



UW
SUPPLY CHAIN TRANSPORTATION
AND LOGISTICS

Alley Inventory and Truck Load/Unload Occupancy Study
Urban Freight Lab
Final 50': Goods Delivery System Research Project
Task Order 4

Training Session - Winter 2018

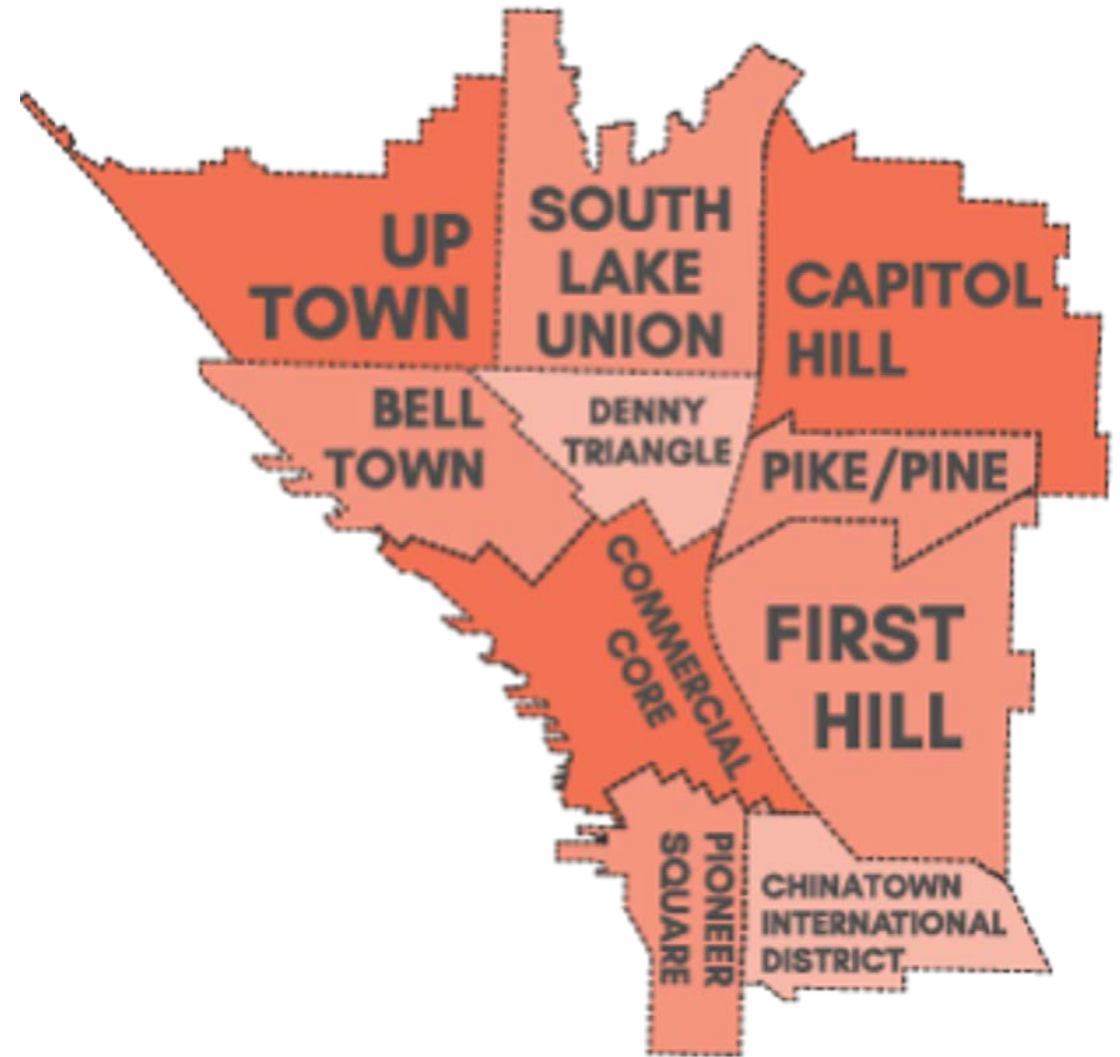


Study Area

SDOT has engaged the Urban Freight Lab to identify the geospatial locations and features of alleyway infrastructure in One Center City.

The urban centers include:

- Downtown
- Uptown
- South Lake Union
- Capitol Hill
- First Hill



Four Data Collection Principles

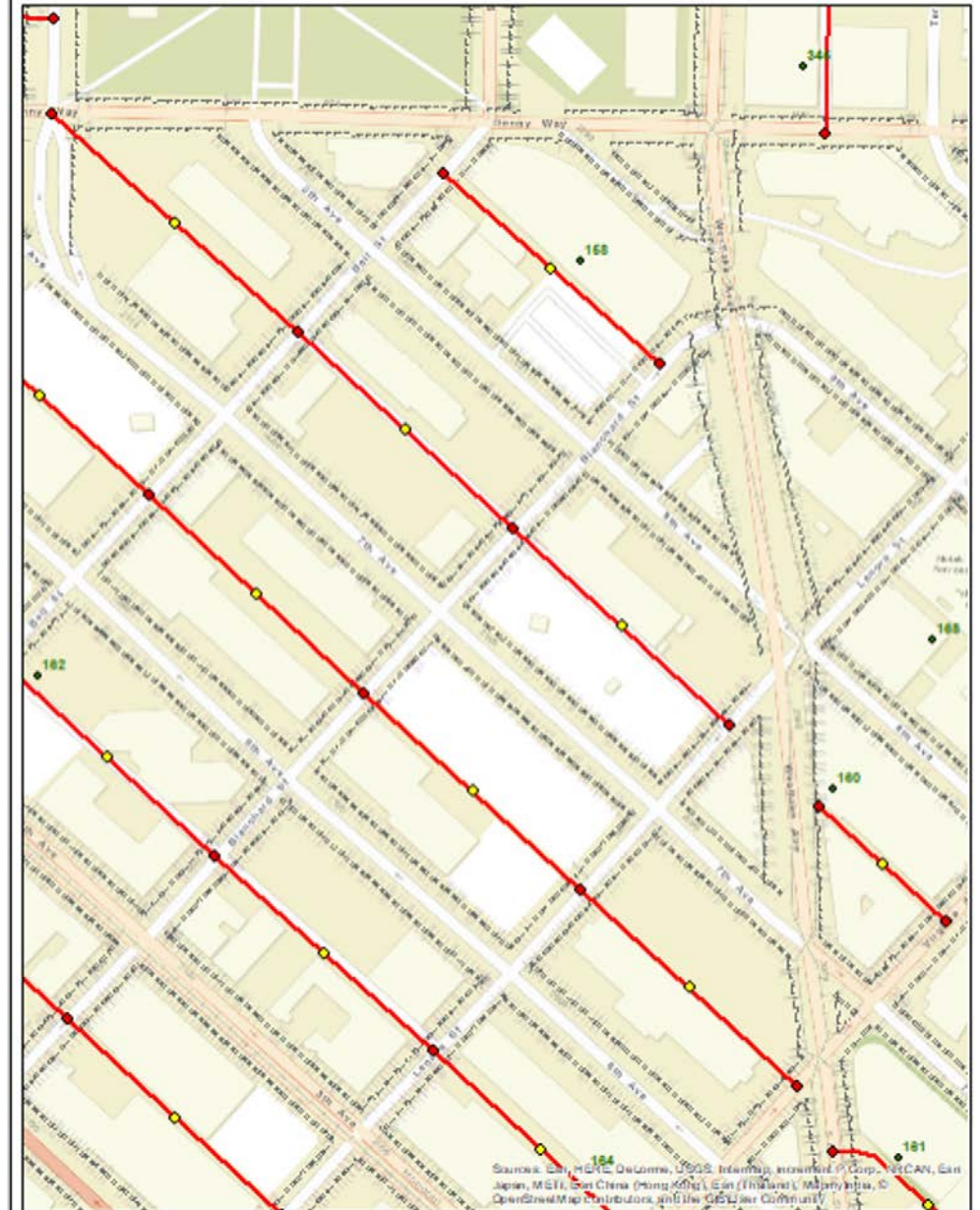
The Urban Freight Lab adheres to four principles when designing data collection approaches. To be widely used, the method must be:

1. Replicable;
2. Available at a reasonable cost;
3. Groundtruthed;
4. And have quality control measures built into each step.



Data collection Plan

- We work in teams of two
- Your assigned shift can be Monday through Saturday, anytime between 8:00 am and 5:00 pm, depending on your availability.
- Data collection will involve walking around city blocks looking for alleyways.
- We set short term goals with subareas.



Data Collection Tools



Laser
device



PC
Tablet

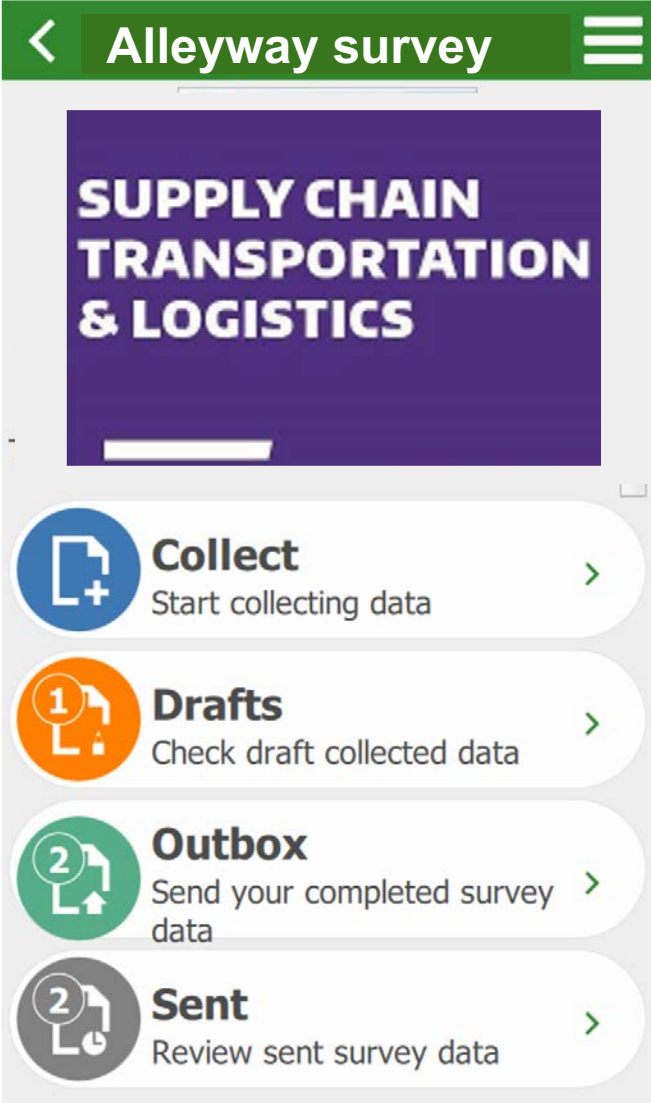
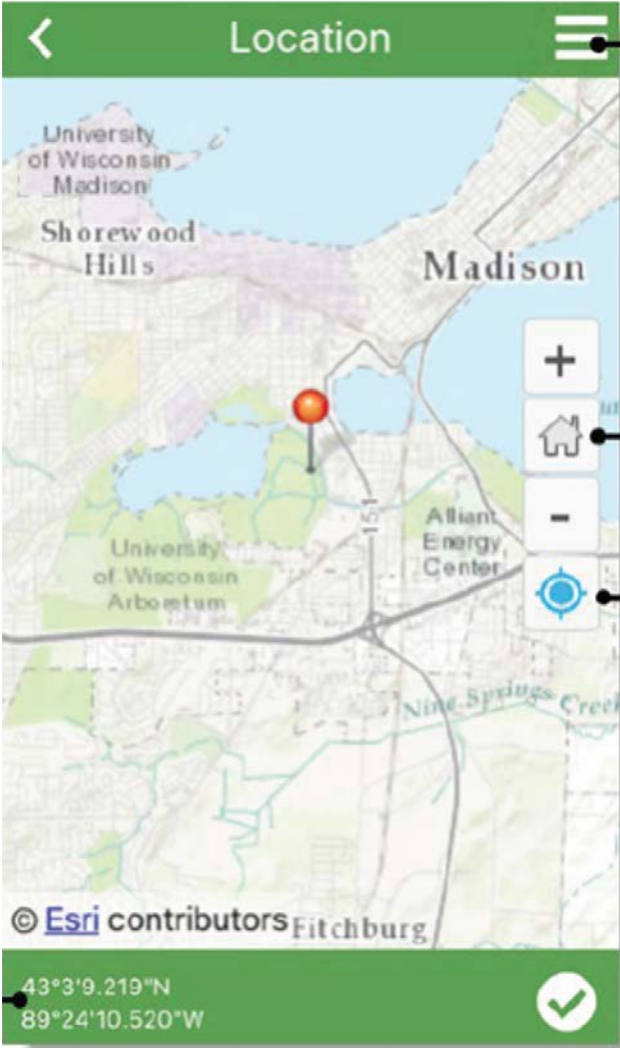
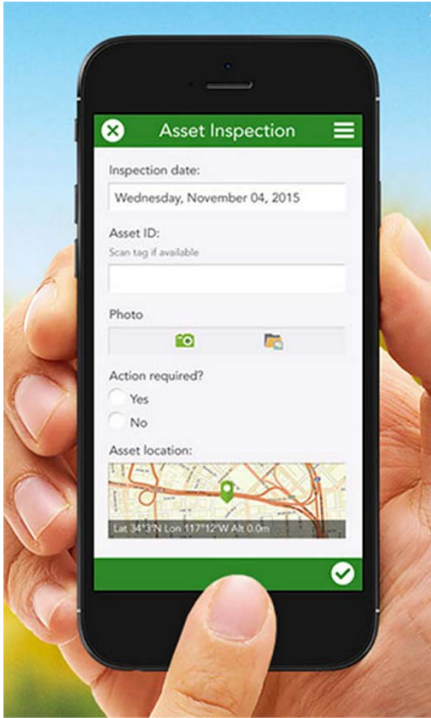


