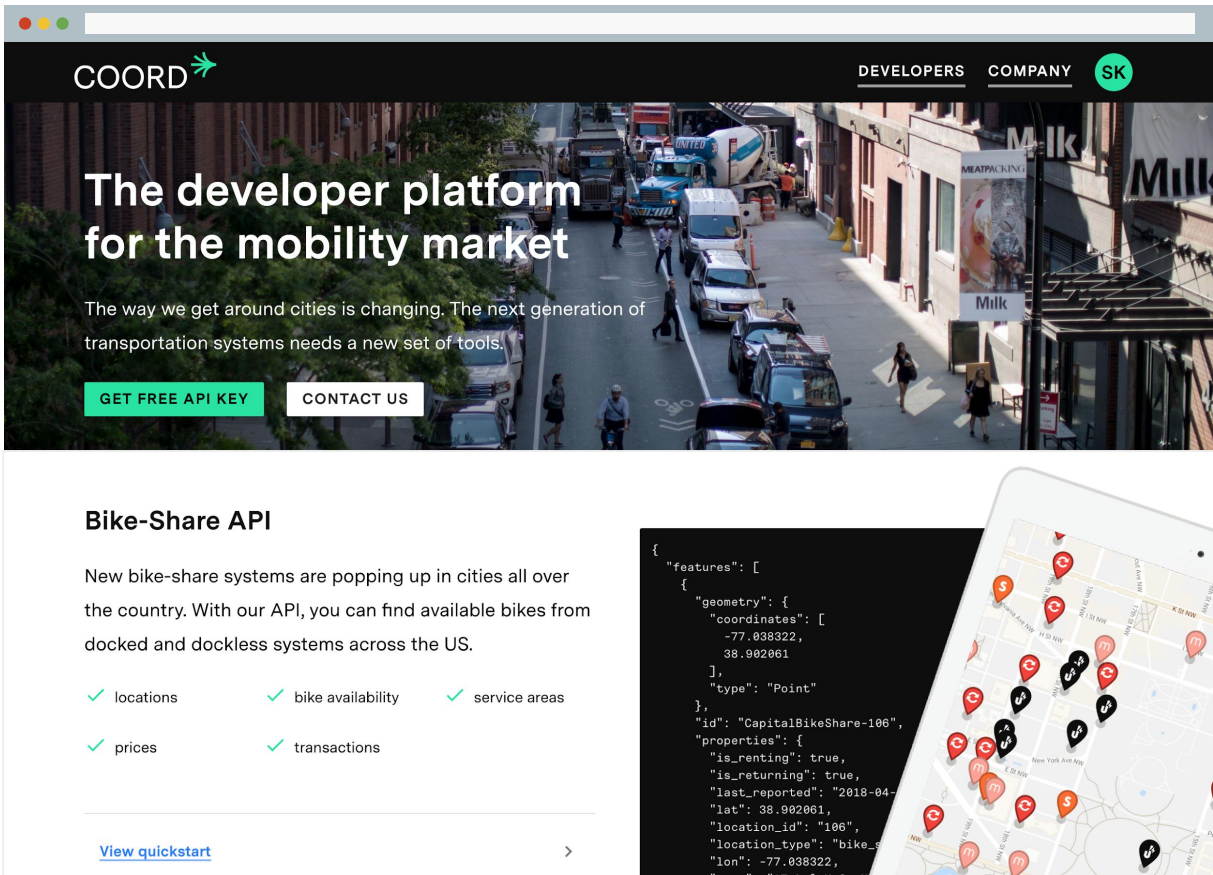




The developer platform for the mobility market

PRODUCT

A single API suite
that enables any
app to integrate
mobility services.



The screenshot shows the COORD website. The header includes the COORD logo, navigation links for DEVELOPERS and COMPANY, and a user profile icon labeled SK. The main banner features a city street scene with the headline "The developer platform for the mobility market" and the subtext "The way we get around cities is changing. The next generation of transportation systems needs a new set of tools." Below this are two buttons: "GET FREE API KEY" and "CONTACT US".

