A Smarter Way to Incentivize
a Greener Way of Life

INCENTIWISE

Challenge

How do we encourage citizens to ride bikes, walk and use transit more instead of riding in cars alone?

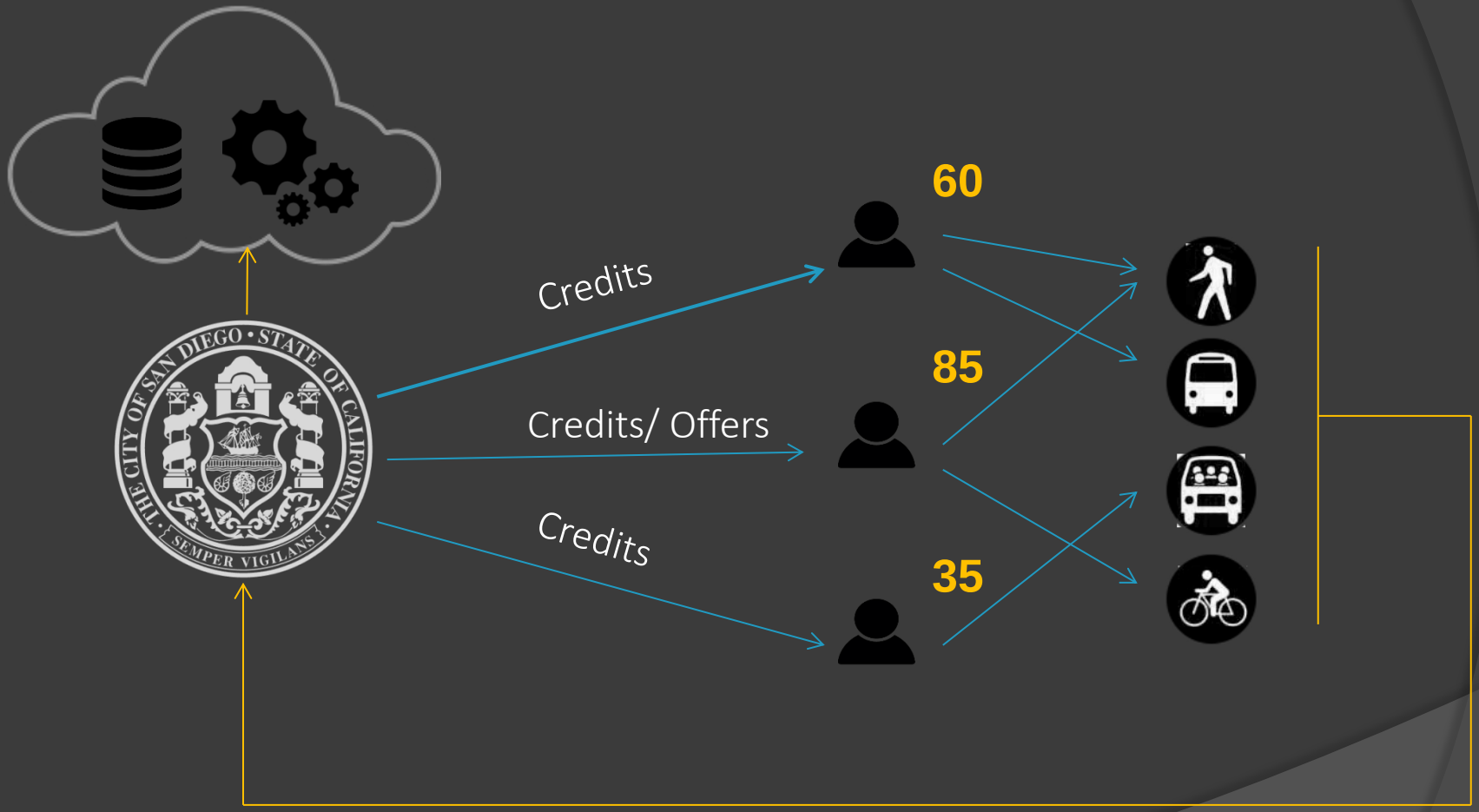
- Get them personally invested.
- Give them a reason to use alternative means vs cars.
- Incentivize them!

IncentiWise Vision (1/2)

- A credit based system to incentivize people to use alternative modes of transportation (walk, bike and public transit)
- An end-to-end solution for the city to track public transit usage, walk and bike patterns of residents* in real-time
- A smart controller that determines credit allocations based on mode of transport
- Get private businesses and citizens invested in using alternative transports

* Data is appropriately anonymized to preserve user privacy

IncentiWise Vision (2/2)



Credits

- Virtual currency can be assigned any value (e.g.: 100 credit = $1) by the controller at any time
- Can be gained or spent; permanent or time-limited
- Can be redeemed for city-wide transit services of equivalent dollar value e.g.: day-use, weekly transit passes, ride-share discounts
- Can be redeemed for coupons, goods, deals, etc. at local private business partners
- Provide many levers to allow the controller to experiment with; arriving at an optimal operating point

