

# IMPROVING PUBLIC FAST TRANSPORTATION ON CAMPUS

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# Not enough bikes

## Hot spot zones

- Hot spot zones like sac never have bikes, and a lot of racks that do have some bikes have a lot of broken bikes.

## Problems:

- No nearby bike stations
- Empty bike stations means we have to make a detour to grab the bikes.

## Solution: In-app integration

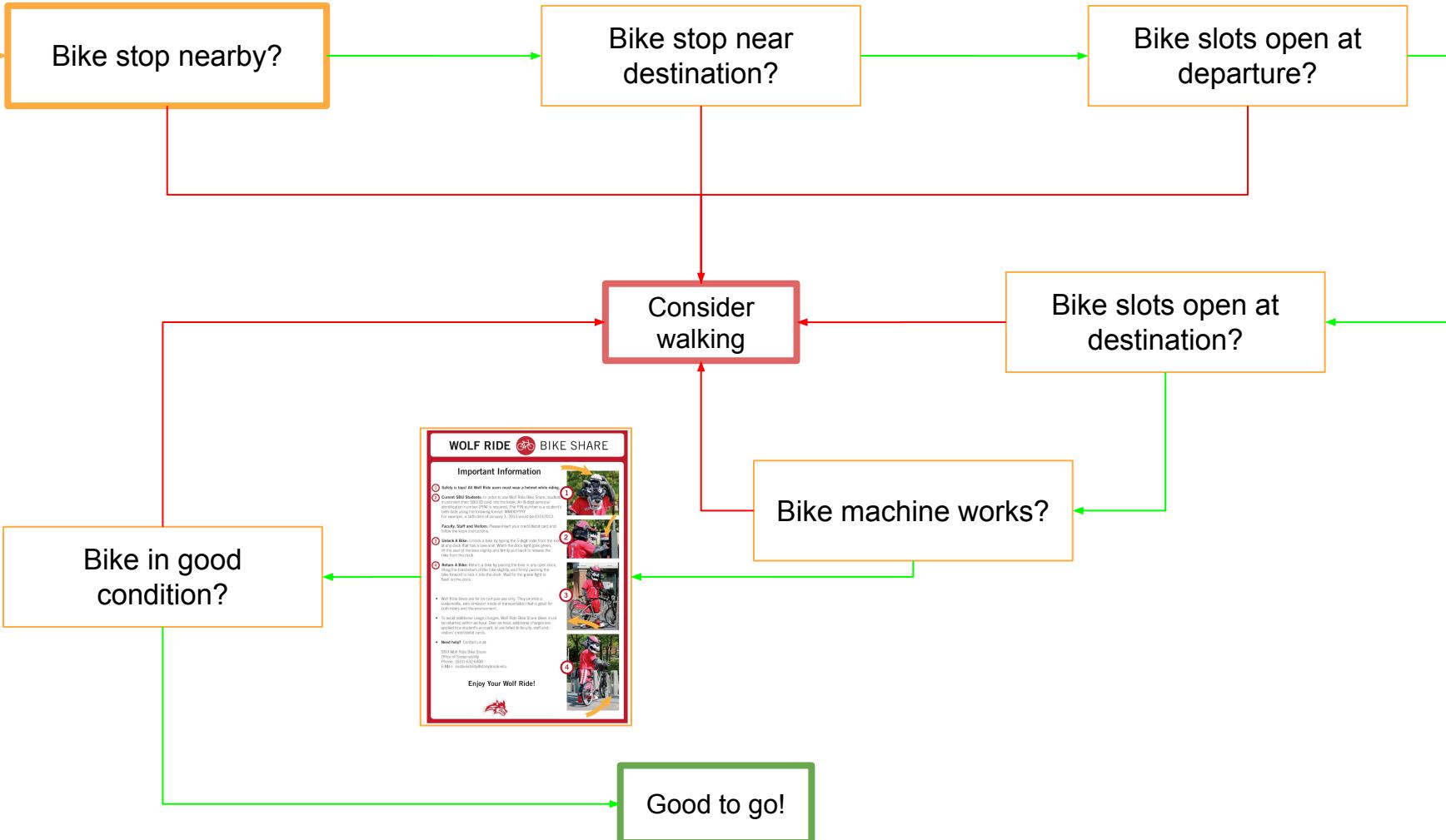


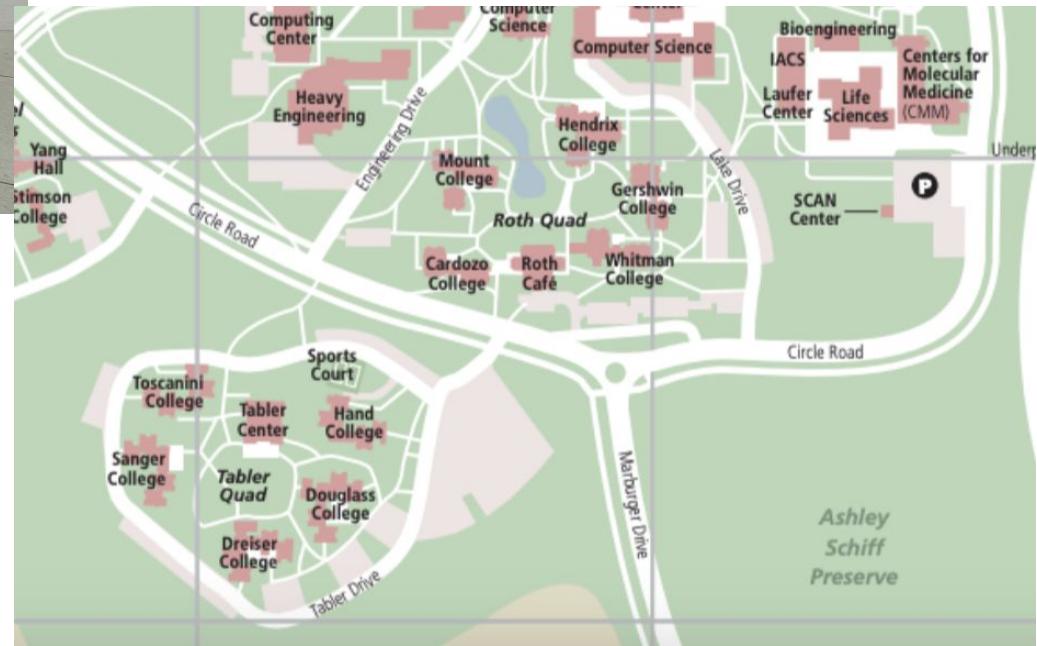
# Too many bikes

- You don't know whether racks are gonna be full at your destination
- Having no parking spots is problematic
- You will literally have to leave your destination to return the bike.
- If your time limit is sort of close you may have to get charged an overfee which can cause you to speed and bike recklessly to rush to the next bike spot.
- No guarantee next spot has spots either.

# Broken Bikes

- It seems like there is an issue with the racks in where some bikes are not able to be checked out.
  - It is very hard to tell when bikes are broken. Bike racks that have bikes in them often time don't have bikes that work, but it's hard to tell if the bikes are actually broken or just stubborn.
  - I often have to check out bikes multiple times to get them to work.
  - The check out process is really annoying too and could be better on the app.
  - The issue is even greater if you are in groups. I sometimes would go on bike rides with friends for fun but a lot of times we had to cancel because there is not enough bikes.





# Solution

- There is an app called “Wolf Rides” that can show all of the bike stations available for use on campus.
- It runs in two modes, one which displays the number of docks available at each station, and another that displays the number of bikes that are ready to rent.
- It doesn’t have that much functionality
- It can be combined with the double map



# Navigation

- It's not uncommon to get lost while en route to our intended destination.
- To help users navigate more efficiently, our app offers a GPS system that provides the quickest route to their destination.



Adobe Stock | #298836596

# Using error button

- Occasionally, users may encounter technical difficulties while utilizing our bicycles.
- In the event of such problems, users can utilize the "error" button on the app to notify university staff to address the issue promptly.