City blocks
map

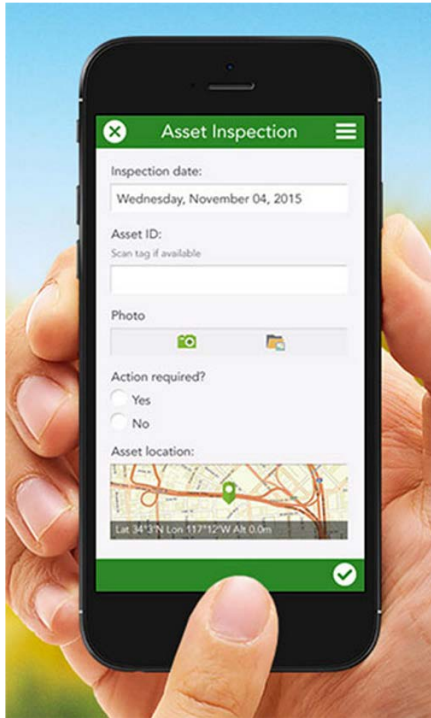


Measuring
wheel

Data Collection App



Data Collection Tools: Integrated System



PFI Survey Overview Design Analyze **Data**

Esri, HERE, FAO, NOAA

PFI_Survey (20 features, 0 selected)

KEY_ID	Date Of Survey	Time of survey	What is the city block of this survey location?	What is the survey id of on the hard copy map?	How is the infrastructure accessed? From a:	What is the name of the street?	What is the alleyway direction?	Is necessary to go through a gate to access the infrastructure?	GGPSDV_X	GGPSDV_Y
5b4ef170-ccc8-43d7-s800-a4c04082d4a1	Jul 18, 2017	07:29	9	6	Street	Huh		No	-122.311432022876	47.6701297341
t66c14d7-bfa1-45a2-0451-b696538fc574	Jul 18, 2017	10:11	234	1	Street	E Denny Way		No	-122.311206635541	47.6186740589
f87dde8-4cbd-4514-8453-37b29d0c360	Jul 18, 2017	10:42	234	2	Street	Harvard Ave		No		
t2371a64-a471-4c6a-0ccf-f237dd00abfb	Jul 18, 2017	11:09	234	3	Street	Harvard Ave		No	-122.311546422432	47.6183705544

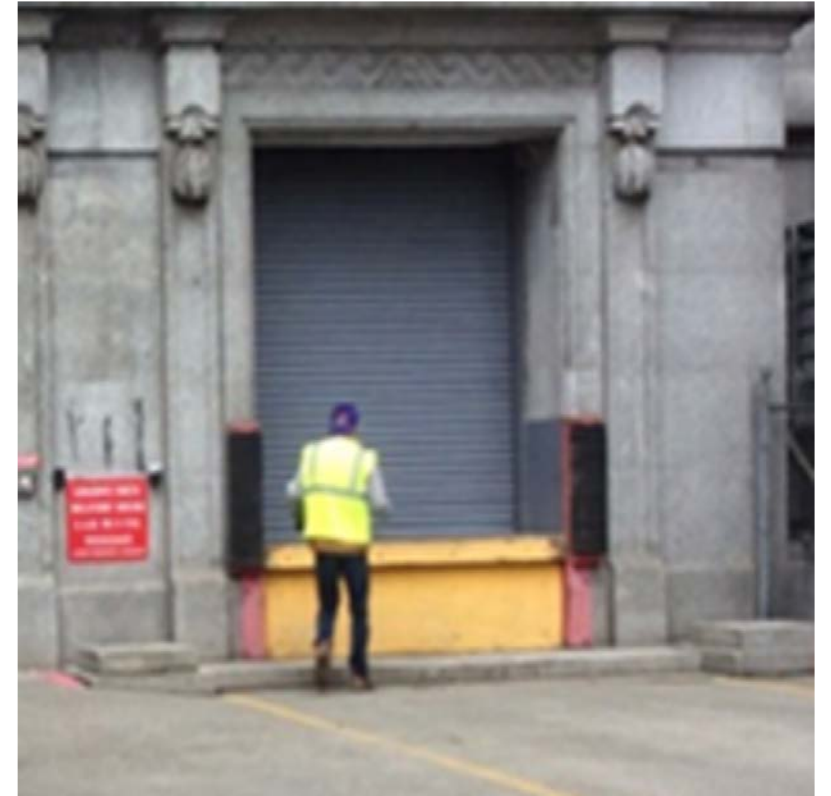
[Open in Map Viewer](#)
[Expand Table](#)
 Show Individual Response
 7/18/17 - 7/19/17
CSV
Download

Security Protocol

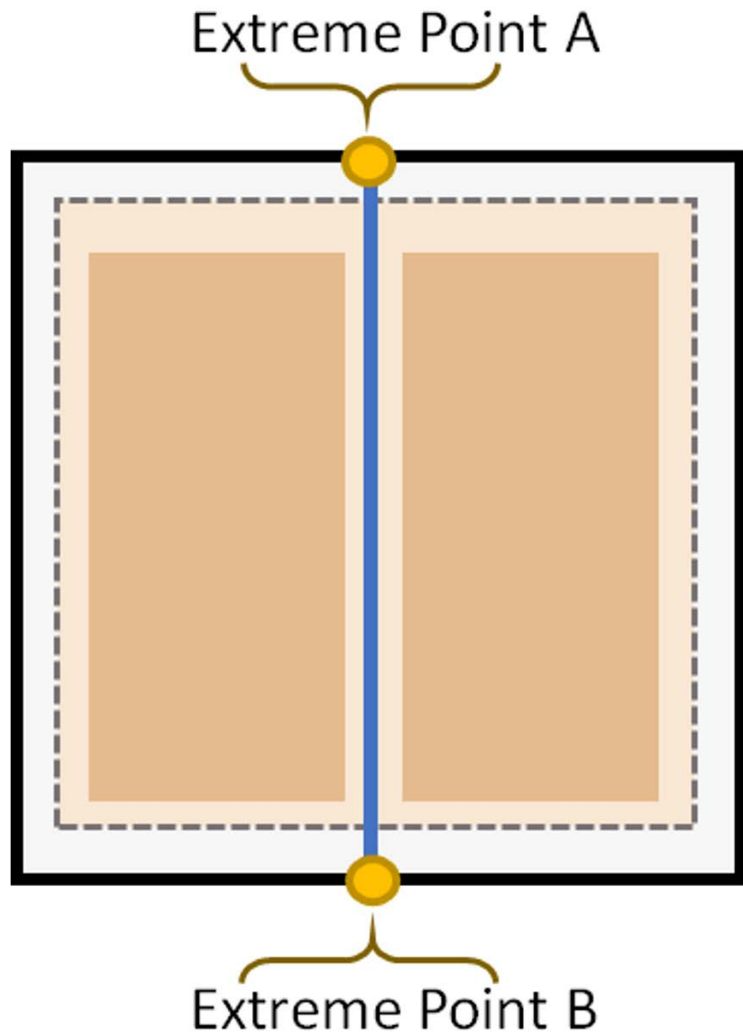
UW letter and security vest

Seattle Shield Blast

SDOT website – Final 50 Feet Program



Alleyways' Extreme Points



Categories

Access Points

Dead End

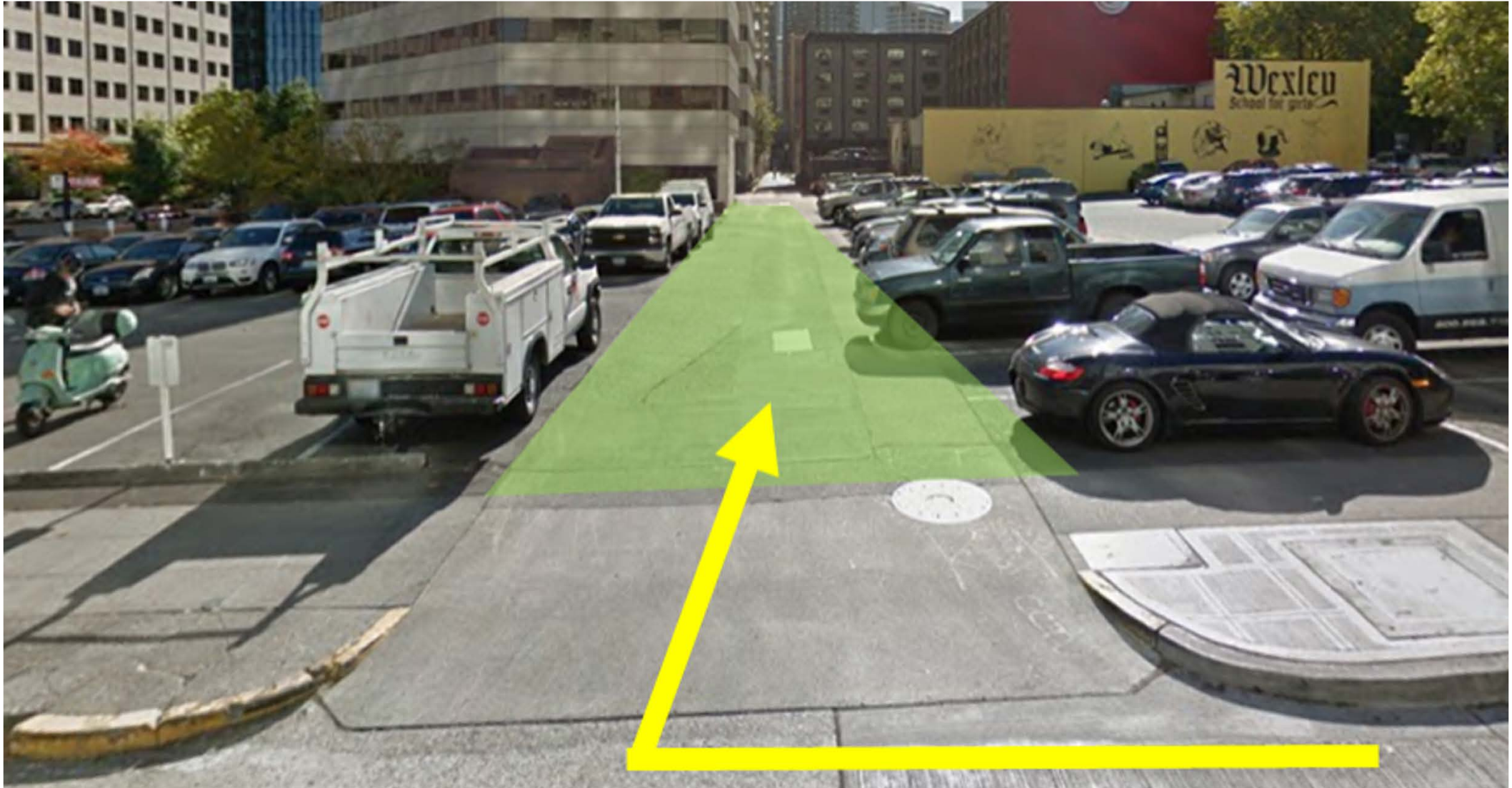
Intersections

Alleyways' Extreme Points - Access Points (1/2)



Located in the public right away with access to street.