Real Time Data

- Collected from user and transit systems on daily, weekly, monthly timelines
- Used to build transit histories, usage patterns of users and things (buses, streets, walk-ways, bike paths and so on)
- Drives public policy for city-wide services

IncentiWise Ecosystem

- **Mobile App**: Individual
  - Syncs, displays credits accrued with detailed breakdowns on resource (bike, transit, walking) usage
  - Displays service offers from the City and private partners to be purchased with credits
  - In-App targeted advertising to generate revenues
- **Controller Interface and Software**: City
  - Aggregates user and transit real-time data
  - Credit allocation, interface to service ads/offerings
  - Generates transit history reports, usage patterns among other data analysis
- **Sensor Module** - GPS, NFC, BT, WiFi/Cellular connectivity (optional): Transit Systems and end-user devices (fitness bands, phones)

Goals

- **Short-term**: Increase city-wide bike, walk, and public transit usage while meeting climate action plan goals with little to no adverse impact on city OPEX
- **Mid-Long term**: Sustained growth in user participation while continuing to meet climate action plan goals. Additionally boost city revenues through private-public partnerships

Credit Allocation/Business Model

https://github.com/Colpan/hackathonfiles/blob/master/FinancialModel.pdf

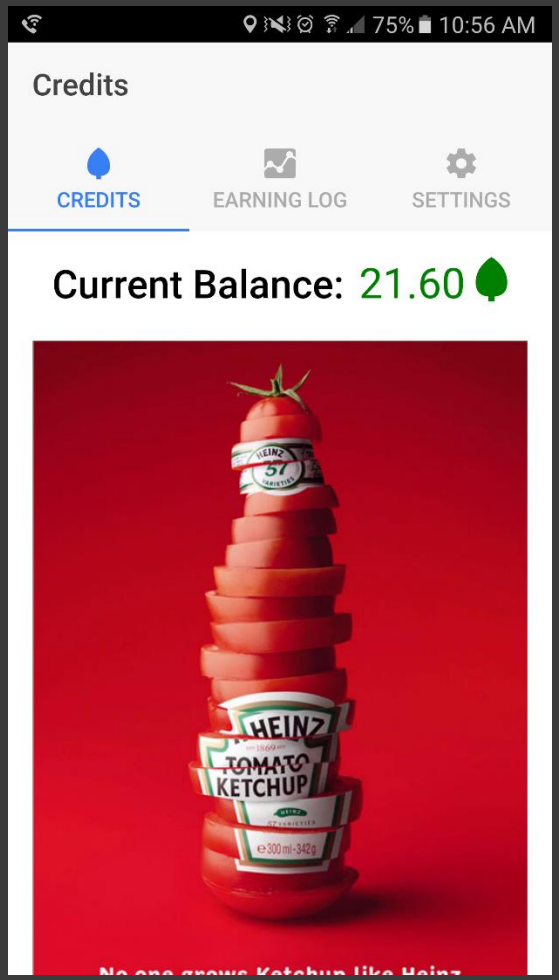
- Currently estimated 71,032 unique impressions per day (approximately 142,064 impressions daily)
- Ad revenue with a simple primary and secondary targeted advertisement in app: $831,074.40 daily
- Cost of credit redemption spread between private businesses and MTS system

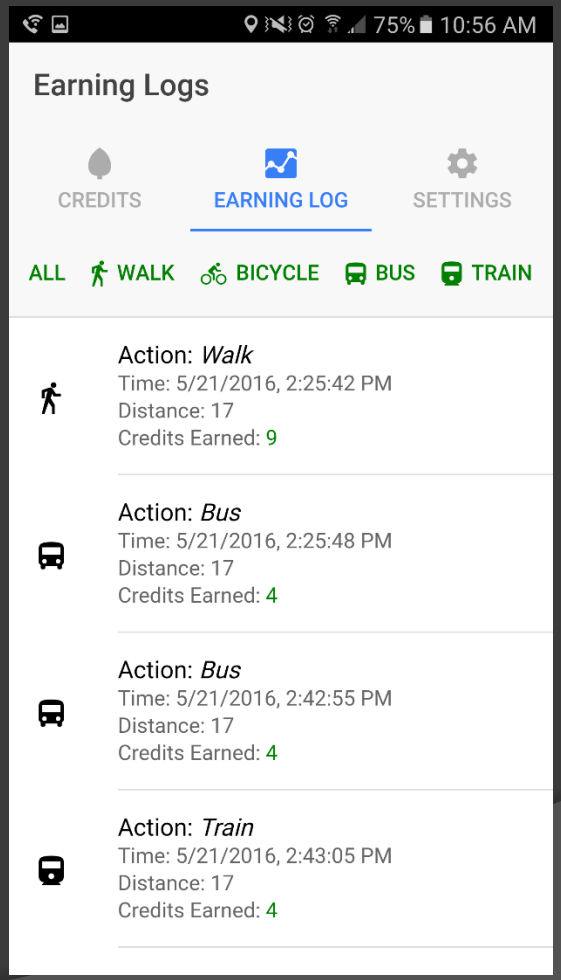
IncentiWise Prototype

- **Mobile App** (Ionic 2)
  https://github.com/Colpan/hackathonfiles/blob/master/mobile_app/Incentivize.apk
- **Server Side** (MongoDB, ExpressJS, NodeJS)
  https://github.com/Colpan/hackathonfiles/tree/master/server
- **City Interface** (R/ShinyApps)
  https://rkiyengar.shinyapps.io/iwcityapp/

Both the mobile app and city interface make use of synthesized data derived from actual data sources.

