PBIC Livable Communities Webinar Series

Dero ZAP!

a model for incentivizing and tracking bicycling in an urban core

Andrew Rankin

Programs & Communications Coordinator

COMMUTER CONNECTION

A PROGRAM OF THE DOWNTOWN MINNEAPOLIS TMO

About Commuter Connection

- Transportation Management Organization
- Commuter Connection was created by the City Council in 1991 as a public-private partnership of the City of Minneapolis and downtown business community to;
    - **maximize the use of existing transportation infrastructure**
    - **reduce traffic congestion**
    - **improve air quality**
    - **encourage and facilitate mode shift to non-drive-alone traffic**
- Funded by a Congestion Mitigation and Air Quality (CMAQ) grant

About Dero ZAP!

- Dero is a bicycle parking company based out of Minneapolis
- ZAP! system was initial developed for SRTS programs
- ZAP! utilizes RFID technology to track bicycles
- ZAP! unites are easily moveable

About downtown Minneapolis

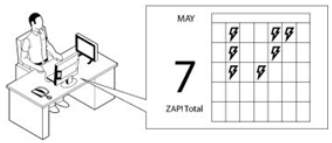
- Largest employment center in Minnesota with over 139,000 jobs
- 26% or 36,000 of individuals working in downtown live within 5 miles
- Approximately 45% of downtown commuters use alternative modes of transportation

How Dero ZAP! Works

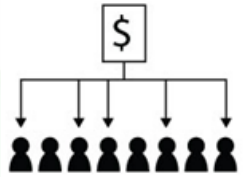
1. Participants attach a tamper-proof RFID to their bike. The administer links the RFID tag to the participant.

2. Readers are placed. Commuters bike through the read zone to register their bike trip.

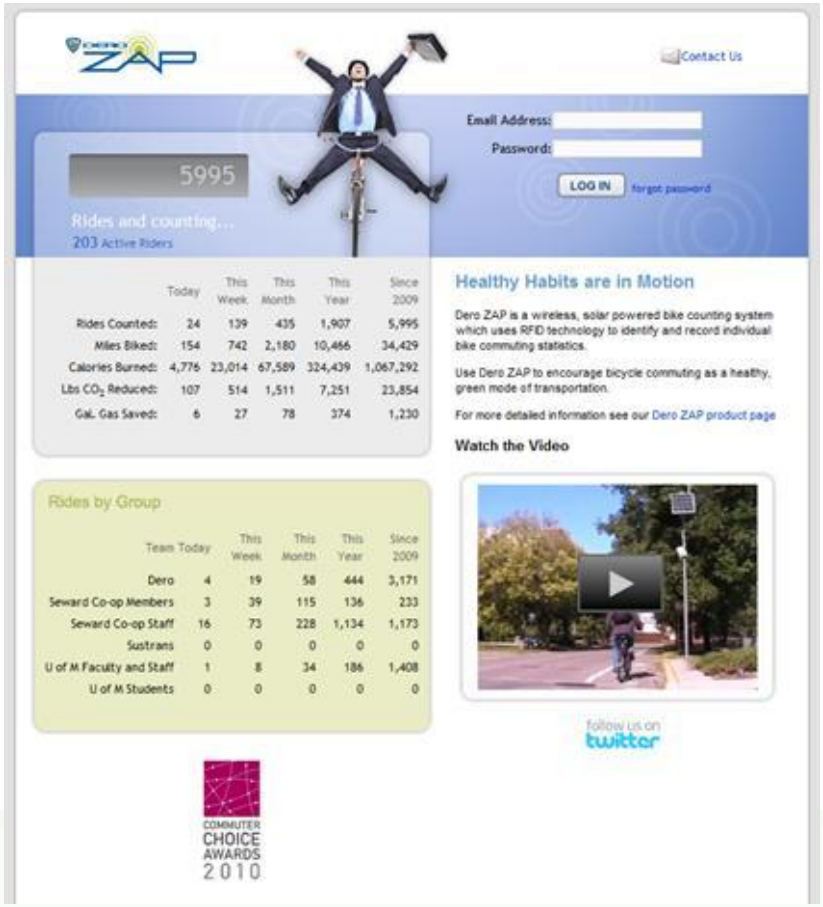
3. Participants can also record their trips and check how many trips they have accumulated online.

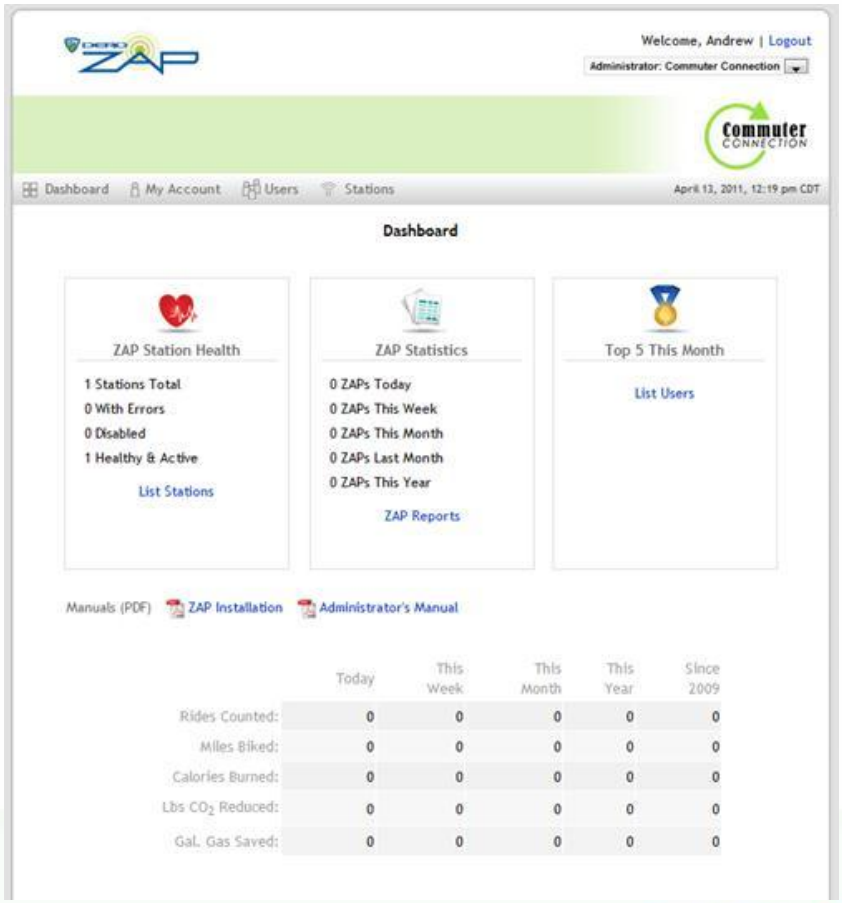


4. System administrators can view data and incentivize participants



How Dero ZAP! Works





Program Goals

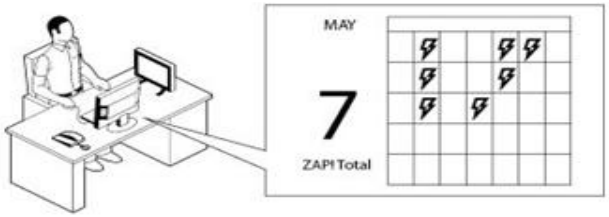
- Automatically tracking bicyclers entering the downtown Minneapolis core using RFID technology
- Incentivize bicycling for program participants
- Education and Outreach
- Provide data to employers, property managers, city and other transportation partners
- Work with employers and property managers to increase bicycle friendliness at worksites in downtown Minneapolis
- Complete feasibility study with insurance industry to utilize program to reduce health insurance costs

Program Model

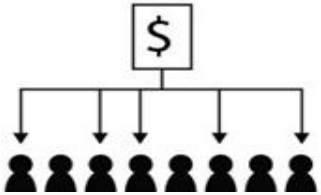
1. New participants bring their bikes in and an administrator attaches a tamper-proof RFID tag to their bike. The administrator links the RFID tag to the participant via a web-based interface. The participants bike is also registered with the National Bicycle Registry.

2. Readers are placed around the perimeter of downtown Minneapolis. Each reader is surrounded by a clearly indicated zone. Commuters bike through the read zone to register their bike trip and points are automatically applied to the commuters account. For each trip commuters are awarded 1 point to be used to redeem bicycle gear and services online.