Bike-Share API

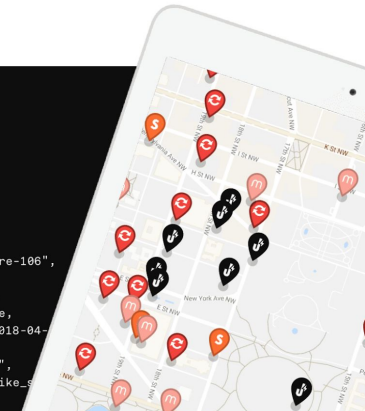
New bike-share systems are popping up in cities all over the country. With our API, you can find available bikes from docked and dockless systems across the US.

- ✓ locations
- ✓ bike availability
- ✓ service areas
- ✓ prices
- ✓ transactions

[View quickstart](#) >

```
{
  "features": [
    {
      "geometry": {
        "coordinates": [
          -77.038322,
          38.902061
        ],
        "type": "Point"
      },
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      "properties": {
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        "is_returning": true,
        "last_reported": "2018-04-",
        "lat": 38.902061,
        "location_id": "106",
        "location_type": "bike_s",
        "lon": -77.038322,

```



BIKE-SHARE

Bike share and shared mobility is growing in the US and globally.



Lime was valued for \$1B after being founded in 2017.



Jump Bikes (formerly Social Bicycles) sold to Uber for \$200M.



Motivate (system that support 80% of US bike trips in 2017) sold to Lyft for \$250M.



Bird Scooters was valued for \$2B valuation after less than 2 years of operations.

More systems, more bikes, more rides!

35M

US bike-share
trips

In 2017

57.5K

New bikes
added

In 2017

44%

Dockless bikes
(of all shared bikes)

In 2017

Sources: NACTO (<https://nacto.org/bike-share-statistics-2017/>)



THE PROBLEM

New types of systems which don't fit neatly into the docked standard:

- Dockless
- E-bikes
- Scooters

THE PROBLEM

New types of systems which don't fit neatly into the docked standard:

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Data is also siloed inside apps and individual feeds



A single set of API calls for all systems



Search for
Systems



Find Docks
and Bikes



Get Prices

DATA SOURCES



GBFS

General Bikeshare Feed Specification

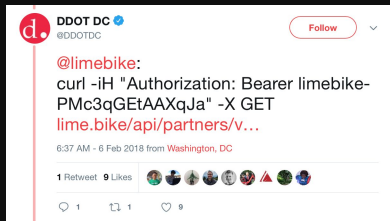
All GBFS-compliant systems list their feeds at github.com/NABSA/gbfs



Social Bicycles

A well-documented API! System areas, bikes, hubs, and more.

Now JUMP Bikes/Uber, also have their data.



Cities

Cities have open data repositories, or list required data sources.



Luck

Occasionally vendors add undocumented cities! It's like a transit treasure hunt!

github.com/ubahnverleih/WoBike

DATA ACQUISITION CHALLENGES

Sometimes cities require “public” feeds, but don’t announce them.

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The web is hard - feeds go down.



DIFFICULTIES

Also, the current GBFS standard doesn't list service areas,
so we built them for 60+ systems!

Here's how we did it...



HOW WE DETERMINE SERVICE AREAS - DOCKLESS

APIs

Social Bicycles provides an API to get service areas.

New GBFS should include this too!

Maps

City permits may include maps.

Apps also show areas, so the user knows where to return the bike.