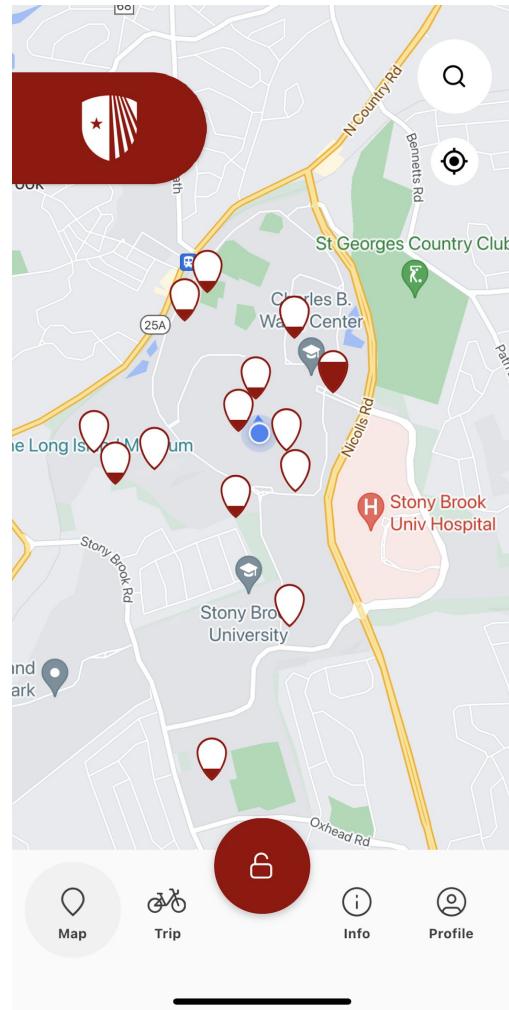
# Display the time

- Money is a crucial factor to consider when deciding on transportation options.
- SBU Wolf Ride Bike Share is free for current SBU students up to 60 minutes per trip
- By displaying the elapsed time, our app enables users to manage their biking time more effectively.



# Is that enough? (Feedback)

- SBU Wolf Ride Bike Share currently has 13 stations and 88 bicycles.
- According to the PBSC app, there are very few bicycles available on campus. (The picture was taken on April 6th.)
- Our app has a feedback function, which will remind university staff of the increase or decrease in students' demand for bicycles, so they can adjust the number of bicycles on campus.