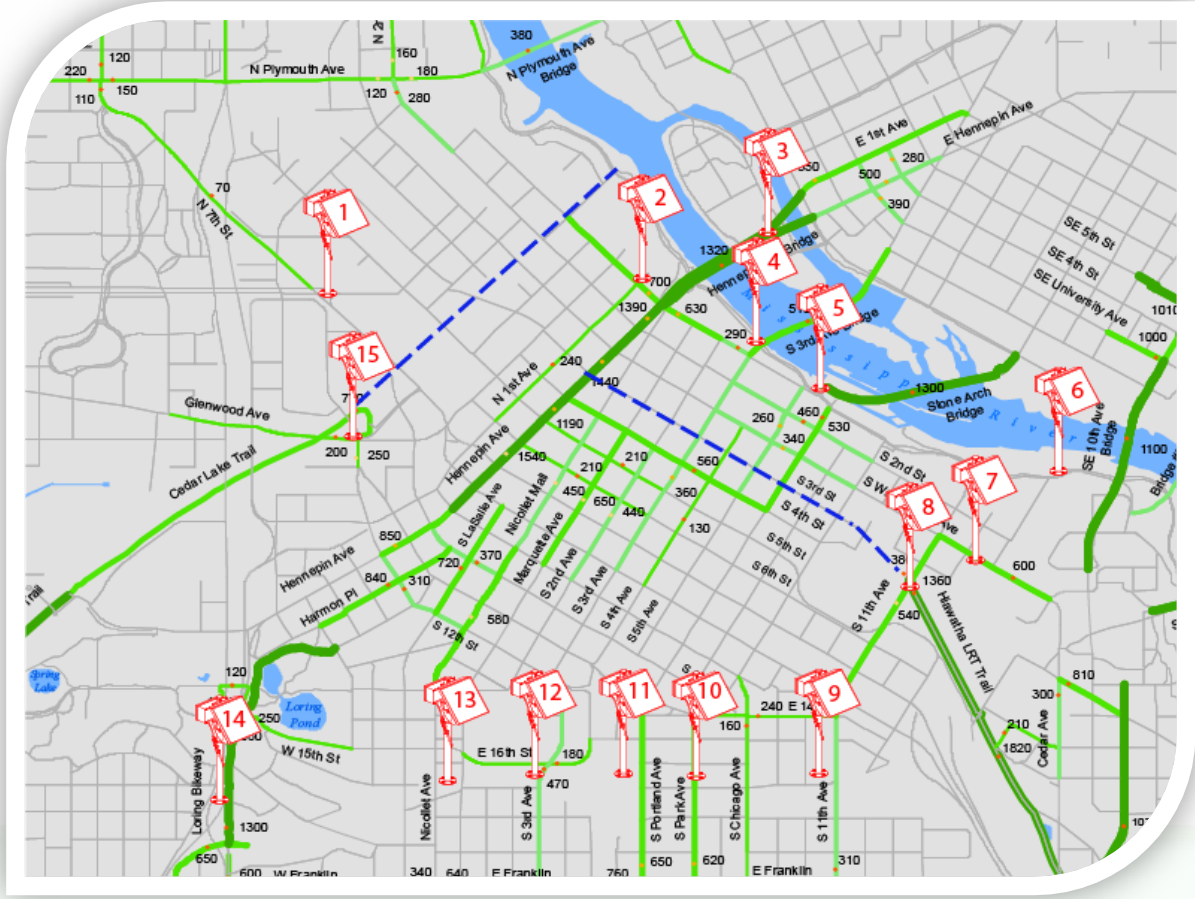
3. After parking their bikes and sitting down at their desks, commuters can log in to a web site and check how many times that month they have been counted and how many points they have collected!



4. Particpants can log in and redeem their points on an online store. The administrator can log in to the web site and download participant usage data.



ZAP! Installation



Legend

Bicycle Traffic	Count Location
Bike Counts	Count Location
No Data Available	**Year Conducted**
1 - 250	2006
251 - 500	2007
501 - 1000	2008
1001 - 7000	2009
2011 Bicycle Projects	
ZAP! RFID Reader	

All counts were conducted by the City of Minneapolis is September 2007, 2008 & 2009.

Funding Models

1. Apply for grants
   - Grantors have been reluctant to fund a technology that is being utilized for a new purpose
2. Pass cost to program participant
   - Cost is too high to recoup through program participants
3. Pass cost to employers
   - Employers must see value in system prior to investing

Funding Models

4. Hybrid Funding model
   - Phased roll-out
   - Partnering with several local organizations to test and expand system
   - Initial cost of program will be paid for through already secured CMAQ dollars
   - Bike industry partners will provide cost-share funding model for incentives
   - Employers will be charged nominal fee to access data and for a branded ZAP! website

Partnerships

- University of Minnesota
  - Integrate system in to already established U of M system
- St Paul Smart Trips
  - Leverage CMAQ funding to establish system in downtown St Paul
  - Integrate systems

Next Steps

- Reprogram for phased role-out
- Establish formal partnership agreements
- Secure required variances for installation
- Develop program materials and advertising campaign
- Establish pilot employer sites
- Install ZAP! devices and launch program
- Promote program/sign up participants at pilot worksites

Questions?

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PBIC Livable Communities Webinar Series

PEDESTRIAN PLANNING INDICATORS

Gizachew Andargeh

DC Office of Planning

District of Columbia
Office of Planning

Pedestrian and Bicycle Information Center

THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY
RESEARCH CENTER

DC OFFICE OF PLANNING

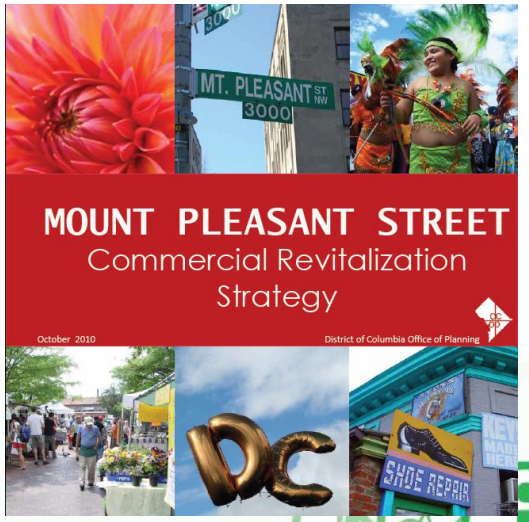
Mission:

The Mission of the Office of Planning (OP) is to guide development of the District of Columbia, including the preservation and revitalization of our distinctive neighborhoods, by informing decisions, advancing strategic goals, encouraging the highest quality outcomes, and engaging all communities.

SMALL AREA PLANS (SAP)

Elements of a Small Area Plan:

- Existing conditions analysis: identify neighborhood strengths, opportunities, etc.
- Market study: determines supportable retail, office, and housing square footage
- Development framework: provides guidance on the intensity of development and urban design guidelines
- Community development agenda: topic based goals and action items
- Implementation strategy: resources, partnerships, and responsibilities



WALKSCORE

WASHINGTON D.C.'S MOST
walkable
neighborhoods

#7 Washington D.C.

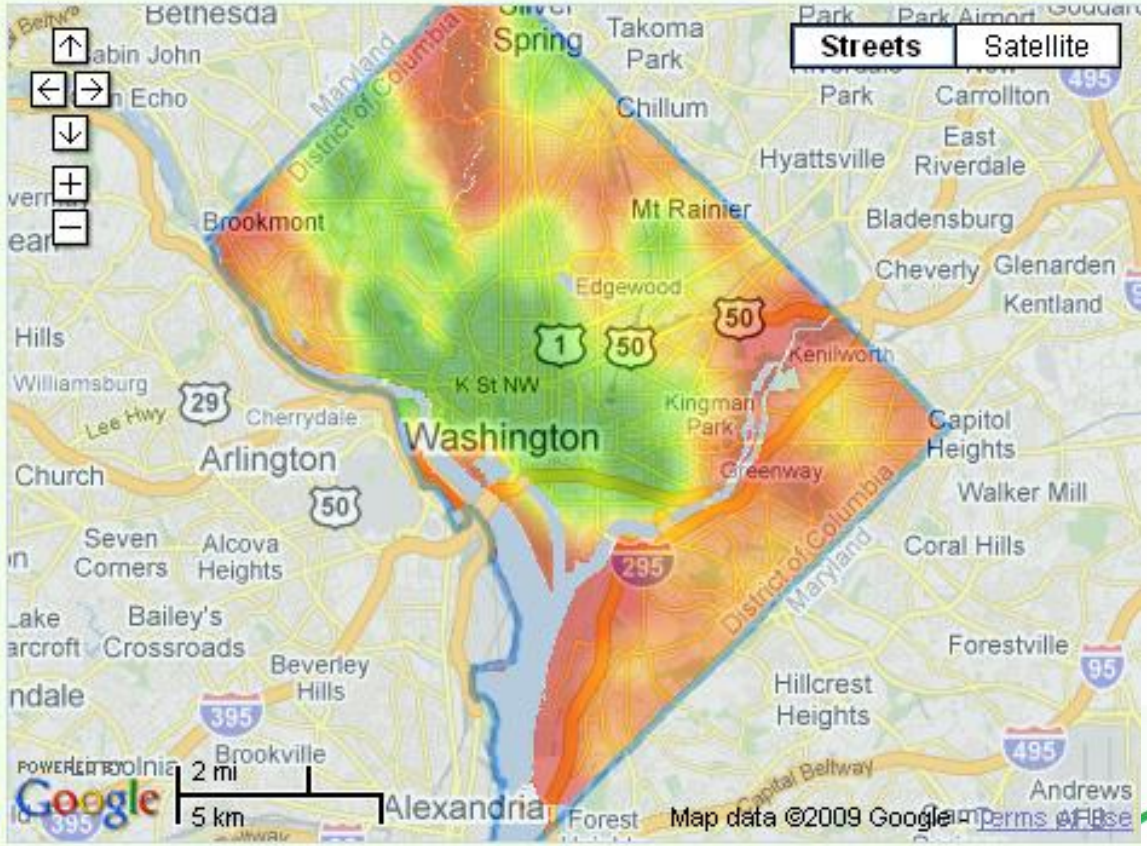
Walk Score: **70**

Population: **574,613**

Walk Score Distribution

Prev City | Next City | View All

Neighborhood	Score
1 Dupont Circle	99
2 Logan Circle	98
3 Downtown	97
4 U Street Corridor	97
5 Foggy Bottom	95
6 Mount Vernon Square	95
7 Adams Morgan	93
8 Kalorama	92
9 Friendship Heights	90
10 Georgetown	90
11 Shaw	88
12 Capitol Hill	87
13 Chevy Chase	83
14 Cleveland Park	83
15 Columbia Heights	83
16 Woodley Park	82
17 South West	81
18 Glover Park	80
19 Mount Pleasant	77



PBIC Livable Communities Webinar Series

Pedestrian and Bicycle Information Center

14TH ST. AND WALKSCORE

The plan analyzes land use, public realm and market potential for three commercial nodes along 14th Street.

<u>Public Realm Goal</u>: Improve the aesthetics along the 14th St. corridor while improving the pedestrian safety and connectivity.