Alleyways' Extreme Points - Access Points (2/2)

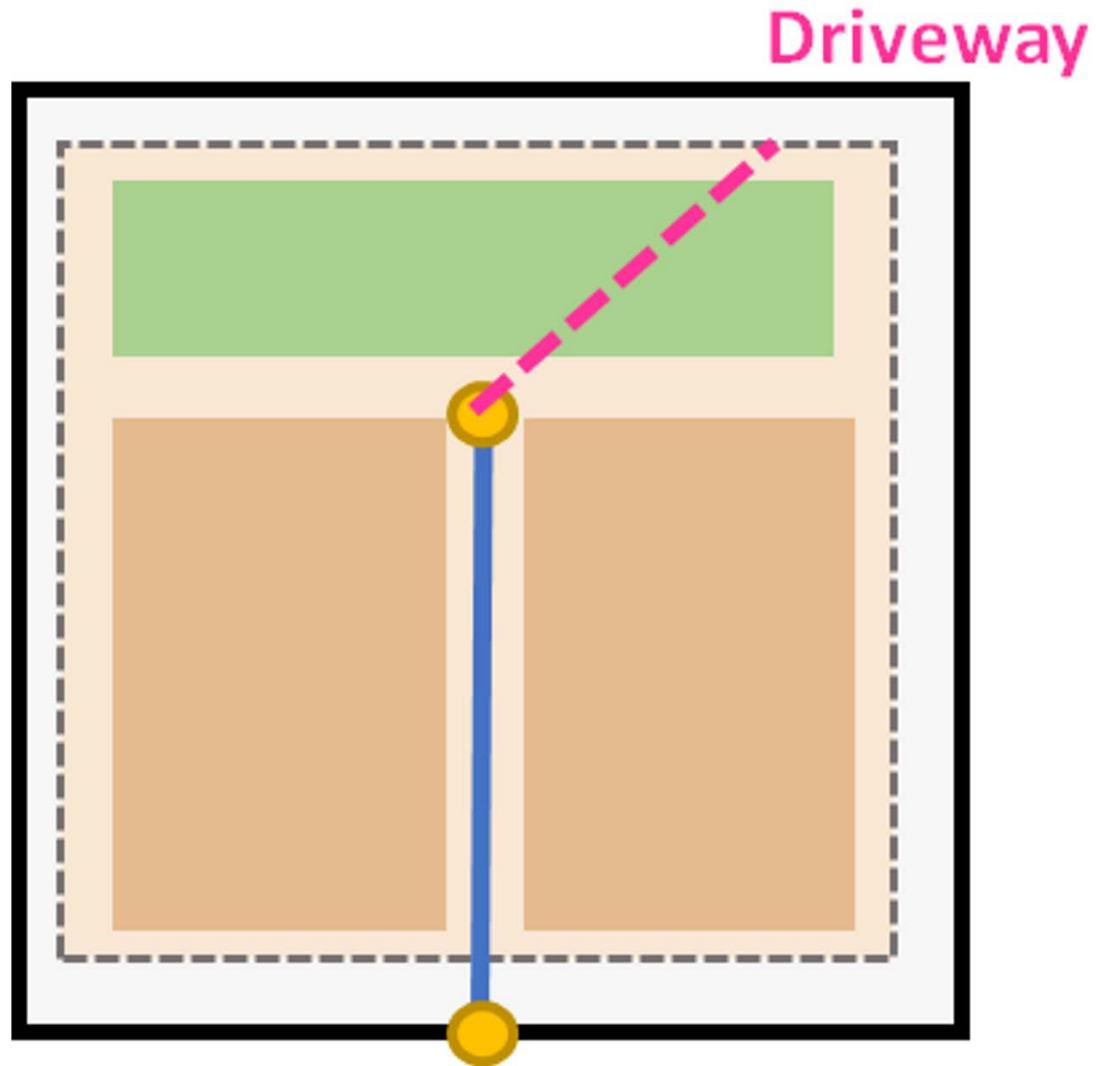


Alleyways' Extreme Points - Dead end (1/3)



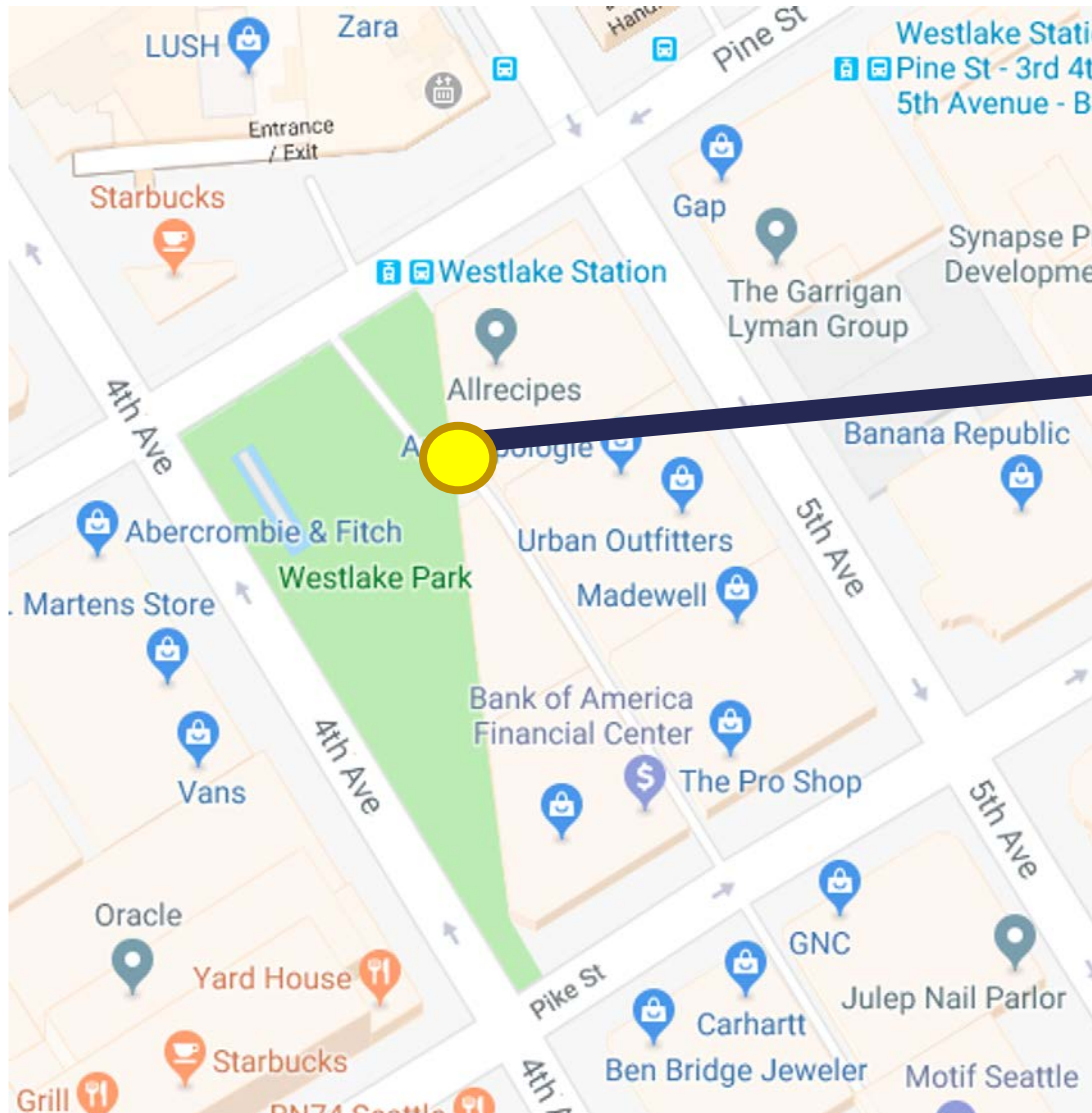
Dead end Type 1:
Ending at a to building
outline.

Alleyways' Extreme Points - Dead end (2/3)



Dead end Type 2:
Ending at a driveway with
access to street.

Alleyways' Extreme Points - Dead end (3/3)

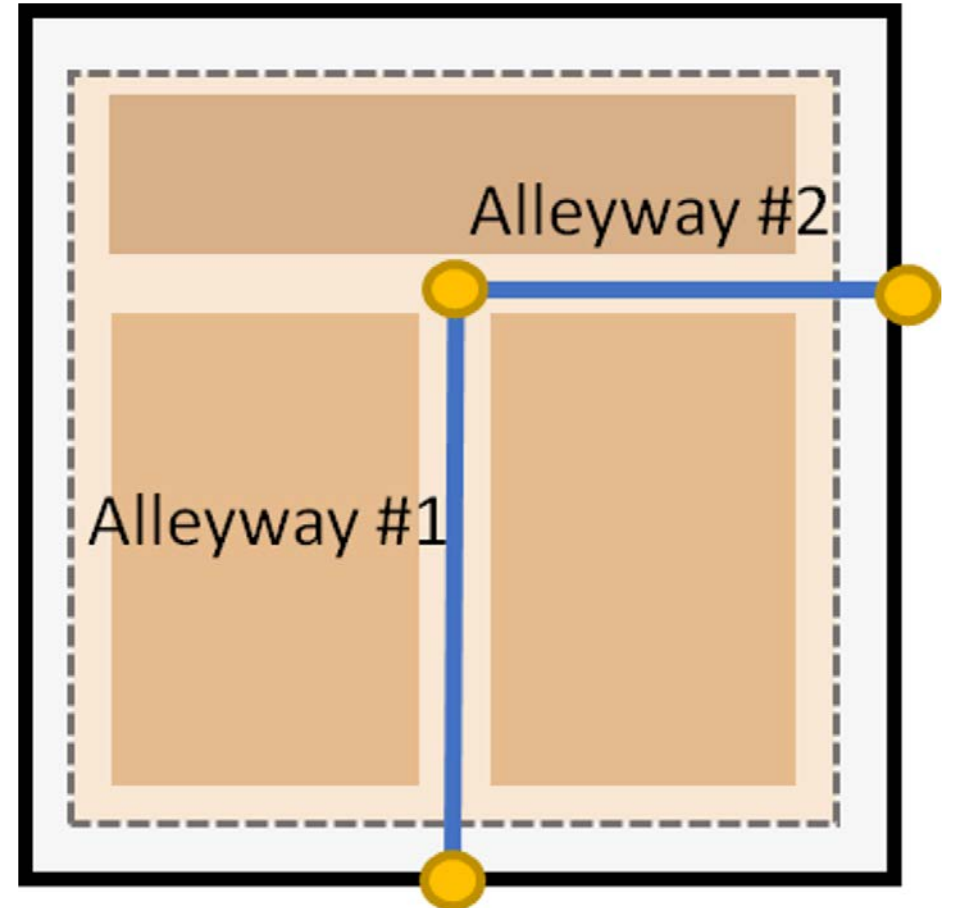


Dead end Type 3:
Ending at open property.

Alleyways' Extreme Points - Intersection

Intersection within the city block between:

- Two alleyways
- An alleyway and a street



Revising King County alleyway database

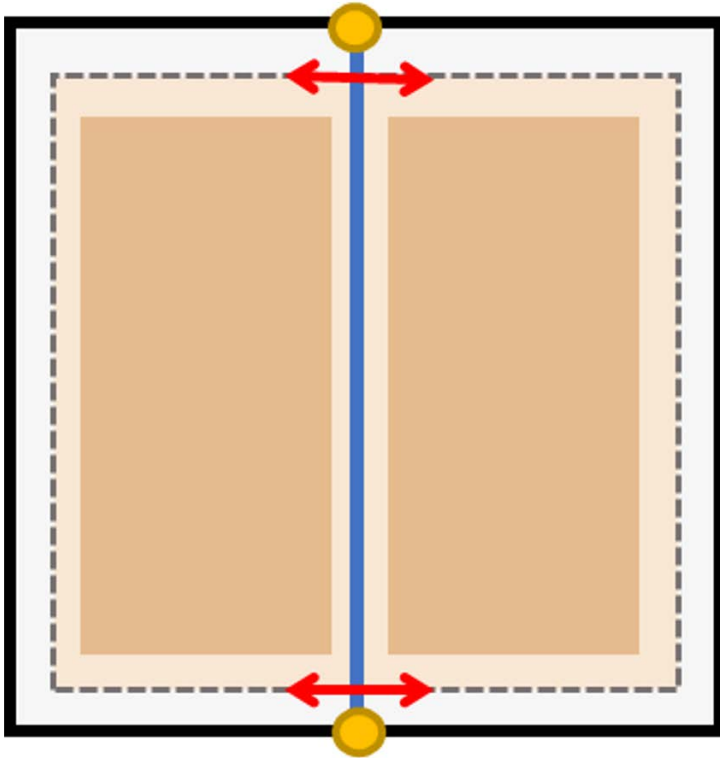
Question to be answer:

Is the alleyway shown on the base map?



