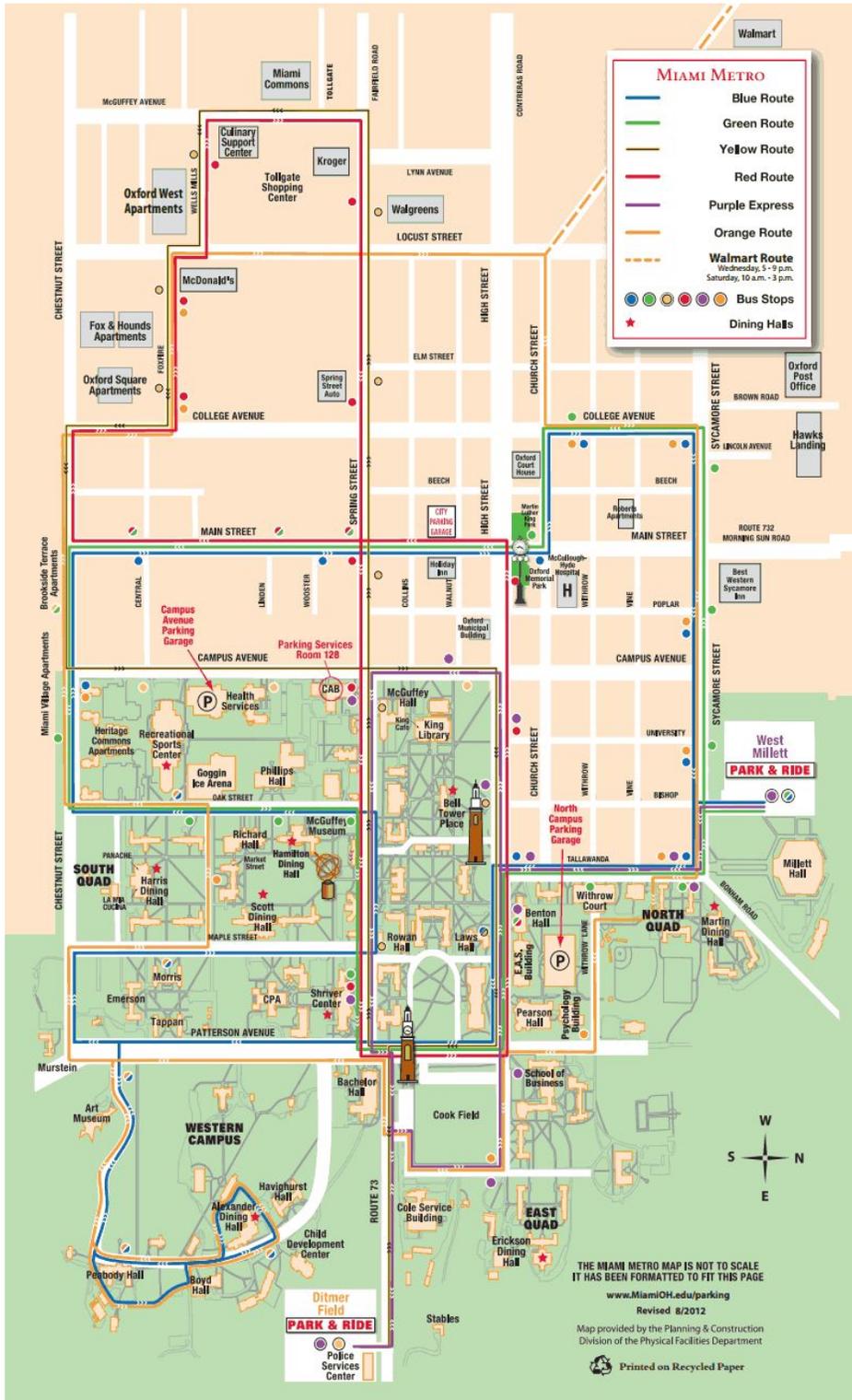


Figure 4: Miami Metro Bus Route Map (2012-2013)