BENEFITS AND DRAWBACKS

Benefits

- Great quantitative measure of varying types of neighborhood amenities
- Helpful when making real estate decisions (residential & commercial)
- Good benchmark for walkable urbanity

Drawbacks

- No qualitative measure of those neighborhood amenities
- Until recently worked on radius system, i.e. not realistic walking paths
- Lack of synergy with other online tools, e.g. Yelp, Crime Report, etc.
- No historical baseline

FUTURE USES OF WALKSCORE

DCOP will continue to use Walkscore as a point of reference:

a) Implementations indicator

b) Correlating increased health benefits to an increase in walkable urbanity

c) Assisting in advertising neighborhoods for increased retail & residential development

PEDESTRIAN PLANNING INDICATORS

Thank you!

Gizachew Andargeh

DC Office of Planning

District of Columbia
Office of Planning

PBIC Livable Communities Webinar Series

CycleTracks App for Android and iPhone

Elizabeth Sall, San Francisco County Transportation Authority

Pedestrian and Bicycle Information Center

THE UNIVERSITY OF NORTH CAROLINA HIGHWAY SAFETY RESEARCH CENTER

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY

Outline

1. **Why** make CycleTracks?
2. **What** does CycleTracks do?
3. **Who** used CycleTracks and why?
4. What **data** did we get from CycleTracks?
5. What did we **do with** that **data**?
6. Evolution and **future** of CycleTracks

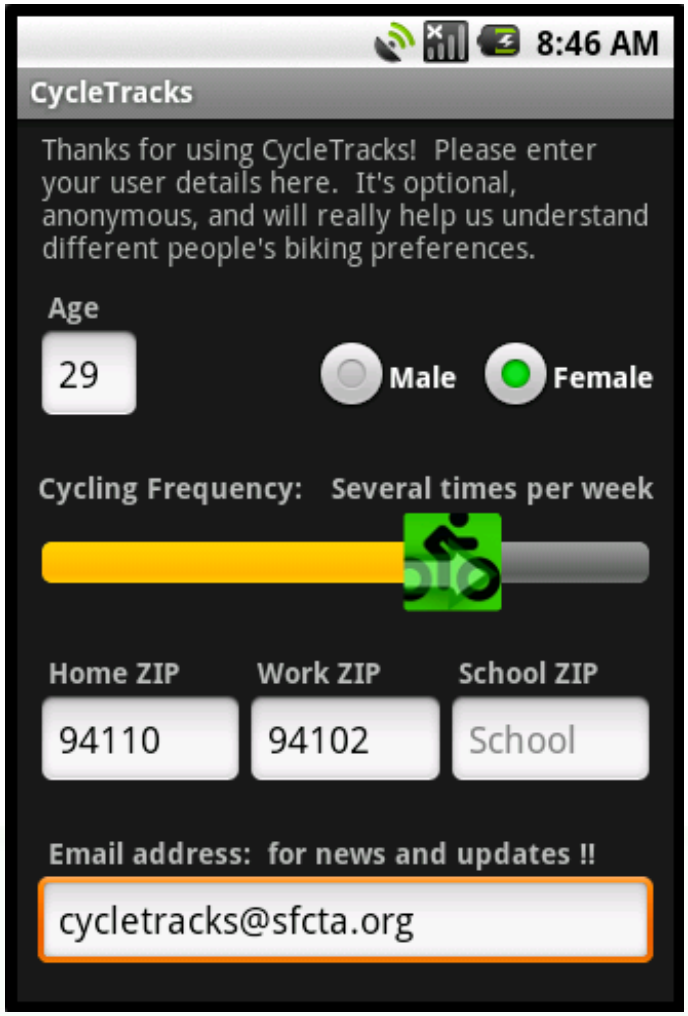
1. Why CycleTracks?

Why CycleTracks?

- Need to prioritize projects, including bike projects.
  - calculate changes performance metrics associated with bike infrastructure investments
  - bike route choice model that evaluates tradeoffs that cyclists are willing to make to use bike infrastructure (AKA the “value” associated with them)
  - bike route choice data (on a budget)

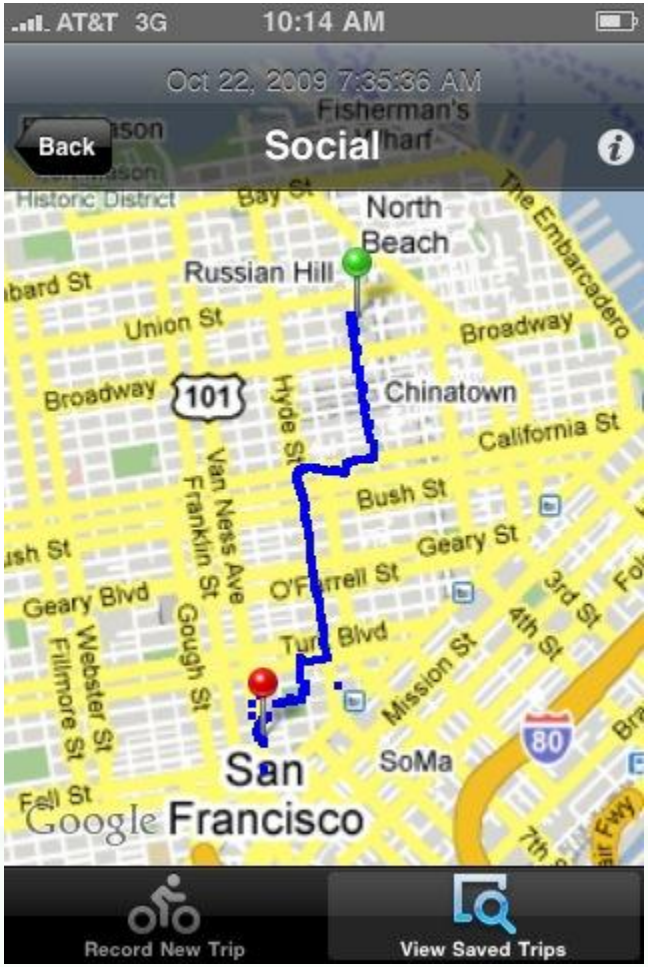
2. What does CycleTracks do?

Enter personal data (optional)



Enter New Trip

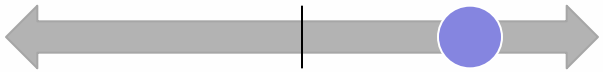
Review Saved Trips



That's it?

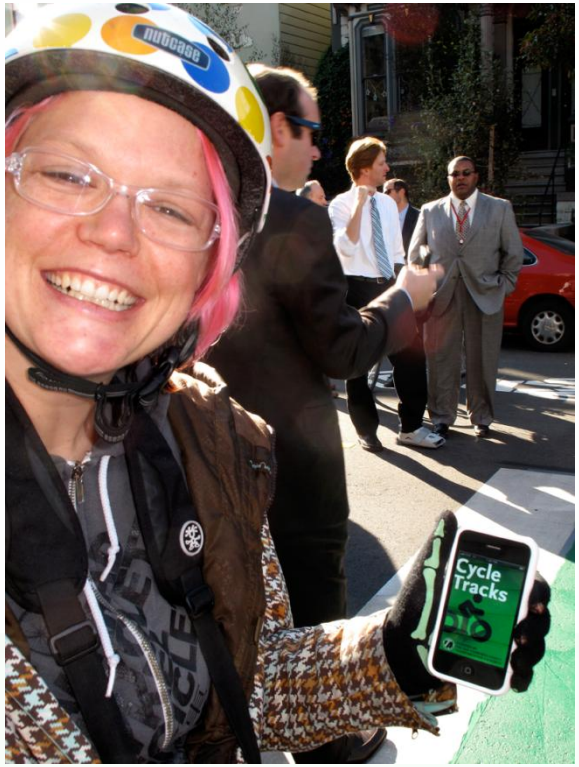
- Bells and whistles could promote deviation from planned route.

Features!
Flare!
More users!



Good Data.
Yawn.

3. Who used CycleTracks and Why?



- User Recruitment
- Participants

Thursday, November 12, 2009 31 Comments

SF Transportation Authority Launches iPhone App to Track Cyclists

by Matthew Roth on November 12, 2009

The San Francisco County Transportation Authority (TA), the city's congestion management agency responsible for modeling transportation and development patterns, has released its new bicycle route data application, Cycle Tracks, for iPhones and GPS-enabled iTunes players at the iTunes store. Like similar applications that give information such as speed and distance traveled, users of the TA app can map their bicycle ride, but the data they collect will be aggregated anonymously in the TA's server so that it can be applied to their SF-CHAMP modeling and travel forecasting tool.

"This app will help the cycling community help itself," TA Executive Director José Luis Moscovich said in a statement. "The data they log will contribute to better planning of bicycle facilities, and they'll also have a record of their personal cycling history. I'm sure it will be very popular."

Billy Charleton, Deputy Director for Technology Services at the TA, explained that SF-CHAMP doesn't currently have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91.7FM SAN FRANCISCO
KALW
LOCAL PUBLIC RADIO

facebook

Search

Message All Members
Promote Group with an Ad
Edit Group Settings
Edit Members
Invite People to Join
Create Group Event
Leave Group

Start using CycleTracks today!

Download from the App Store at http://bit.ly/CycleTracks or from the Android Market app on your phone.

CycleTracks

Wall | Info | Discussions | Photos | Events | +

Write something...

Attach: Share

Options

Tim Hickey

Wrong location spot

When I ride home at Howard and Spear, it sometimes puts my location in the bay, just north of the bay bridge. This seems to nullify my recording.

January 10 at 7:50pm · Participate

RECENT ACTIVITY

Jennifer Gile discussed Cycletracks on Android on the CycleTracks discussion board.

Dave Mangot discussed Cycletracks on Android on the CycleTracks discussion board.

Billy Charlton and **Dave Mangot** discussed Cycletracks on Android on the CycleTracks discussion board.