Selecting the survey start point

Width of Extreme Point A

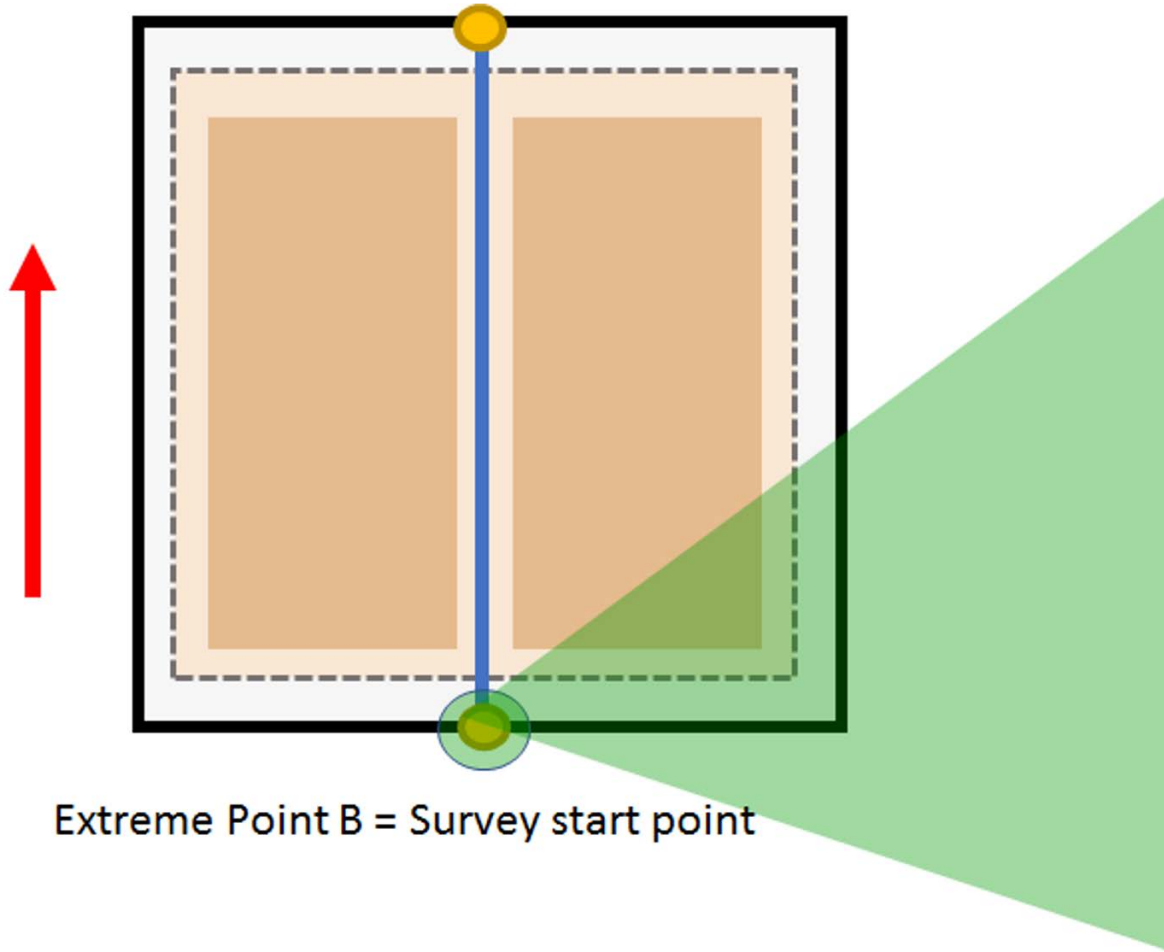


Width of Extreme Point B

If the alleyway exists in field, then:

- a. Compare the width of the alleyway extremes UNLESS the extremes are (1) dead end ending at a building outline or (2) an intersection.
- a. Start the survey at the narrower extreme. For example:
 - *If $\text{width}_A > \text{width}_B$,*
*Then **Point_B** = survey start point.*

Features at the extreme point - Survey start point



We will collect :

- A. **Geolocation**
- B. Width within 30ft. Into the alley
- C. Street name closest to extreme point
- D. Apron features

Note: (depending on extreme point category)

Limitations to survey within the alleyway



Safety Parameter



Obstructed alleyway

Note:

Don't enter the alley if any of the team members feel uncomfortable!

Security Protocol within the alleyway

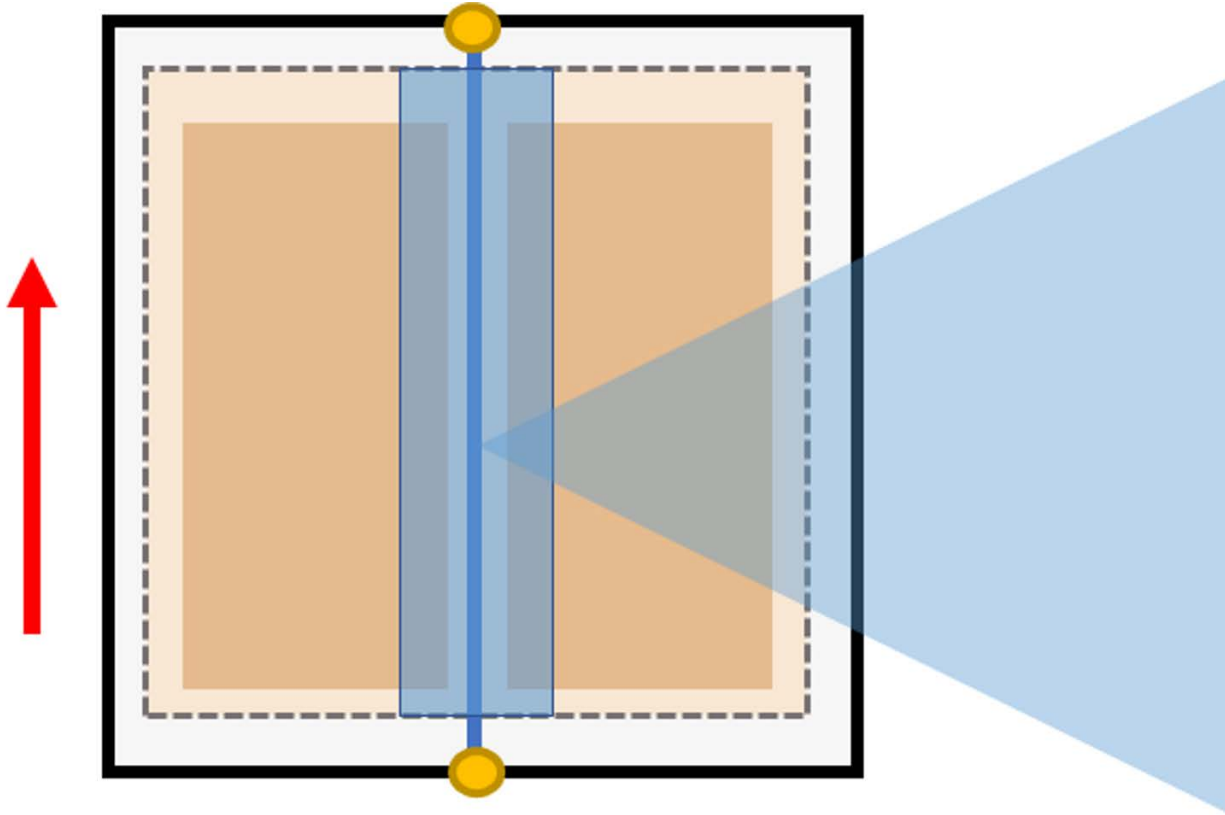
Note:

*If any of the team members feel **uncomfortable at ANY point** while collecting the features within the alley, get out of the alley!*

If able, go to the second access point (i.e. the endpoint of the survey) to finish your data collection (unless the alley ends in a dead end).



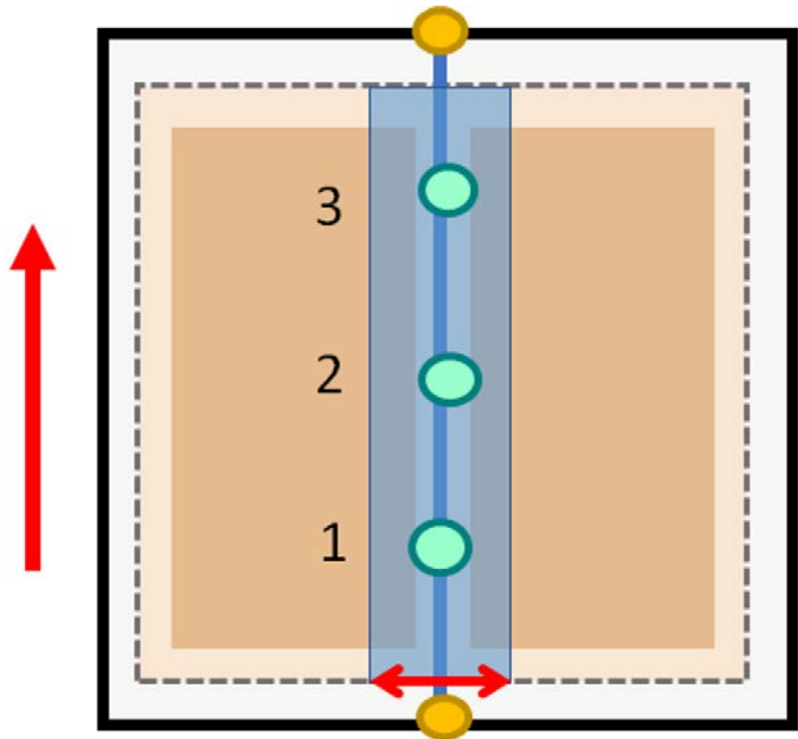
Features within alleyways



We will collect:

- A. Narrower points and sections
- B. Parking facilities
- C. Main entrances to buildings
- D. Driveways
- E. Alleyway Length
- F. Pavement conditions
- G. Count of obstructions
- H. Presence of temporal obstructions