# IMPROVING BUSES

# Getting Around Campus

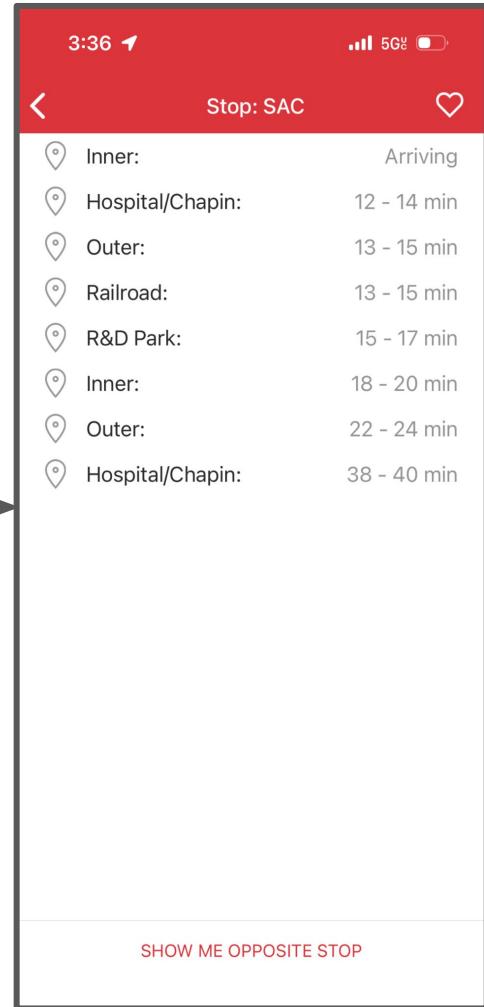
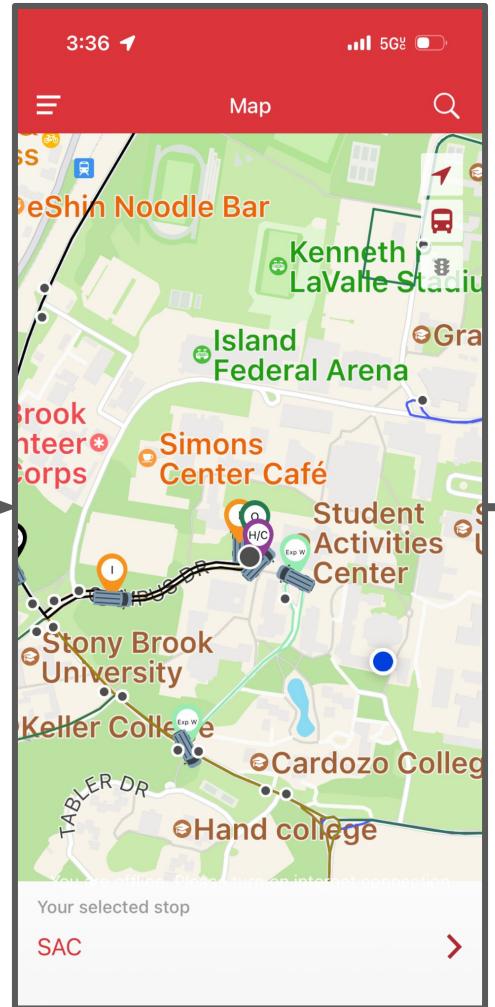
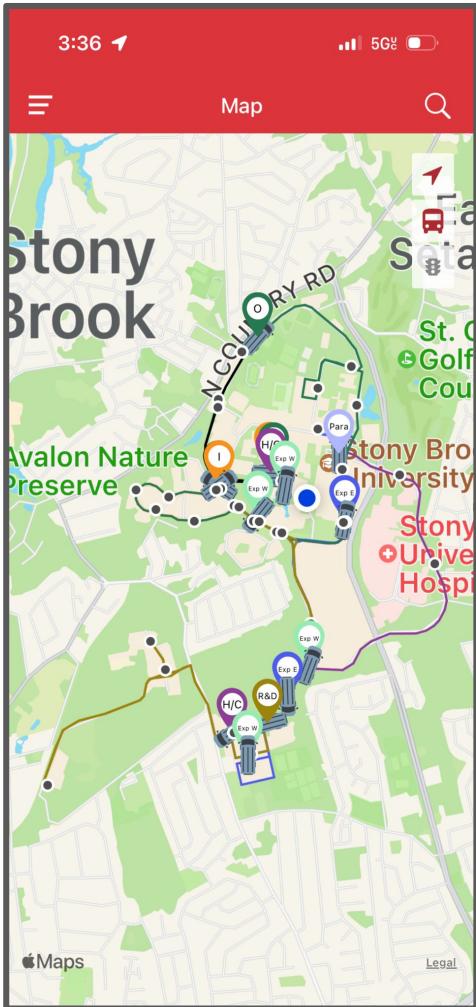




[https://www.stonybrook.edu/commcms/studentaffairs/for/facilities/programming\\_venues/LADIES.JPG](https://www.stonybrook.edu/commcms/studentaffairs/for/facilities/programming_venues/LADIES.JPG)