Dave Mangot

Cycletracks on Android

I tried recording two different trips on my Samsung Moment (cupcake) and in both cases, it said 0 miles. After that I discovered that after I hit Start Trip it says elapsed time 1 second, and that's the end. Never advances past one second. (and thus, my distance, etc...

See More

December 16, 2009 at 10:13am · Participate

Jeffrey Carl Faden

Cycle Tracks

@CycleTracks San Francisco

CycleTracks uses the iPhone's GPS support to track users' bicycle trip routes. CycleTracks is a @mopimp production. ©2009 SFCTA.

http://www.sfcta.org/CycleTracks

Following

Tweet to @CycleTracks

Tweets Favorites Following Followers Lists

SHCK2DSYS Evan by CycleTracks
Biking to work in SF? Don't forget your CycleTracks app http://bit.ly/aNMV4m @mattpaul @mopimp Congrats!
13 May 10

VentureBeat VentureBeat by CycleTracks
Biking to work in SF? Don't forget your CycleTracks app http://bit.ly/9pPjJE by JP Manninen
13 May 10

mattpaul Funkminsta Fulla by CycleTracks
Great writeup on @CycleTracks today: Biking to work in SF? Don't forget your CycleTracks app http://su.pr/1CaloM Thanks @VentureBeat!
13 May 10

ClimateRide Climate Ride by CycleTracks
RT @sfbc props to @BikeToWorkSFBay and all the @CycleTracks & @iBikeChallenge users out there biking to work today! #BTWD2010
13 May 10

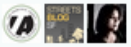
sfbike SF Bicycle Coalition by CycleTracks
RT @mattpaul Mad props to @SFBC, @BikeToWorkSFBay and all the @CycleTracks & @iBikeChallenge users out there biking to work today! #BTWD2010
13 May 10

About @CycleTracks

36	148	133	12
Tweets	Following	Followers	Listed

You and @CycleTracks

You follow accounts that follow @CycleTracks · view



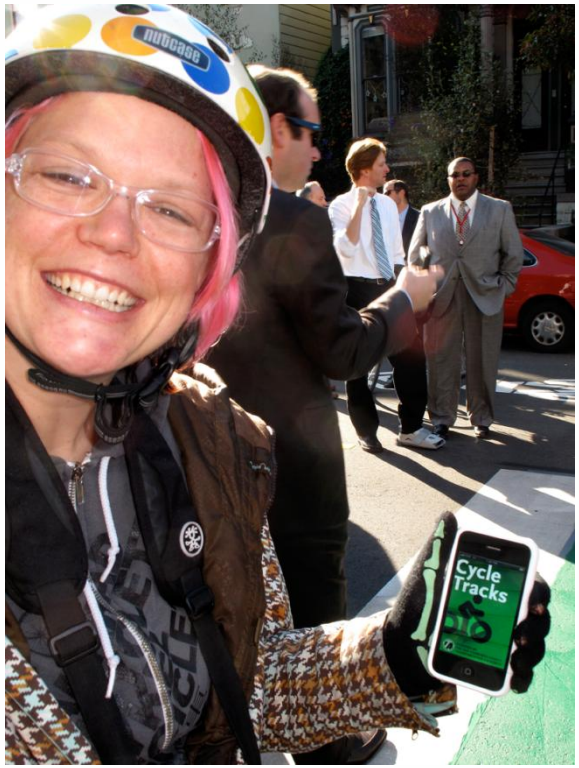
Similar to @CycleTracks · view all

Wuss912 Wuss912 · Follow
Unibomber in Training. We are the cycleists the inter...

mopimp mopimp productions · Follow
Feeling less pimp? Give us a call. We can help! Let's ...

AmericanCyclery American Cyclery · Follow
Purveyor of the finest bicycles since 1941

Following · view all

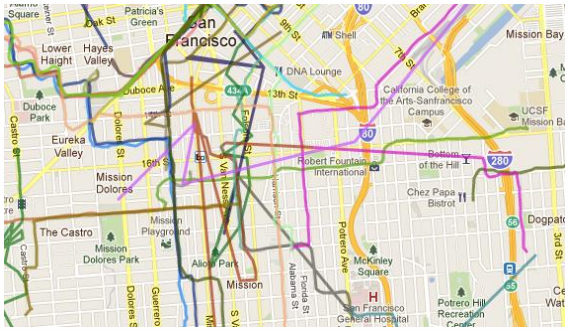


Participants: who gave us data?

SF Participants: Fall 2009 to Spring 2010

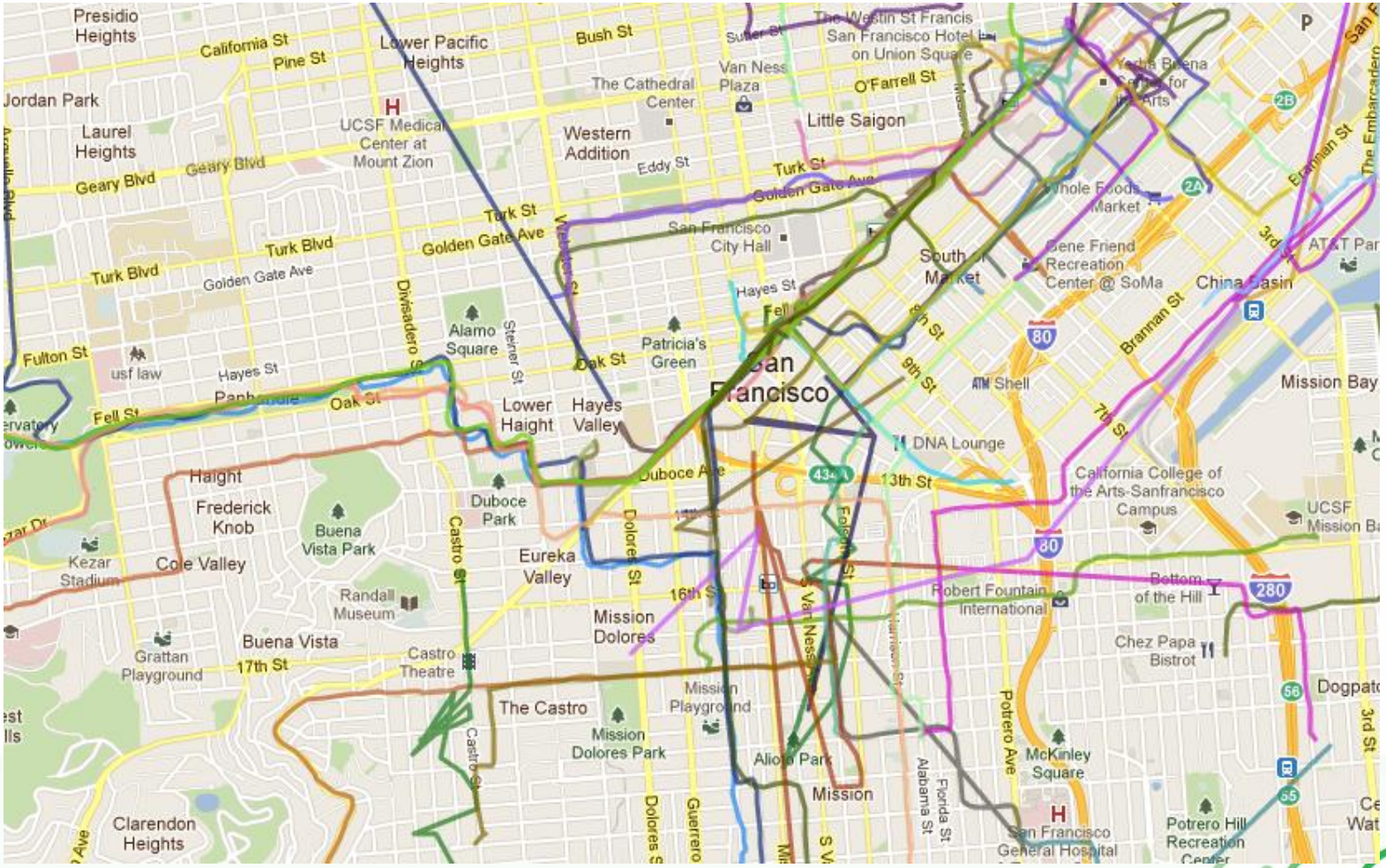
	CycleTracks N-366	BATS N=153	*z-stat*
Age			
Mean	34	33	1.1
Gender			
Female	21%	36%	-3.5
Cycling Frequency			
Daily	60%		
Several Times/Week	34%		
Several Times/Month	7%		
Less than once a month	0%	N/A	