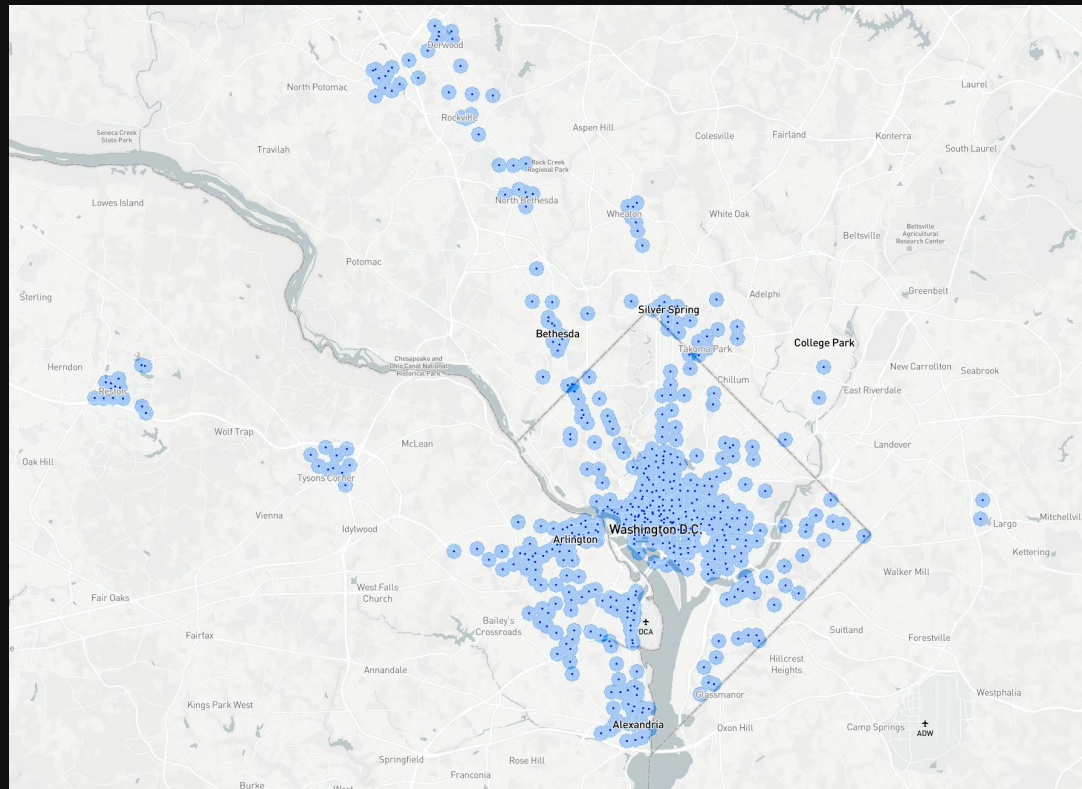
Permits

If all else fails, the permits usually list areas, even if it's just city limits.