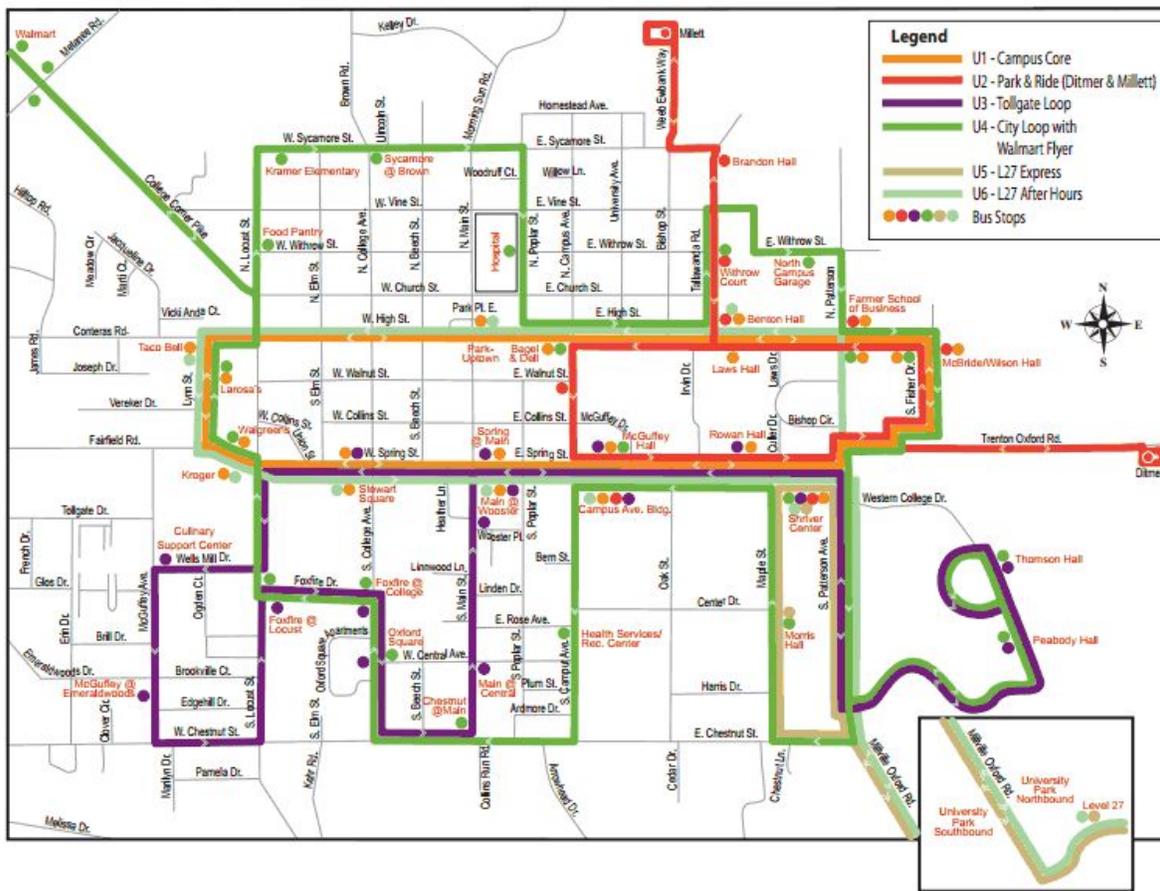


Figure 5: BCRTA Bus Route Map (Fall Semester 2013)