4. What data did we get?

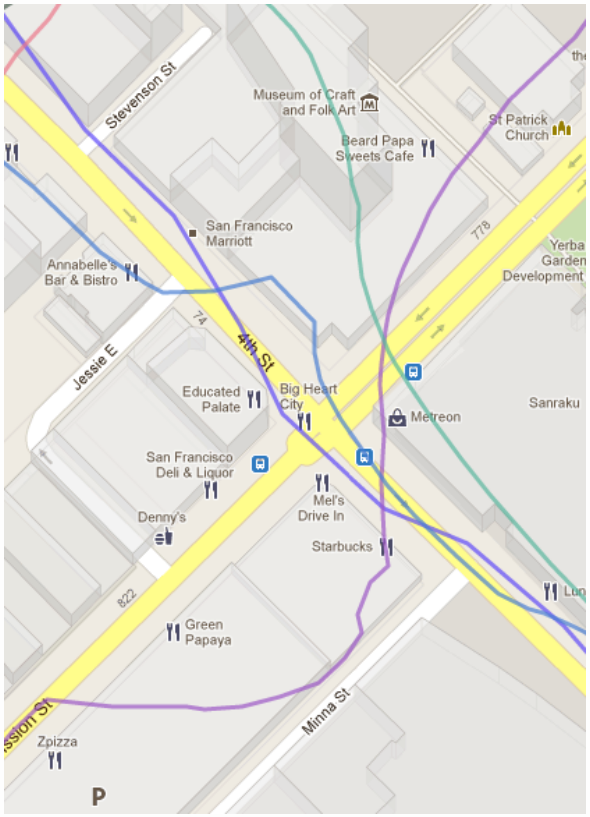


- Data Quality
- Data Summaries

Data Quality: some good, some bad



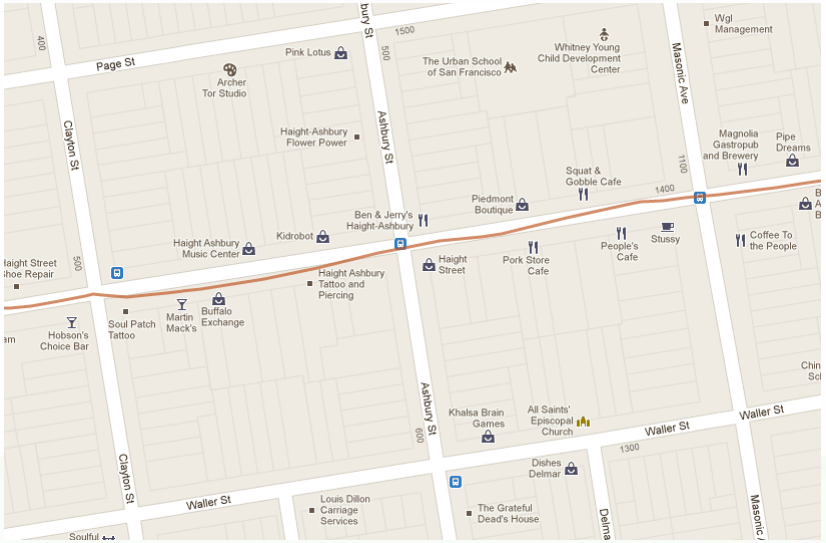
Urban Canyon Effect



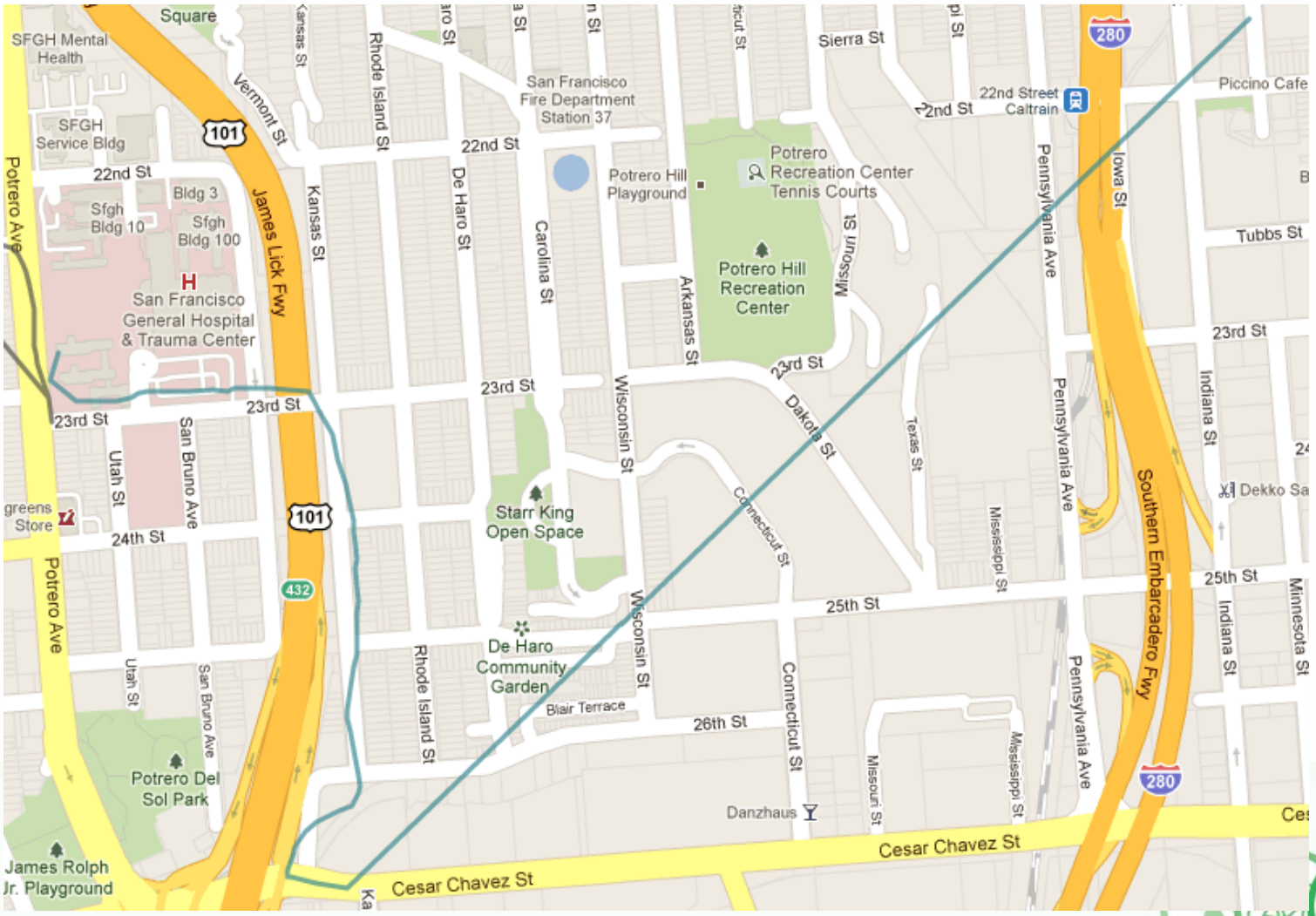
Downtown

vs

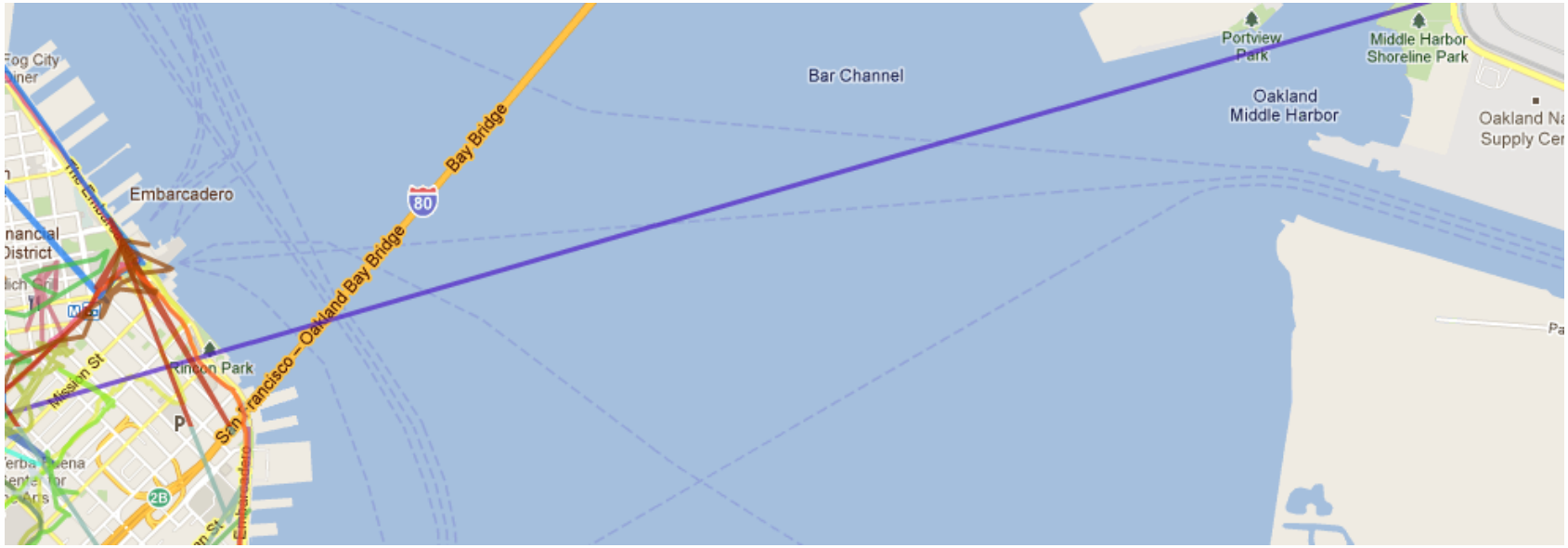
Haight Ashbury



GPS Signal at Beginning of Trip



Not on a Bike

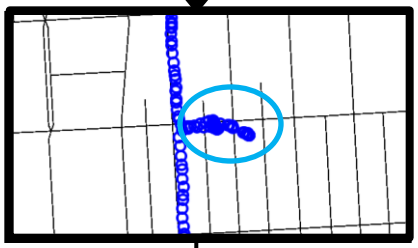

Bar Channel
Portview Park
Middle Harbor Shoreline Park
Oakland Middle Harbor
Embarcadero
Bay Bridge
80
San Francisco – Oakland Bay Bridge
Rincon Park
Mission St