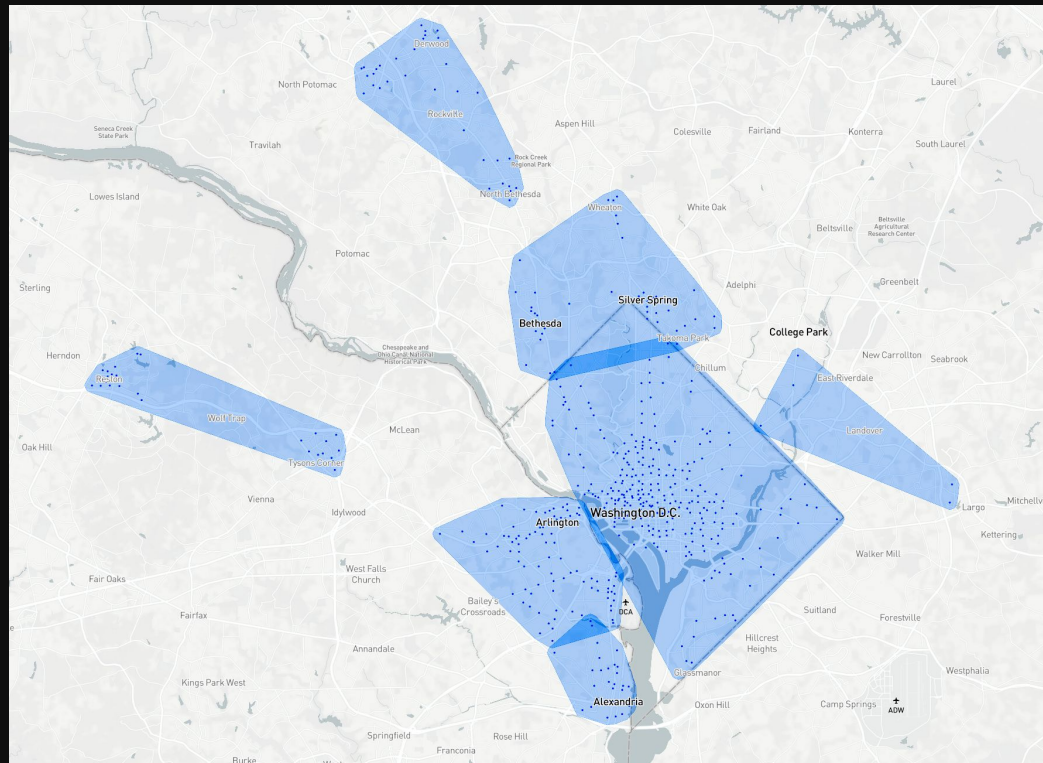
HOW WE DETERMINE SERVICE AREAS - DOCKED

1. Get all dock locations
2. Make a circular buffer around each
3. Merge the buffers



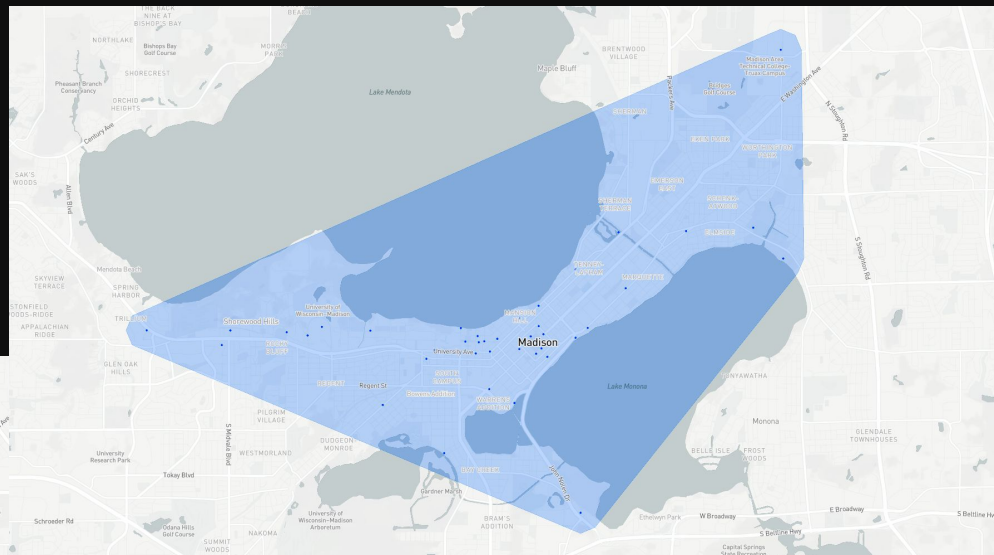
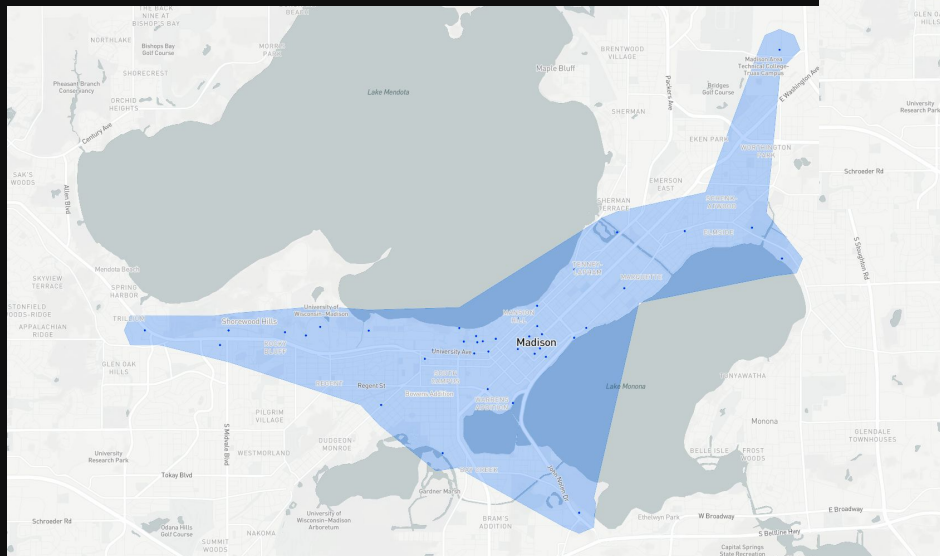
HOW WE DETERMINE SERVICE AREAS - DOCKED

1. Get all dock locations
2. Make a circular buffer around each
3. Merge the buffers
4. Make a hull around the whole thing
5. Separate by regions, if need be!



HOW WE DETERMINE AREAS - DOCKED

Sometimes convex, sometimes concave,
depends on the system!



Hulls are nice - anything between bike stations
is theoretically “within” the system, while things
outside the outer bike stations are “outside”.