A. Narrower points & sections



W = Width of Extreme Point B



T-Net layer

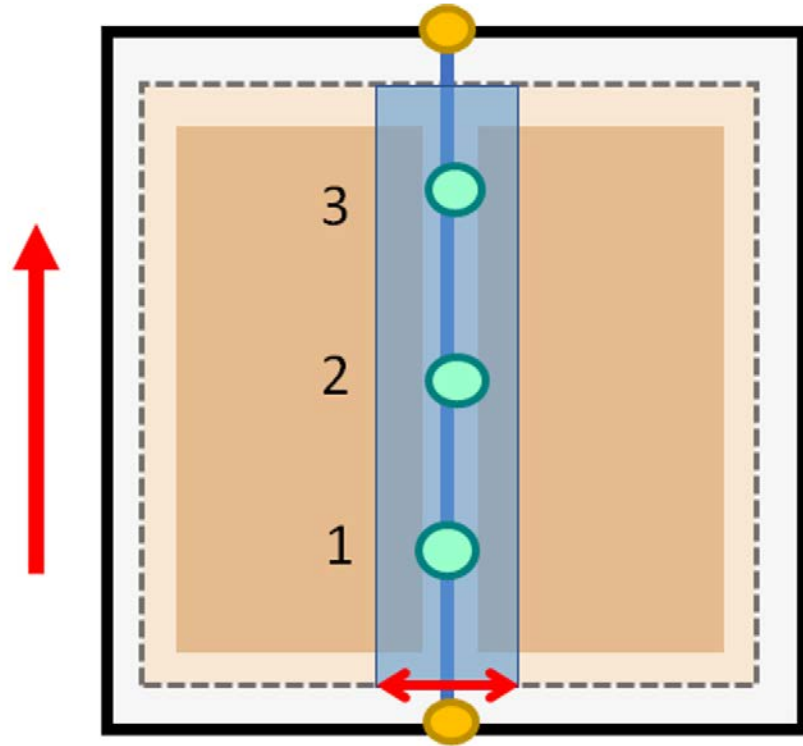
Extreme Point

Before entering

Within Alley

Extreme Point

A. Narrower points - width restriction



W = Width of Extreme Point B

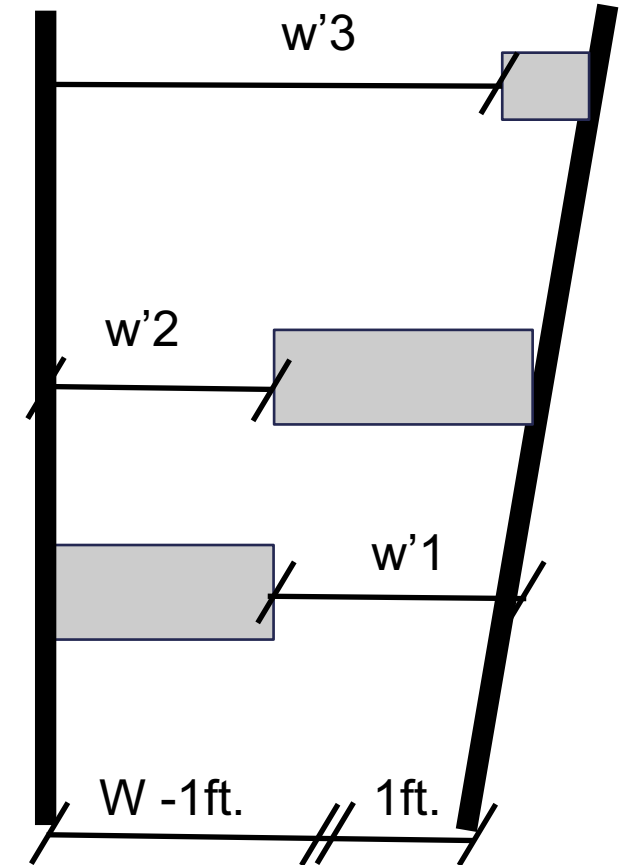
$w'3 > W - 1\text{ft.}$



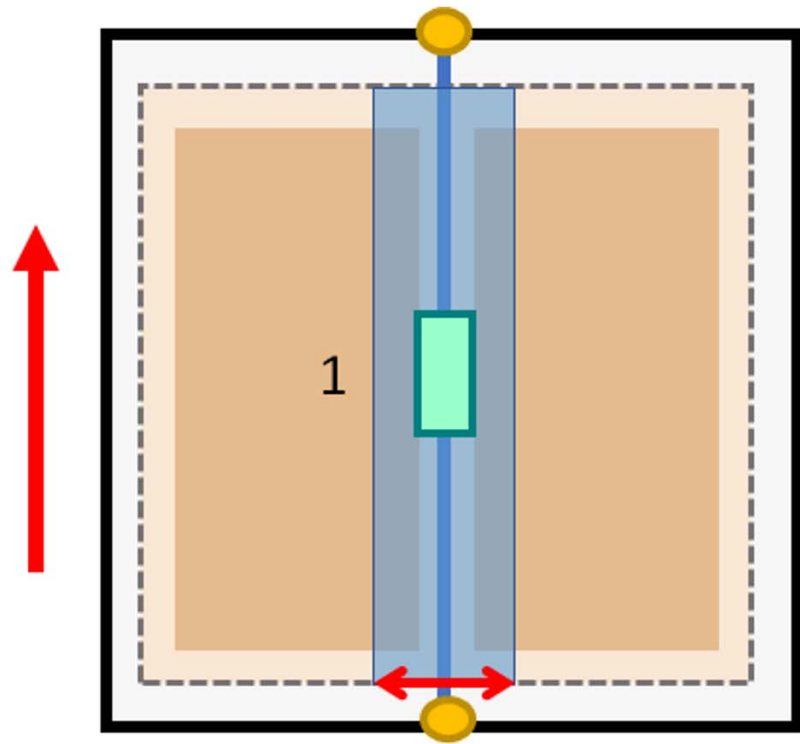
$w'2 < W - 1\text{ft.}$



$w'1 < W - 1\text{ft.}$

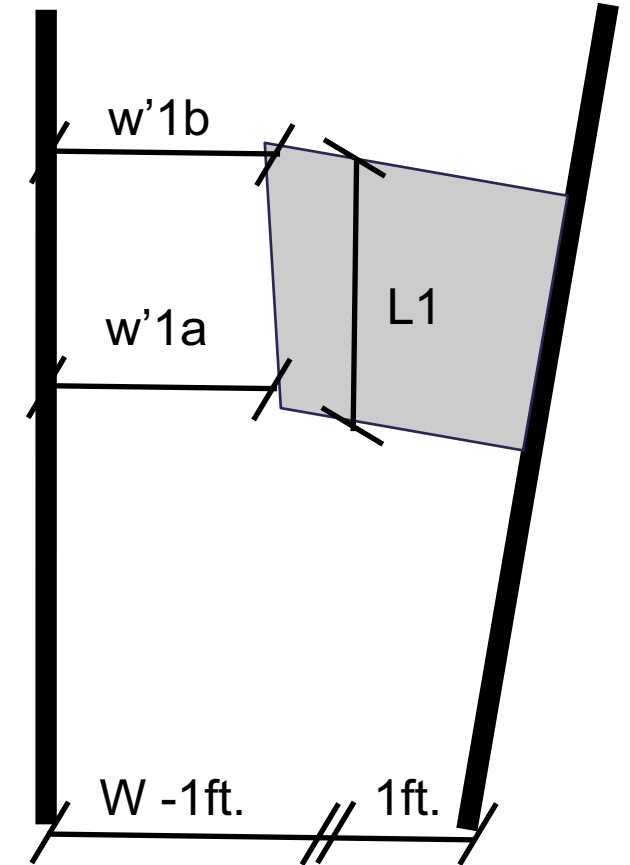


A. Narrower sections - width restriction



W = Width of Extreme Point B

$$w'1a < W-1ft.$$
$$w'1b < W-1ft.$$
$$L1 > 10 ft.$$



A. Narrower points & sections - height restriction

Obstructions that are:

- Width restrictions
- Located within 16ft. from the ground



A. Narrower points & sections - Types (1/2)

Transformer Equip.

ES



Electric Panels



Fire escape



Projecting Lights



T-Net layer

Extreme Point

Before entering

Within Alley

Extreme Point

A. Narrower points & sections - Types (2/2)

Signs



Chutes



Bollards



Parking/ Commercial
Vent intakes or exhaust

T-Net layer

Extreme Point

Before entering

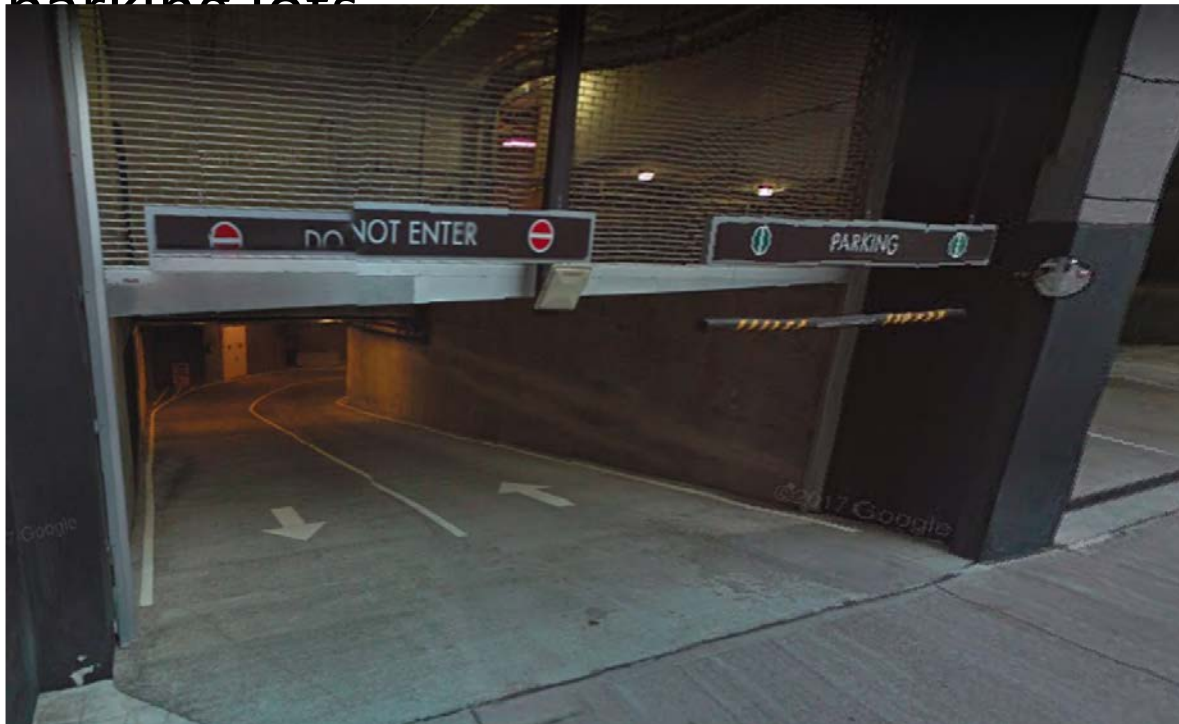
Within Alley

Extreme Point

B. Parking facilities - Types (1/2)

Parking garages
parking lots

Surface



T-Net layer

Extreme Point

Before entering

Within Alley

Extreme Point

B. Parking facilities - Types (2/2): Freight facilities

Outside of building walls

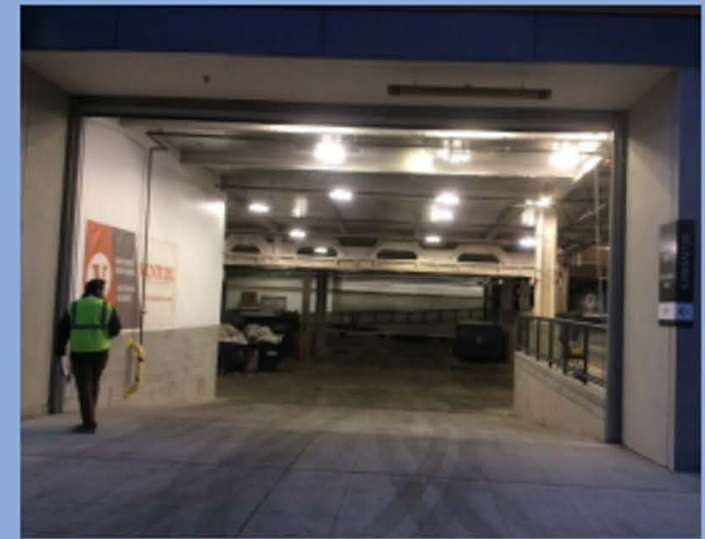


EXTERIOR LOADING DOCK



EXTERIOR LOADING AREA

Interior of exterior wall

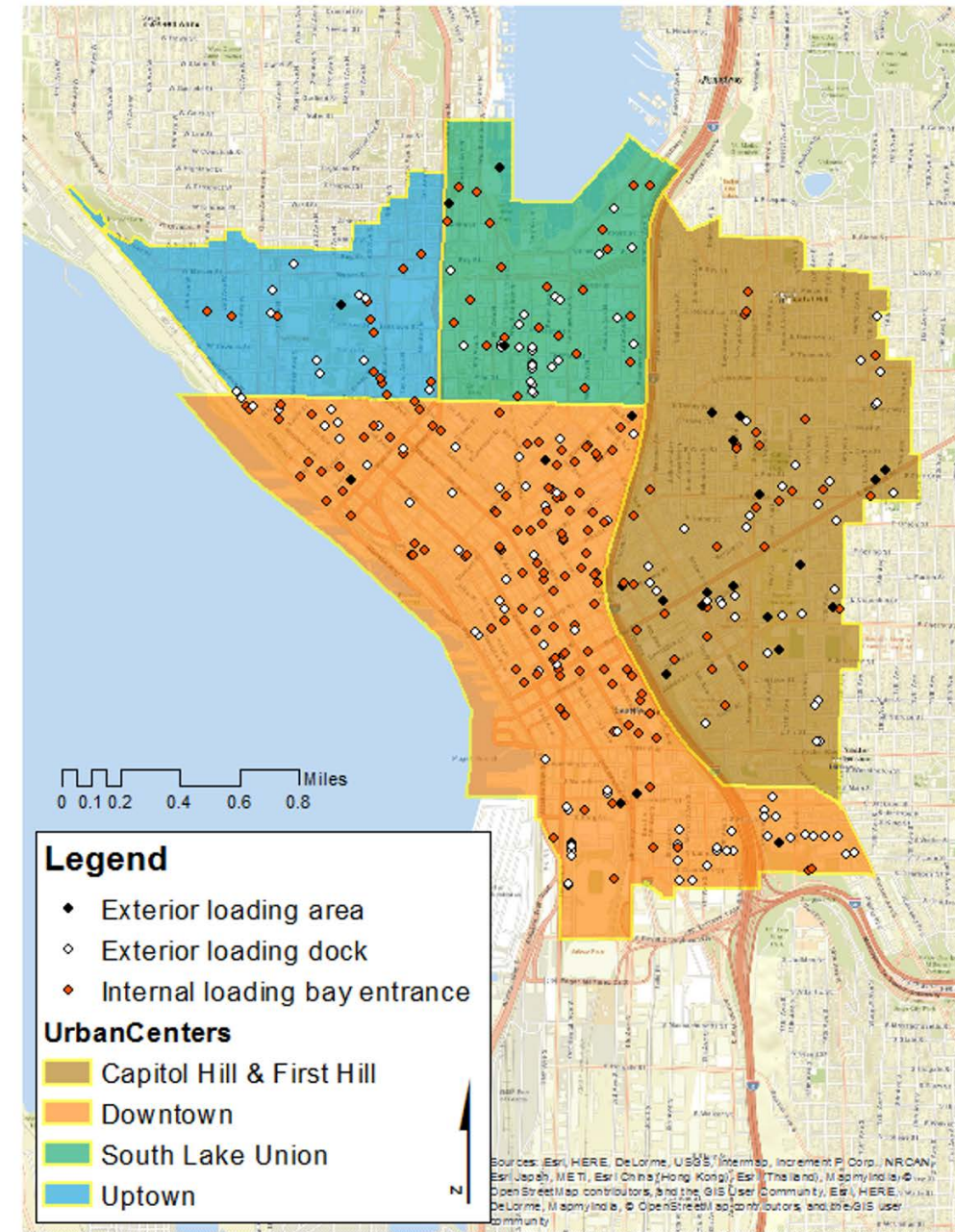


INTERNAL LOADING BAY

B. Parking facilities - Freight facilities

To link both databases, we will use readily available data:

- Location (basemap)
- Facility ID number
- Pictures



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T-Net layer

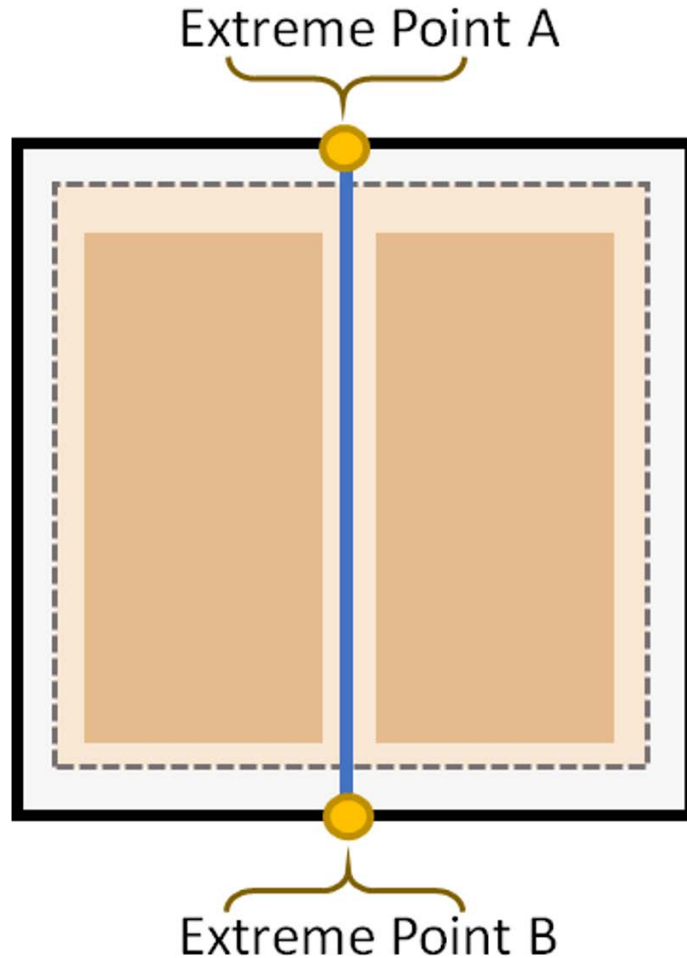
Extreme Point

Before entering

Within Alley

Extreme Point

Data Collection Method: A 5 step survey



Step 1. Checking of King County database

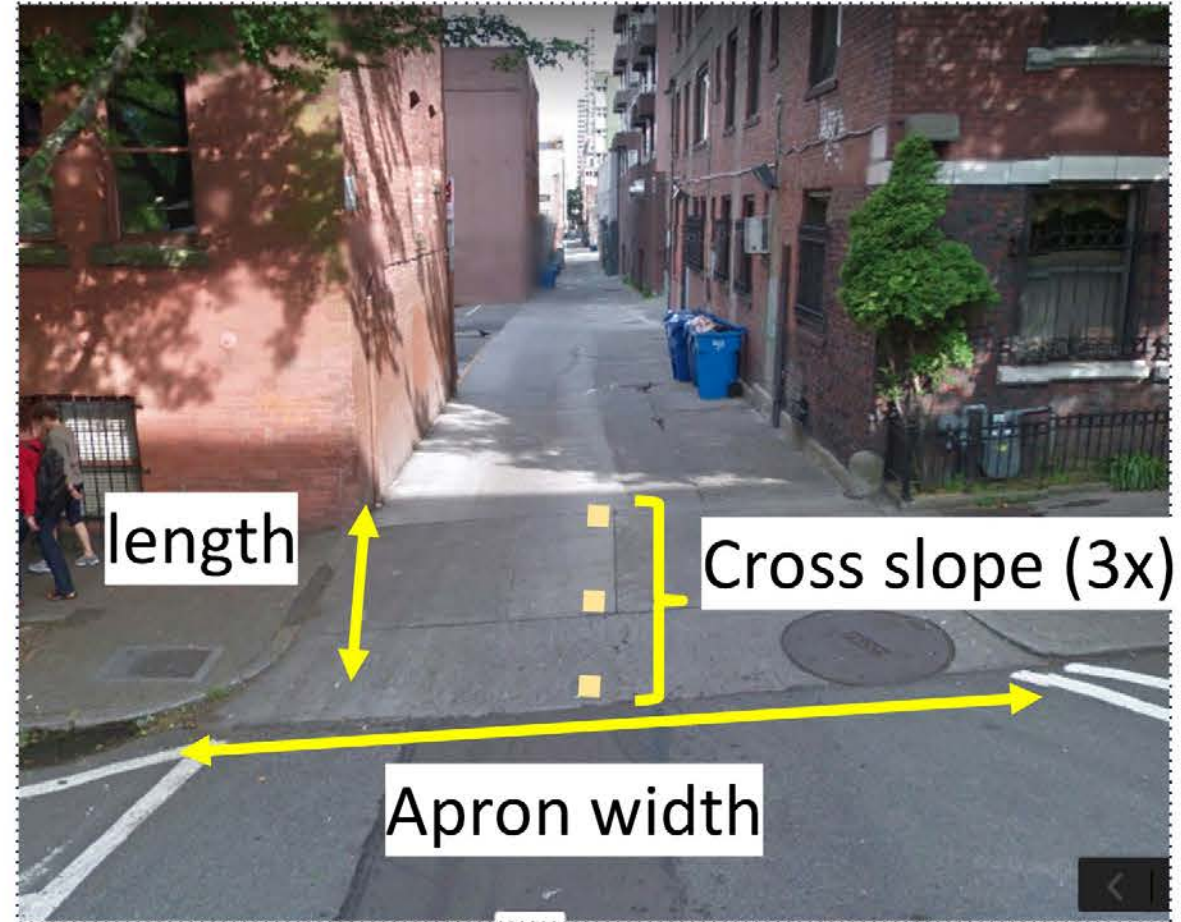
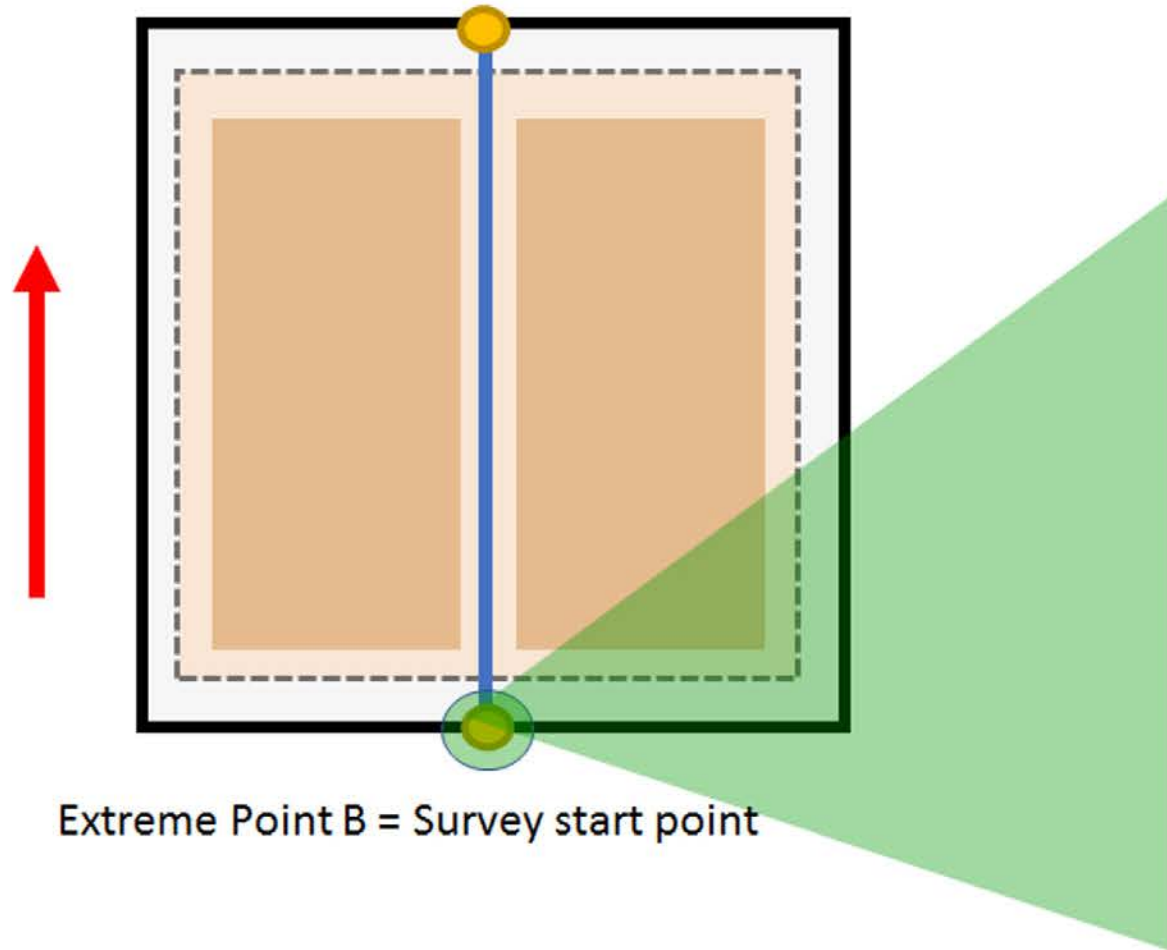
Step 2. Alleyway's "Extreme Point"

Step 3. Before entering the alleyway

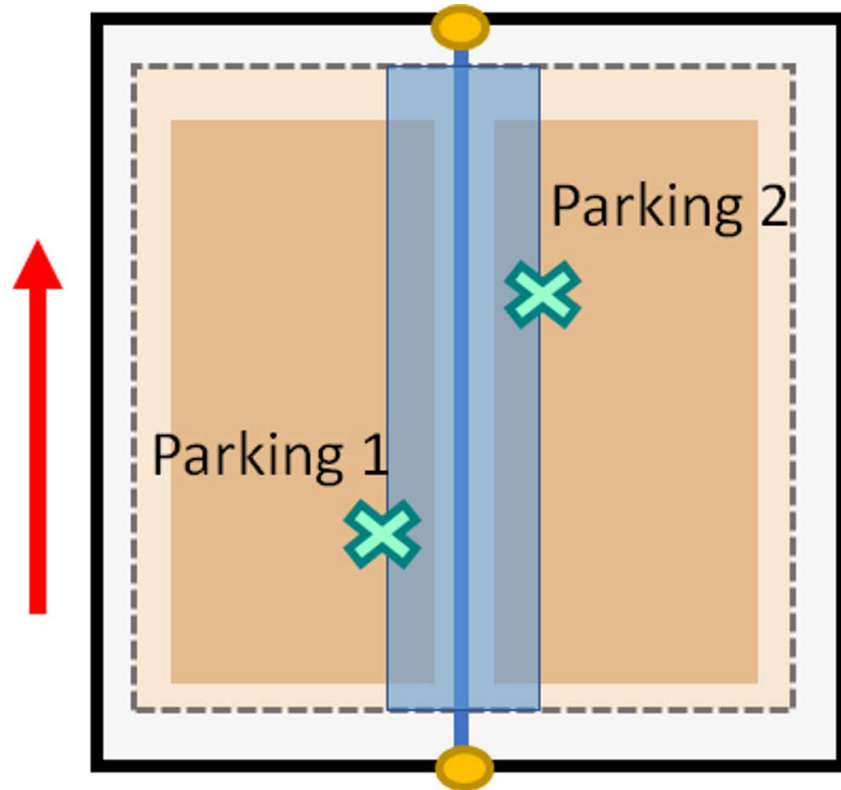
Step 4. Within the alleyway

Step 5. Alleyway's "Extreme Point"