Post Processing Warranted

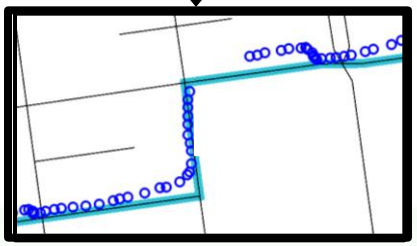
5,178 traces
497 users

$$\exp -\frac{(t-t_j)^2}{2\sigma^2}$$

Gaussian smoothing



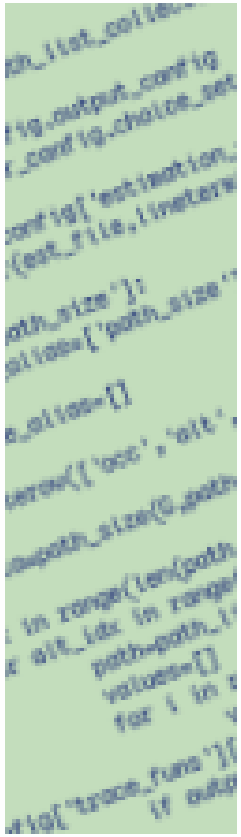
Activity & mode detection



Map matching

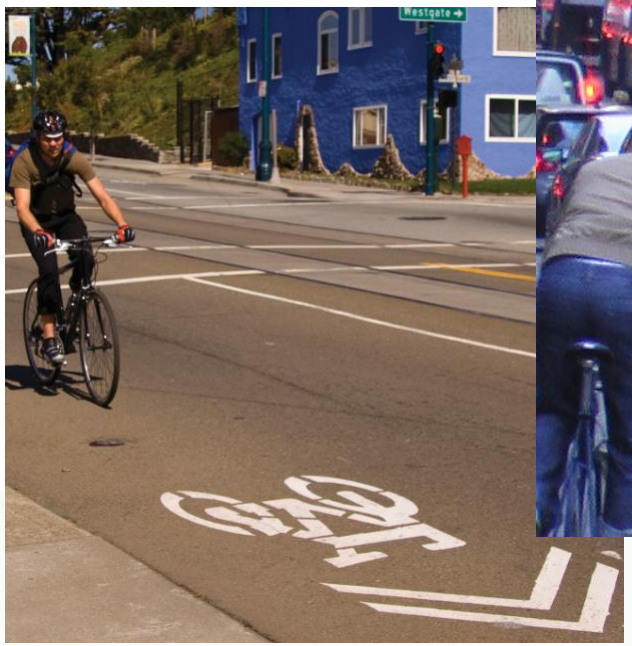
3,034 bike stages
366 users

(Schüssler & Axhausen 2009)



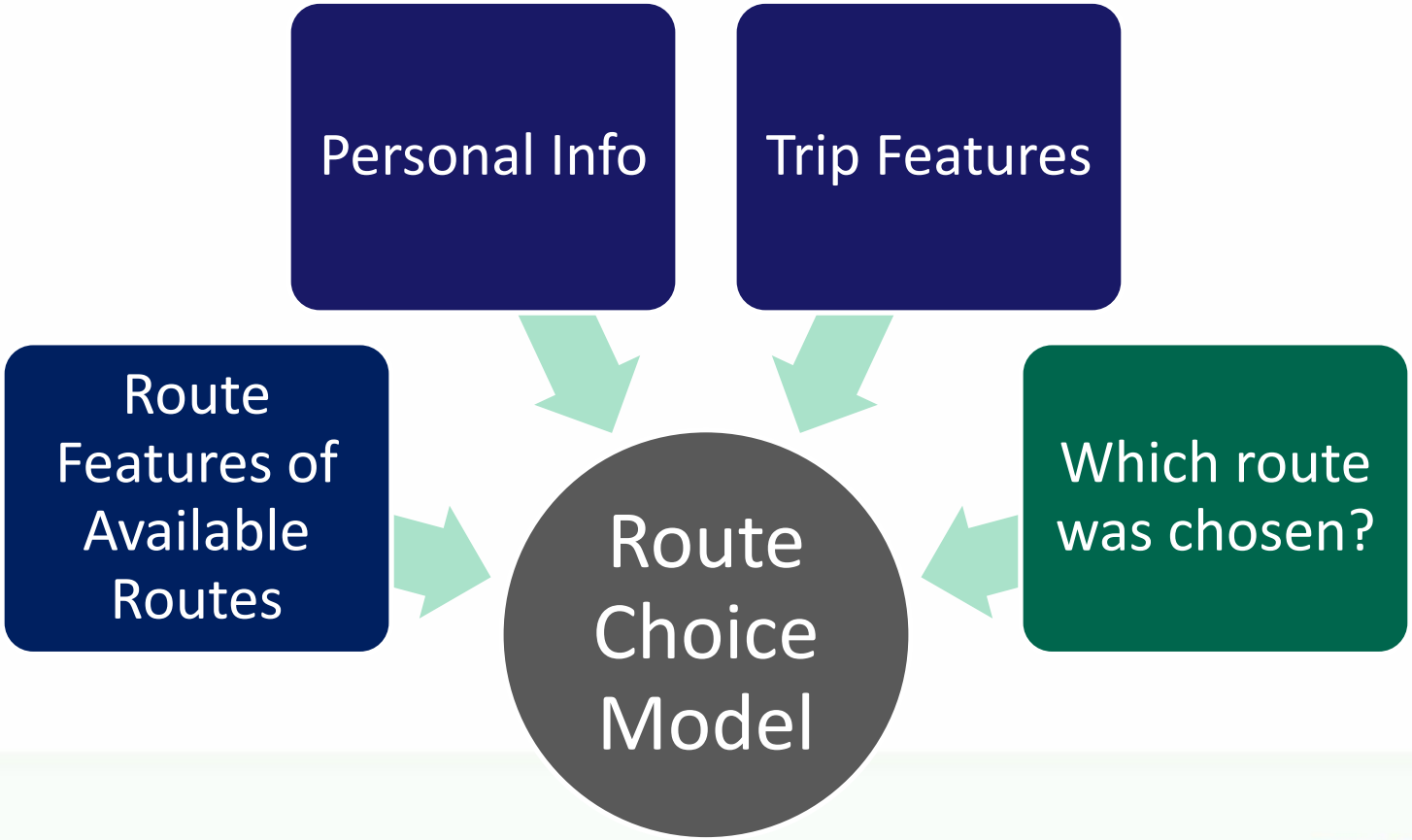
5. What did we do with the CycleTracks Data?

Matched Route Features to the Chosen Route…



…as well as to a set of routes that were not chosen

What makes us choose one bike route over another ?



2,678 weighted observations, $\rho^2 = 0.28$

Estimation results

Attribute	Coef.	SE	*t*-stat.	*p*-val.
Length (mi)	--1.05	0.09	--11.80	0.00
Turns per mile	--0.21	0.02	--12.15	0.00
Prop. wrong way	--13.30	0.67	--19.87	0.00
Prop. bike paths	1.89	0.31	6.17	0.00
Prop. bike lanes	2.15	0.12	17.69	0.00
Cycling freq. < several per wk.	1.85	0.04	44.94	0.00
Prop. bike routes	0.35	0.11	3.14	0.00
Avg. up-slope (ft/100ft)	--0.50	0.08	--6.35	0.00
Female	--0.96	0.22	--4.34	0.00
Commute	--0.90	0.11	--8.21	0.00
Log(path size)	1.07	0.04	26.38	0.00

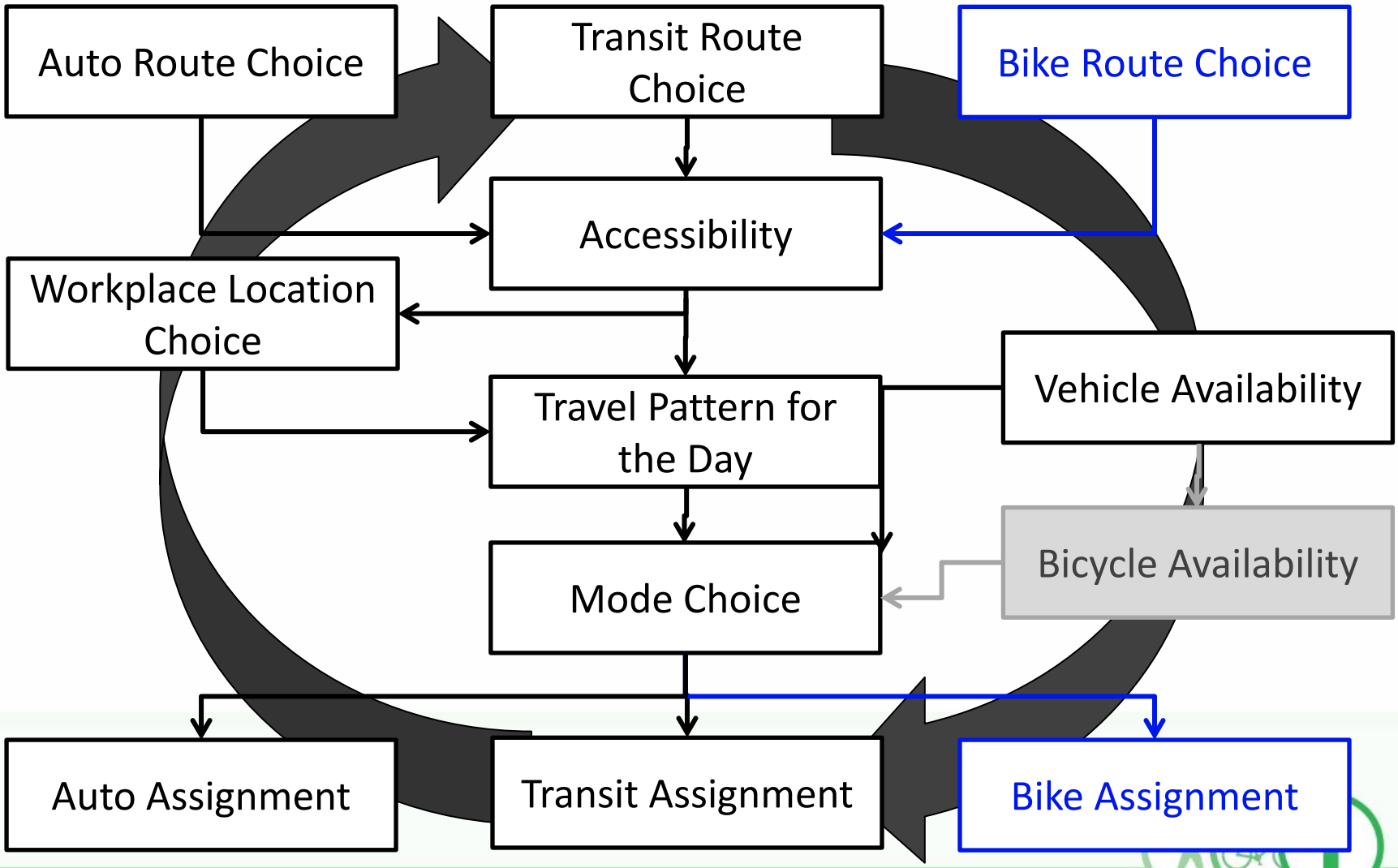
Average marginal rates of substitution

MRS of Length on street for:

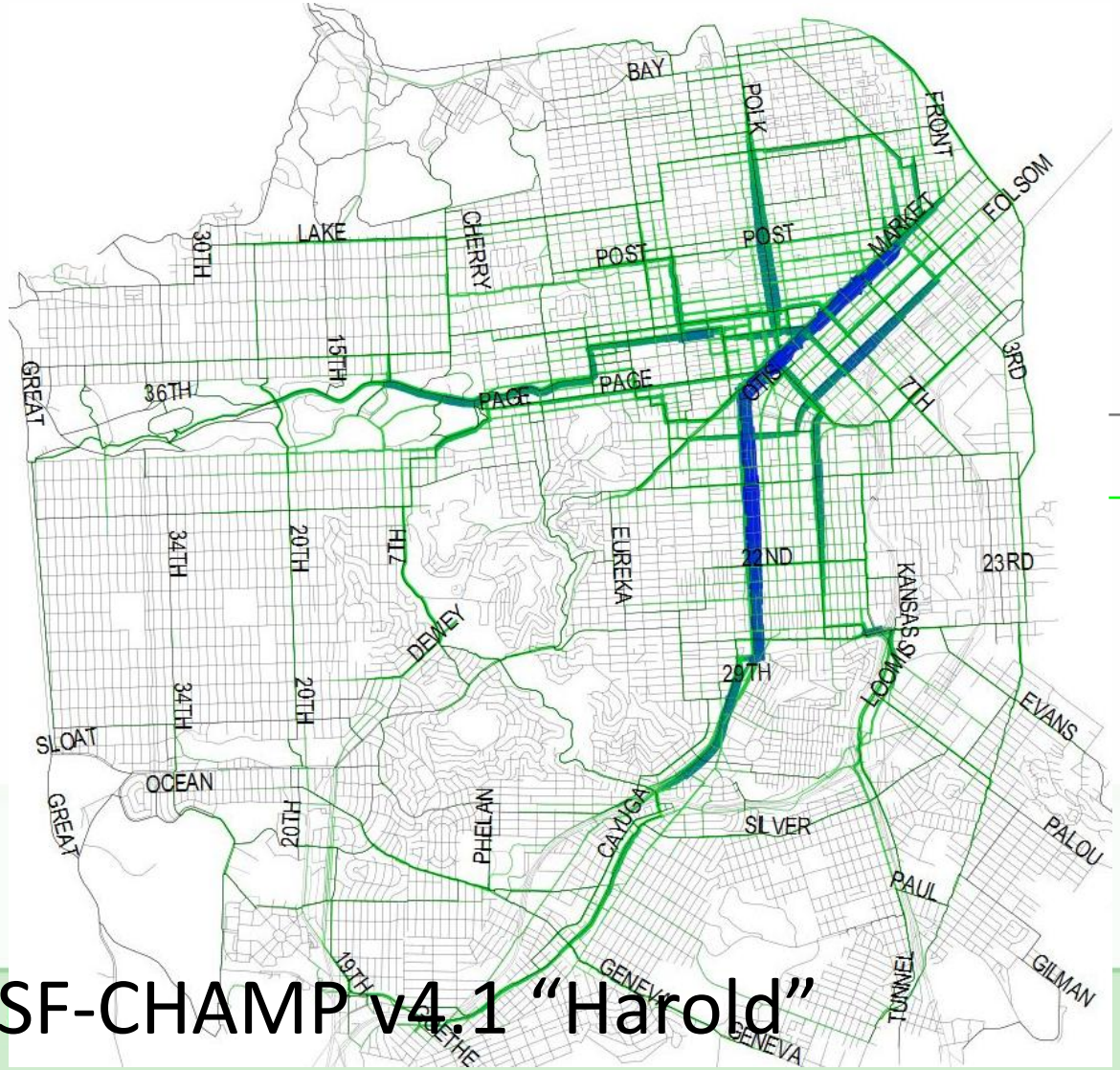
	Value	Units
Length on bike paths	0.57	none
Length on bike lanes	0.49	none
Length on bike routes	0.92	none
• Length wrong way	4.02	none
• Turns	0.10	mi/turn
Total rise	1.12	mi/100ft

User benefit of bike lanes: $0.98 per mile per trip

Bike Accessibility in SF-CHAMP



SF-CHAMP Predicted Bike Trips



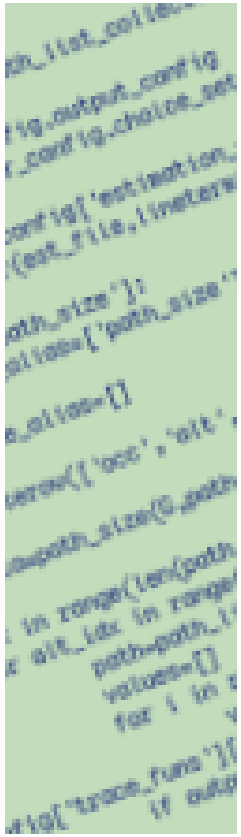
Bikes / hour

0 — 180

20 — 360

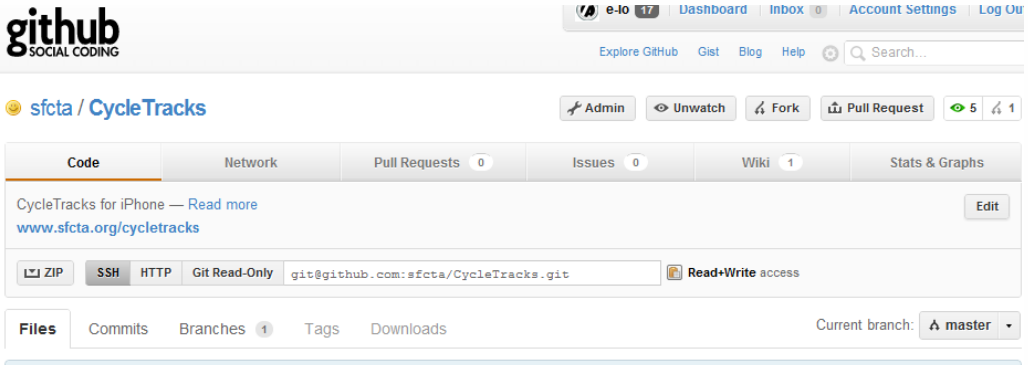
SF-CHAMP v4.1 “Harold”

Pedestrian and Bicycle Information Center

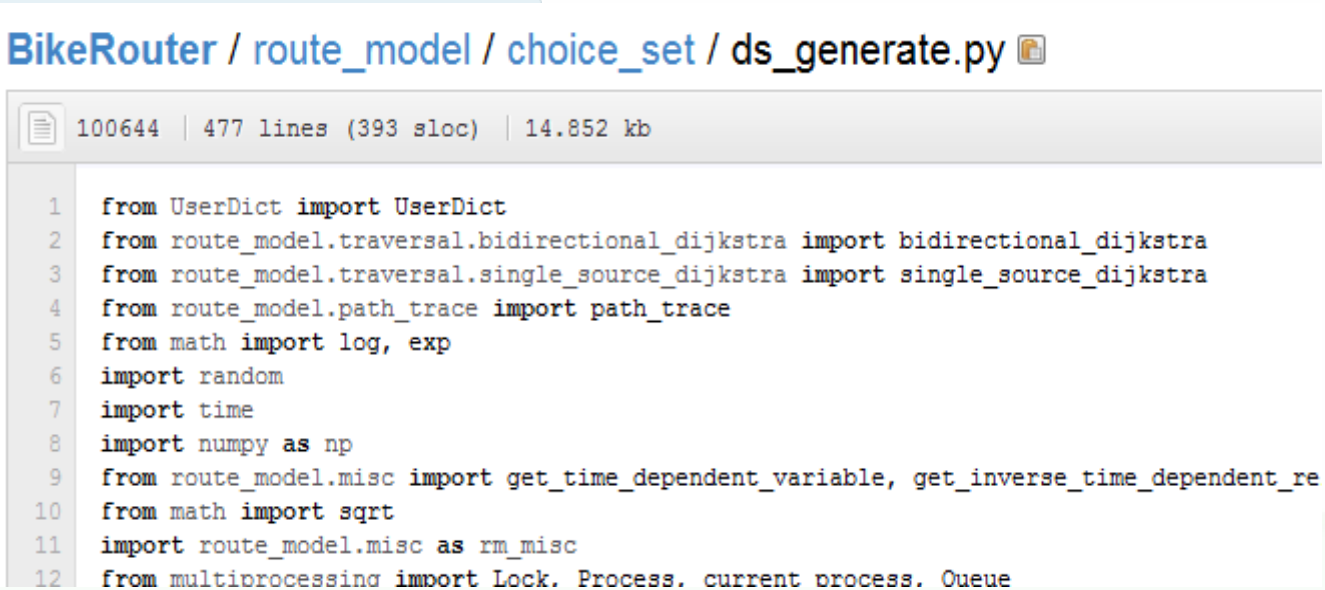


6. Evolution and Future of CycleTracks

All Open Source



- GPL3 License
- Code on GitHub
- Fork us!



www.github.com/sfcta

e.g. AggieTrack

View In iTunes

Free

Category: Education
Updated: May 04, 2011
Version: 1.1
Size: 0.7 MB
Language: English
Seller: lenss lab
© 2011 Radu Stoleru
Rated 4+

Description

This app aims to track the movement patterns of students at Texas A&M University. aggietrack.com.