HOW WE DETERMINE AREAS - DOCKED

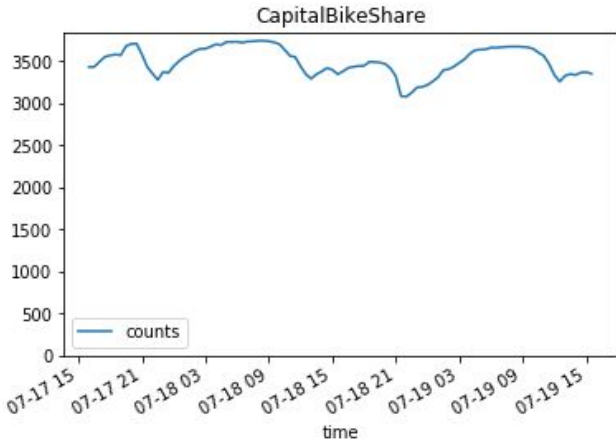
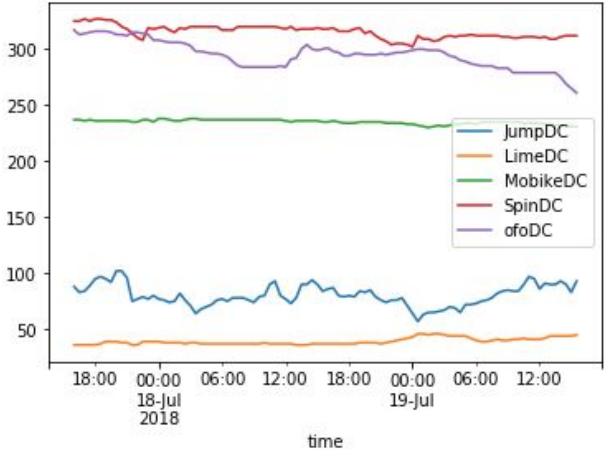


DEMO

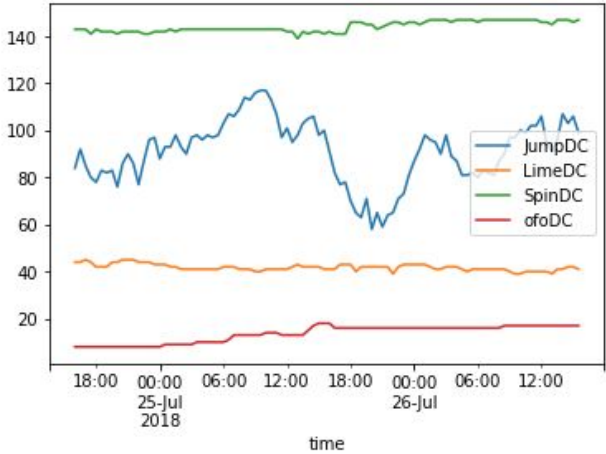
Demo!

IS THIS DATA
REAL?

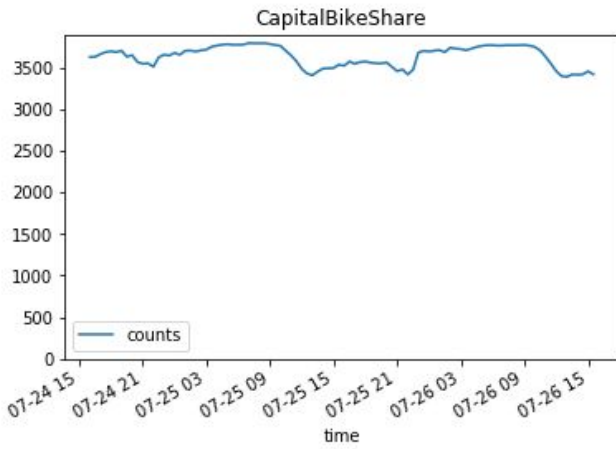
BEFORE MOBIKE LEFT



IS THIS DATA
REAL?



AFTER MOBIKE LEFT
(1 week later)



We rely on systems and cities to make data public.
We're only as good as the data the systems provide.

1. Is it better to show old data or no data?
2. What's the best way to communicate inconsistencies in the data?

UP NEXT!

We started with docked systems,
then added dockless and hubs.



Scooters are coming soon!

Join us at our Coord developer workshop next week to learn more.

Join us at our Coord developer workshop next week to learn more.

That's it. Thanks!

noah@coord.co

[@coordcity](#)