Features at the extreme point - D. Apron



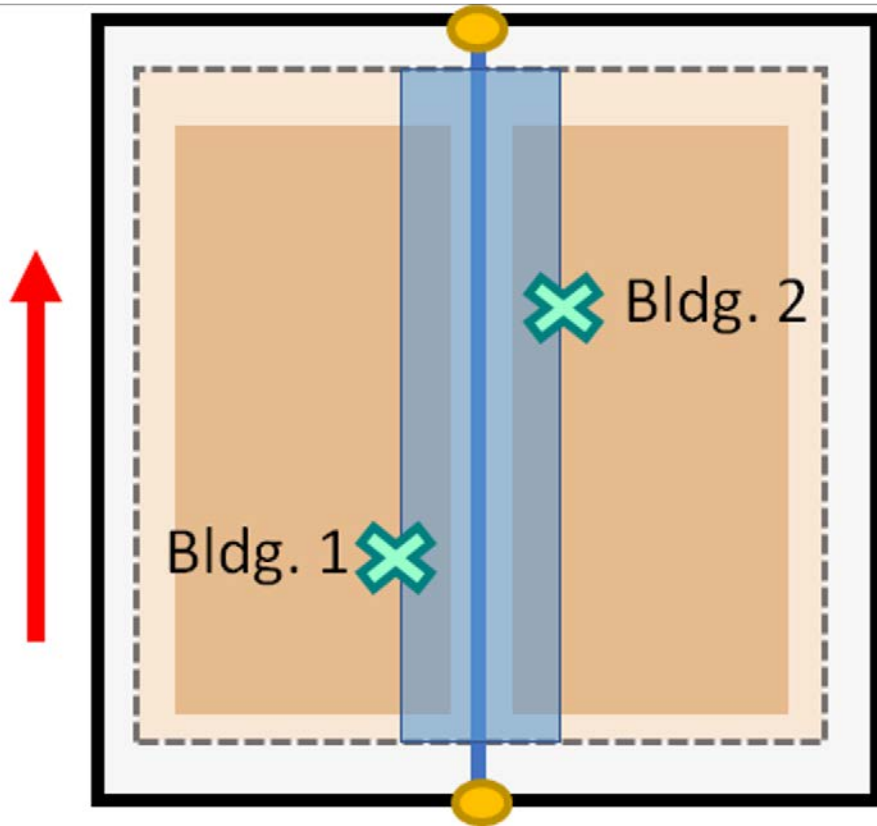
B. Parking facilities



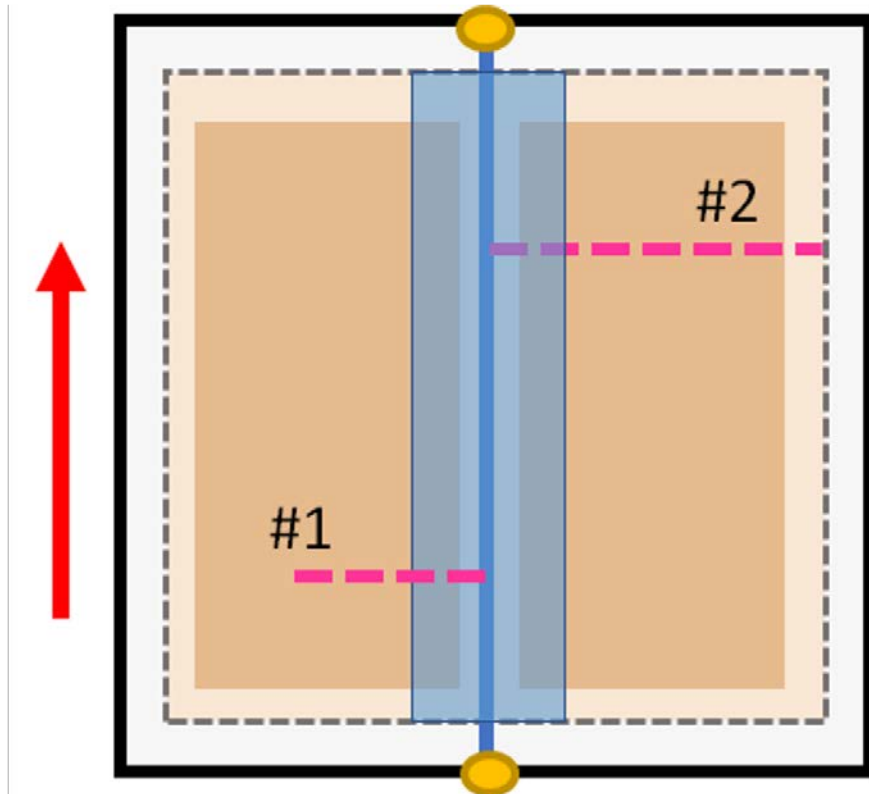
Features to be collected:

- **Geolocation**
- Distance from start of alley
- Pictures

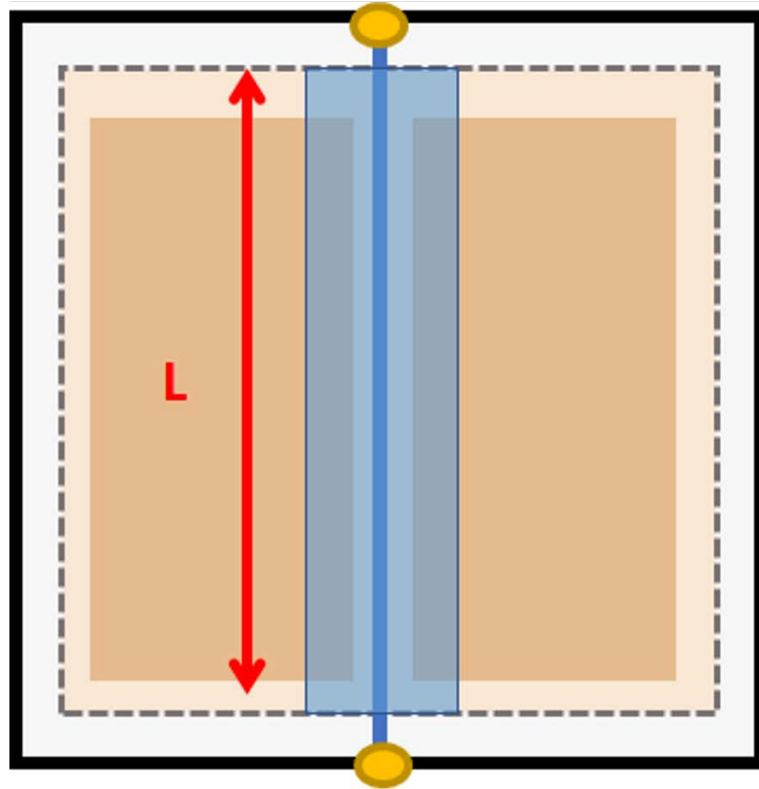
C. Main entrances to buildings



D. Driveways



E. Alleyway Length



L = Alleyway total length

We will measure total length of alleyway with a measuring wheel



F. Pavement Conditions

Pavement in bad conditions shows:

Uplift or

Faulting



Settling

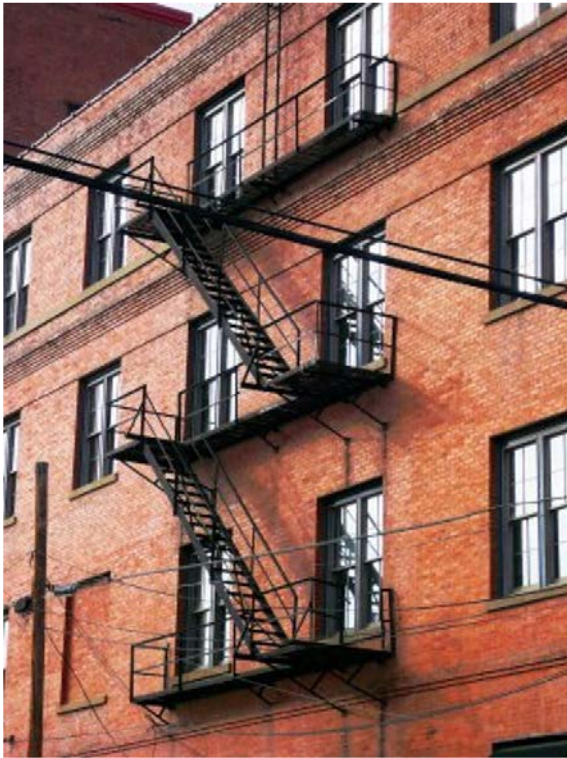


Non-flush

Utility vaults



G. Count of obstructions



Fire escapes



Garbage bins
or cans



Garbage bins
or cans for oil

H. Presence of temporal obstructions



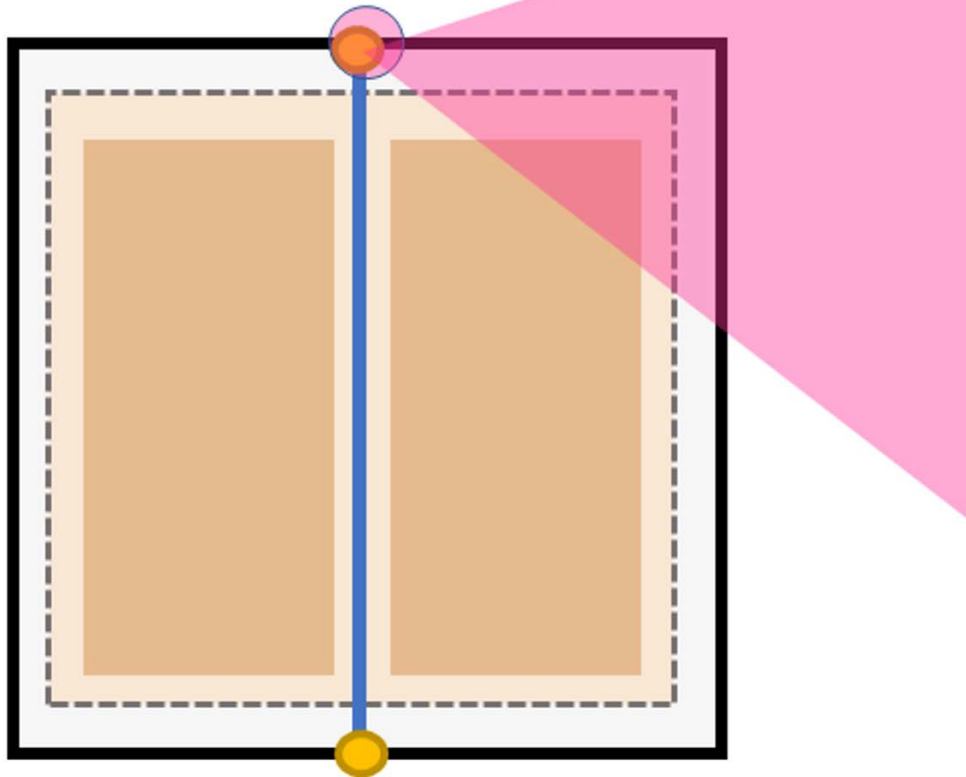
Debris



Street Furniture

Features at the extreme point - Survey endpoint

Extreme Point A = Survey endpoint



We will collect :

- A. **Geolocation**
- B. Width within 30ft. Into the alley
- C. Street name closest to extreme point
- D. Apron features

Note: (depending on extreme point category)

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T-Net layer

Extreme Point

Before entering

Within Alley

Extreme Point

Save the date!