Mobile Application

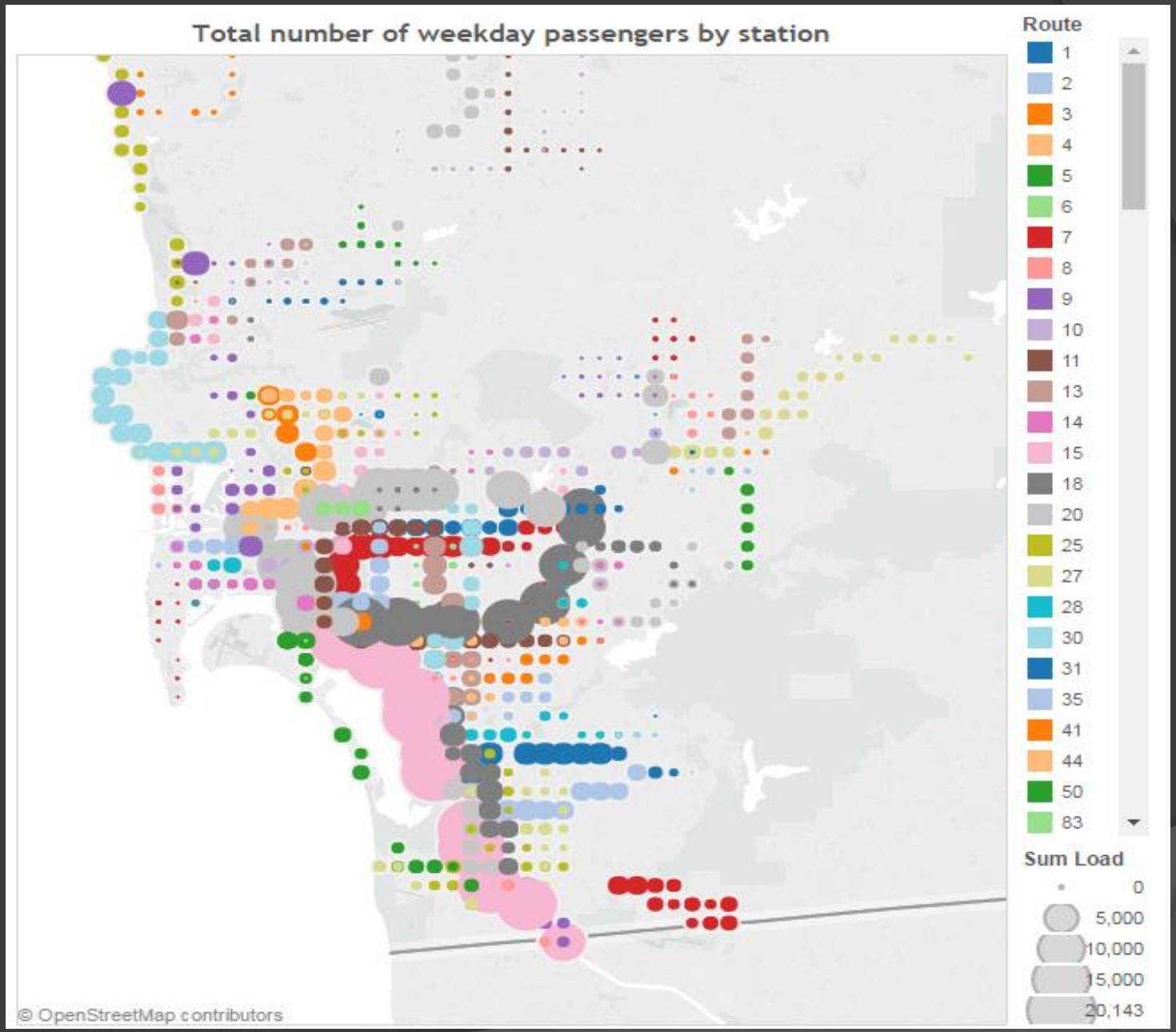




IncentiWise Reports

These reports and data visualizations were generated using actual transit and census data pulled from MTS, National Transit Center and SANDAG.

- City Transit Data Visualization
  https://public.tableau.com/profile/publish/Total_num_week_pass_by_route/Dashboard1#!/publish-confirm
- City Transit Use Data Trends
  https://github.com/Colpan/hackathonfiles/tree/master/data


Total number of weekday passengers by station
Route
1
2
3
4
5
6
7
8
9
10
11
13
14
15
18
20
25
27
28
30
31
35
41
44
50
83
Sum Load
0
5,000
10,000
15,000
20,143
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