earth.google.com



Screenshots taken from DoubleMap

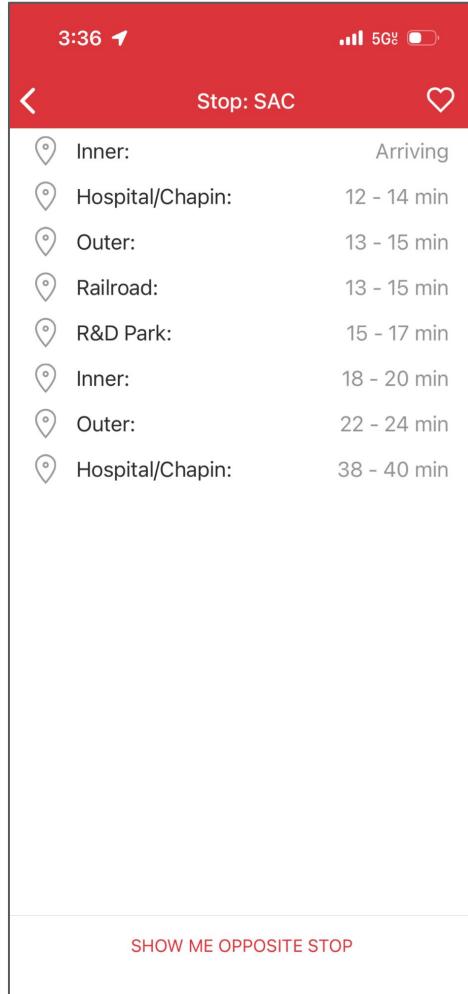
# ARRIVAL SCREENS

## Implementation

- Modeled after the LIRR
- Screens for ETA and departure times
- Integrate with bus LED panels

## Benefits

- Saves time
- Make more informed decisions
- Encourage more bus usage



<https://www.masstransitmag.com/technology/passenger-info/press-release/21215911/m-a-long-island-railroad-lIRR-unveils-realtime-seating-availability-accessible-trip-planning>



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## v2/eta

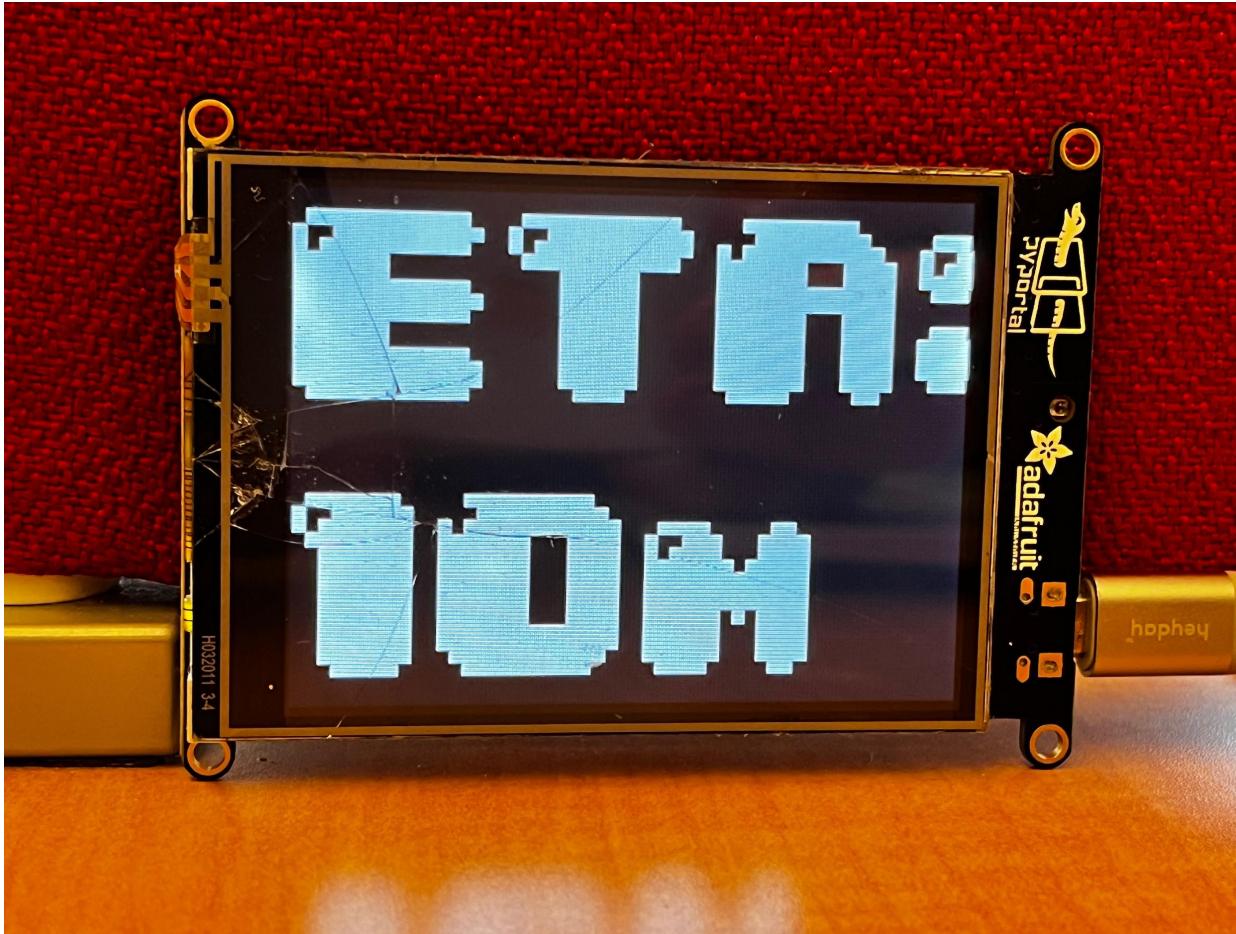
Parameters (choose one of the following):