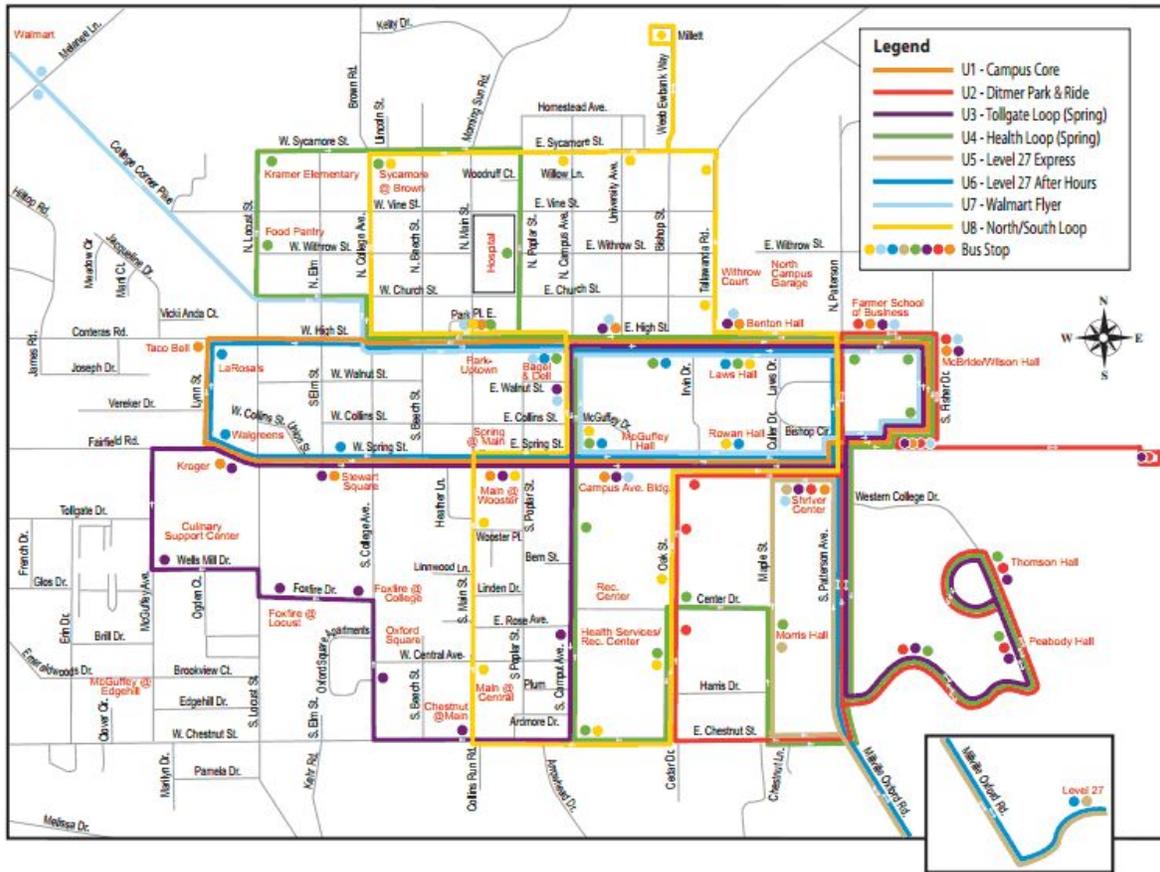


Figure 5: BCRTA Bus Route Map (Spring Semester 2014)

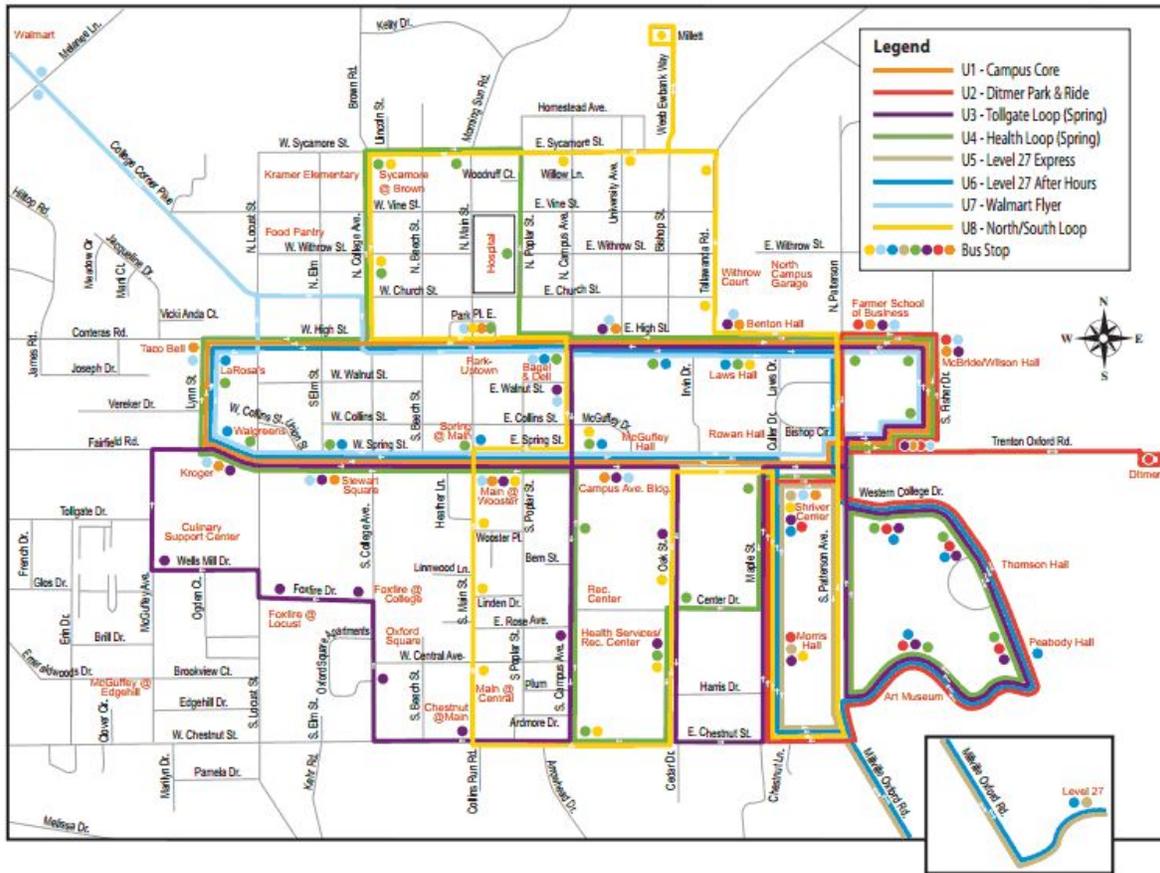


Figure 5: BCRTA Bus Route Map (Fall Semester 2014)