LENSS Lab, Texas A&M Web Site ▸ AggieTracks Support ▸

What's New in Version 1.1

* "Settings" changed to "User info"
* Checks for data discrepancies
* Data entering is mandatory

iPhone Screenshot

http://aggietrack.com

CycleTracks Works Everywhere…

- We already have the database set up
- Agencies can download “scrubbed” data

Austin,TX

Monterey Bay, CA

…and more!

SFCTA Bike Model Trip Viev

bikedatabase.sfcta.org/trip/gettrips?where=austin&lat_center=37.7733&long_center=-122.4178&lat_maxdist=1&long_maxdist=1&type=map&count=100&startidx=0

WebHome < Modeli... | SFAppeal: San Franc... | A Practical Guide to ... | Caltrans PeMS | Software (R+GIS+GE... | Learning Python -- ... | http://www.sfmta.c... | Federal Transit Adm...

Where: ○ Santa Clara ○ San Francisco ○ San Mateo ○ Monterey ◉ Austin
○ Or enter in latitude: 30.267074 and longitude: -97.742958

Latitude Max Dist: 1

Longitude Max Dist: 1

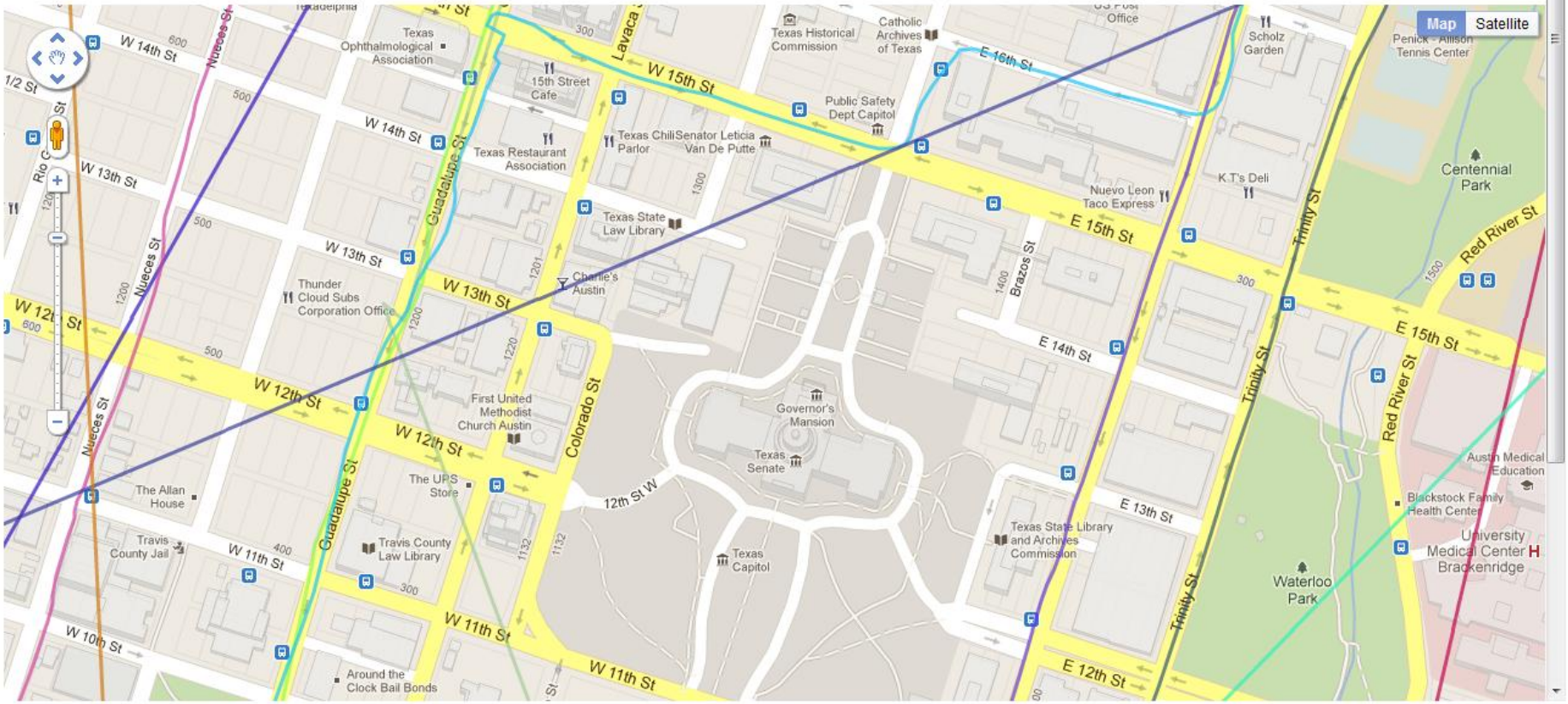
Type: ◉ Map ○ Table ○ CSV (will trigger file download; recommended for large counts)

Count: 100

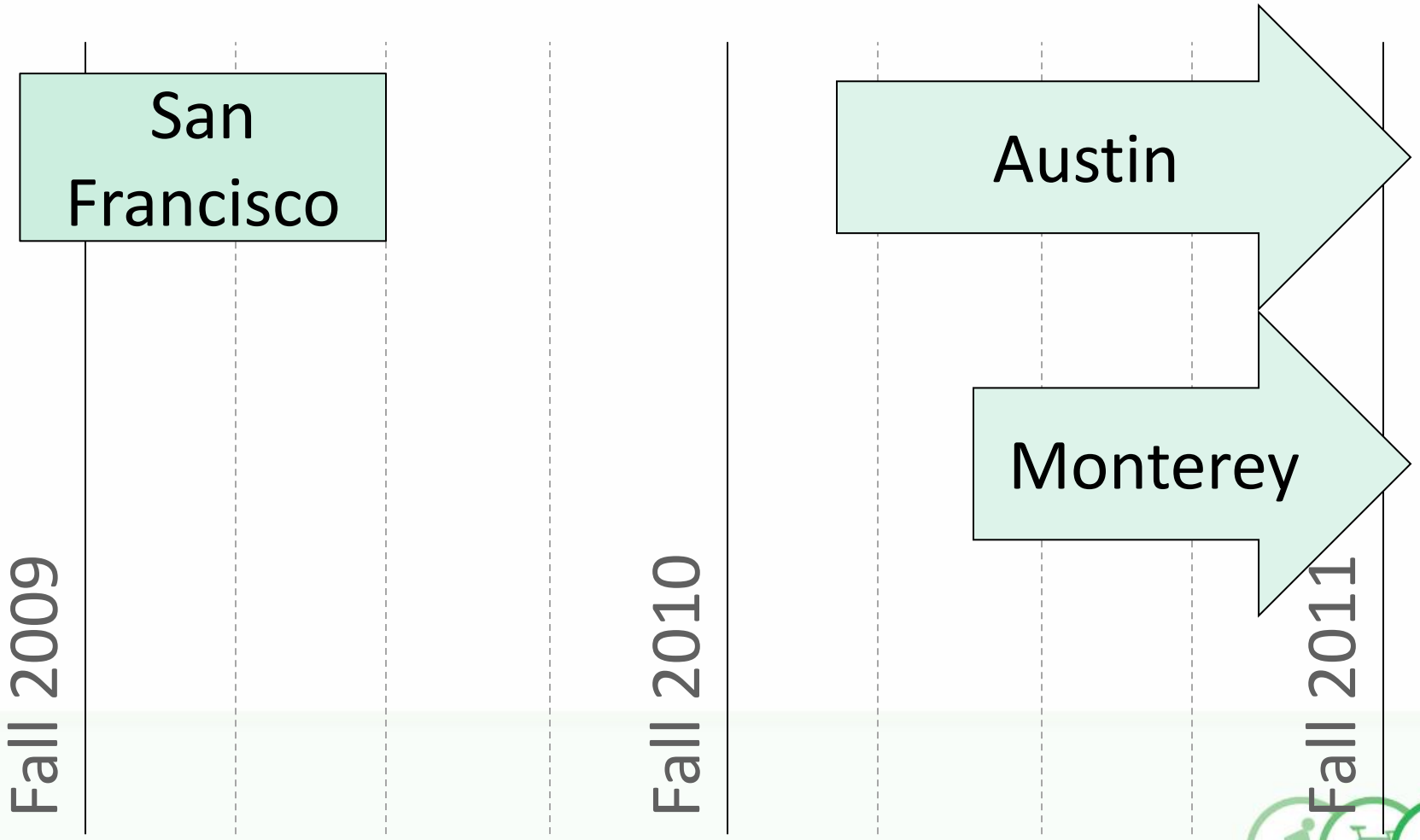
Start index: 0

submit

Found 3040 trips. Showing 0 - 99. The lat/long bounding box is shown in dark grey.



CycleTracks Data Collection Timeline



Credits

Development	
Billy Charlton	Matt Paul
Lisa Zorn	
Michael Schwartz	
Jeff Hood	

Support
Caltrans
Prop-K Sales Tax
NSF

Outreach
Bay Area Bike Coalition
San Francisco Bike Coalition

Help
Nadine Schussler
Kay Axhausen

Questions?

elizabeth.sall at sfcta dot org

www.sfcta.org/cycletracks