- stop: the stopID for which ETAs are requested
- route: the route ID for which ETAs are requested

Returns a list of buses that will be arriving at that stop in the future, along with an estimate of how long the bus will take. If a route ID is provided, ETAs for all stops along that route are generated, but only for that route. If a stop ID is provided, then ETAs for all routes serving that stop are generated, but only for that stop.

Consider all fields not listed here undocumented and subject to change without notice. This field should be queried when requested by the user or, if constantly polling the same stop, no more often than once per minute.

- etas
  - stopID of the stop
    - etas: an array of ETA objects each representing one future arrival.
      - avg: The predicted amount of time, in minutes, that this bus will take to reach this stop.
      - route\_id: the ID of route that this bus is on

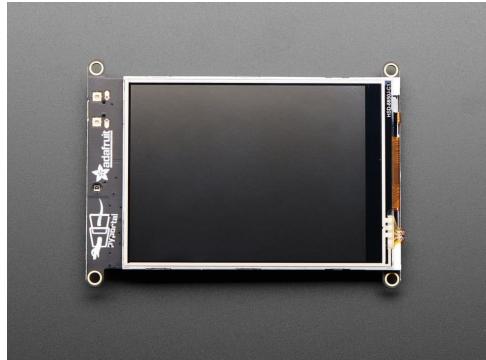




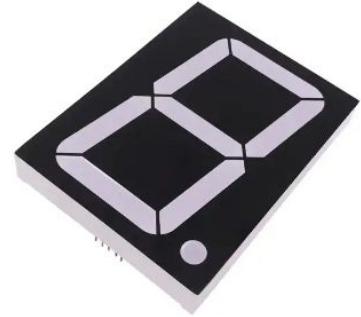


# Cost

Depends on hardware implementation



OR



## Cost

- Hardware: \$15 - \$60
- Engineering hours: Free
- Man hours: < \$110



**Total: At most \$170 per electronic sign**

# Works Cited

- Wolf Rides <https://devpost.com/software/wolf-rides#updates>
- Error button Exclusive Clip art by Ricardomaia <https://www.stockio.com/free-clipart/error-button>
- Navigation concept. Mobile city map navigation app.  
<https://stock.adobe.com/images/navigation-concept-mobile-city-map-navigation-app-cartoon-character-cyclist-rides-on-online-map-vector-illustration-city-bike-road-cyclist-transport-location-gps/298836596>
- Wolf Ride Bike Share FAQs  
[https://www.stonybrook.edu/commcms/sustainability/transportation/\\_Wolf\\_Ride\\_Bike\\_Share/faqs](https://www.stonybrook.edu/commcms/sustainability/transportation/_Wolf_Ride_Bike_Share/faqs)
- Wolf Ride Bike Share RIDERSHIP DATA  
[https://www.stonybrook.edu/commcms/sustainability/transportation/\\_Wolf\\_Ride\\_Bike\\_Share/wrbsridershipdata](https://www.stonybrook.edu/commcms/sustainability/transportation/_Wolf_Ride_Bike_Share/wrbsridershipdata)
- Getting Started with Timebox Timer - YouTube <https://www.youtube.com/watch?v=JIMirLJop70>
- DoubleMap API  
<https://data.bloomington.in.gov/dataset/4186d8e2-c8db-4c2f-95d2-efe9ffa6dfcd/resource/72e98db0-b6df-4260-82f9-18cc0ecff4ff/download/doublemap-application-programming-interface-api--3.pdf>
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