- **Friday, January 5:**

Submit your Winter Quarter availability

- **Before Monday, January 15:**

Attend training session in field, specific time to be defined

Attend training session in data cleaning session in office, specific time to be defined

- **Before appointment of training in-field:**

Self-review the materials of theoretical training session

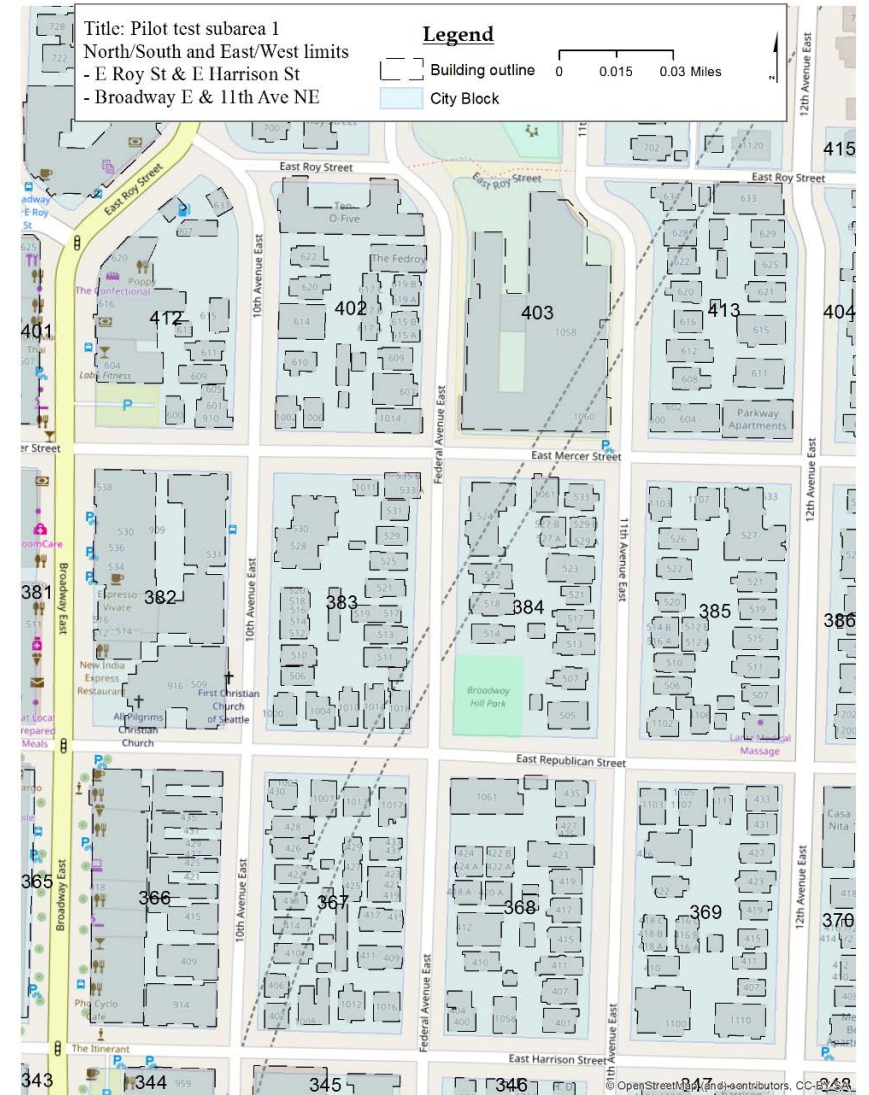
Communication



City Block Round

Data collectors will do a city block round before starting any survey in a new city block. During the round, they will indicate the following information on the hard copy map:

- Access points width
- Access points location



Data Quality Process: In field

Keep track of the surveyed alleyways!

- Thoroughly inspect every city block in the assigned map and do not leave spaces behind where you did not walk
- Progressively fill the map with the alleyways collected in field

Always be aware of your location!

- Orient yourself and be confident about your location before starting a new survey

Be careful collecting the data!

- Correctly collect GPS readings
- Correctly collect the measuring wheel readings
- Collect clear and useful pictures, these are key for quality control.

Note: If you have any questions, refer to training materials or contact us

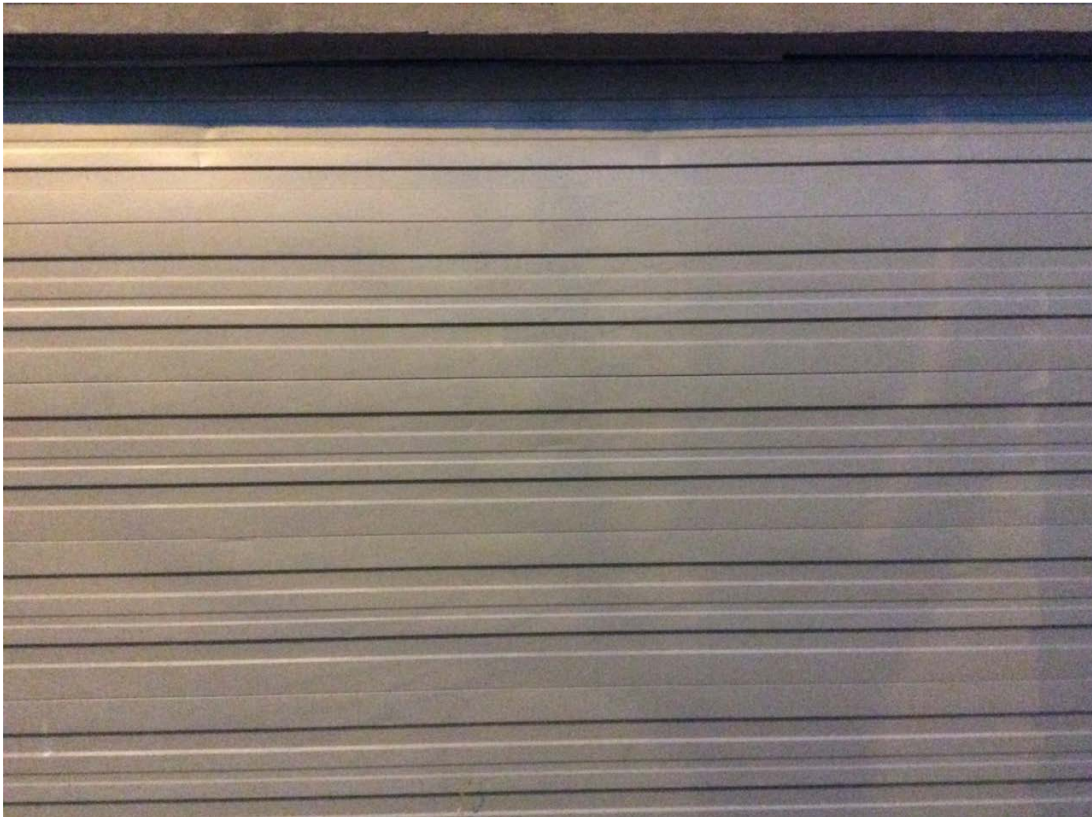
Data Quality Control:

“Don’ts” of taking pictures (Weird angles)



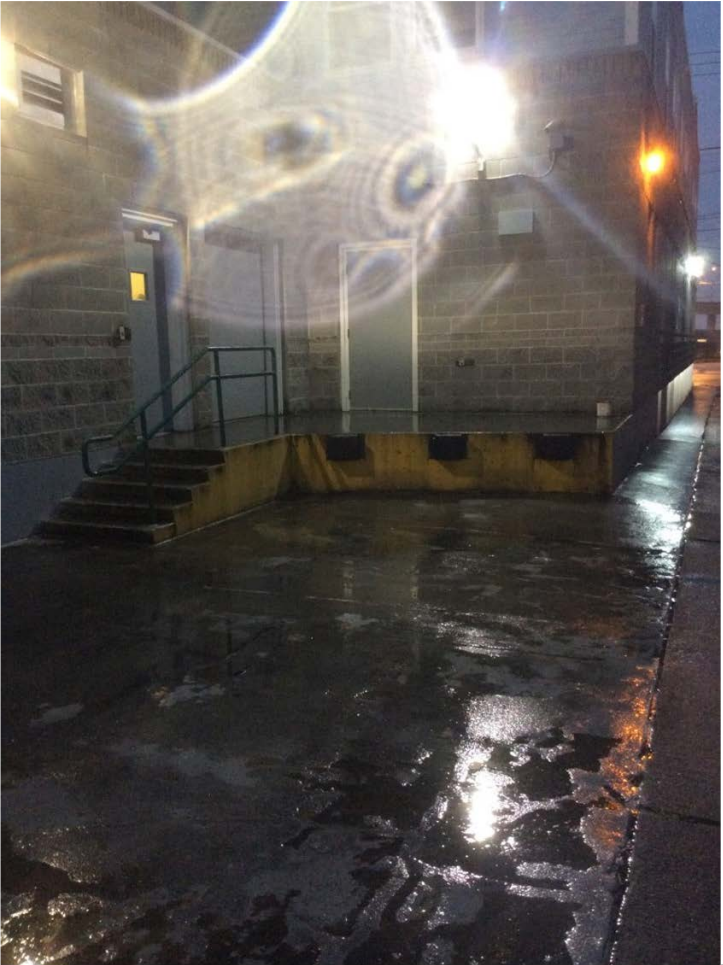
Data Quality Control:

“Don’ts” of taking pictures (No context)



Data Quality Control:

“Don’ts” of taking pictures (Lack of clarity)



Data Quality Control:

“Dos” of taking pictures (enough context)



Data Quality Control:

Dos of taking pictures
(important additional details)



Data Quality Process:

In office

After every data collection shift one member of the team is responsible for the following task:

Task 1 - Review geopoints

- Extreme points
- Loading bays
- Parking facilities

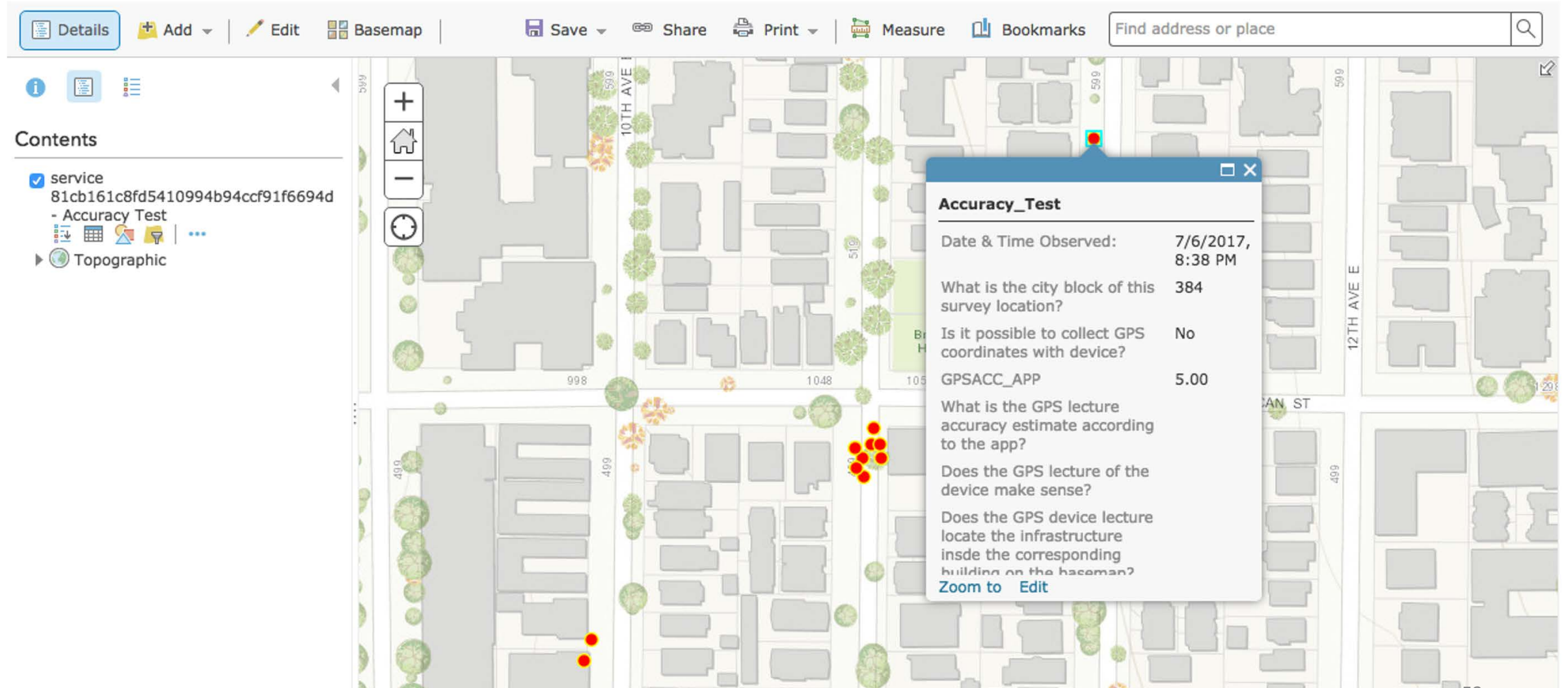
Task B - Review remaining features collected of each survey.

Note: Data collectors will follow a Data quality process manual.

Data Quality Control: Online ESRI platform

Home ▾ My Map

New Map  JOSE ▾



The screenshot displays the ESRI online map interface. At the top, there are navigation and utility buttons: Details, Add, Edit, Basemap, Save, Share, Print, Measure, and Bookmarks. A search bar on the right contains the text "Find address or place". The left sidebar shows the "Contents" panel with a checked "service" layer and a "Topographic" map style. The main map area shows a street grid with several red circular markers. A popup window titled "Accuracy_Test" is open over one of the markers, displaying the following information:

Accuracy_Test	
Date & Time Observed:	7/6/2017, 8:38 PM
What is the city block of this survey location?	384
Is it possible to collect GPS coordinates with device?	No
GPSACC_APP	5.00
What is the GPS lecture accuracy estimate according to the app?	
Does the GPS lecture of the device make sense?	
Does the GPS device lecture locate the infrastructure inside the corresponding building on the basemap?	
Zoom to Edit	