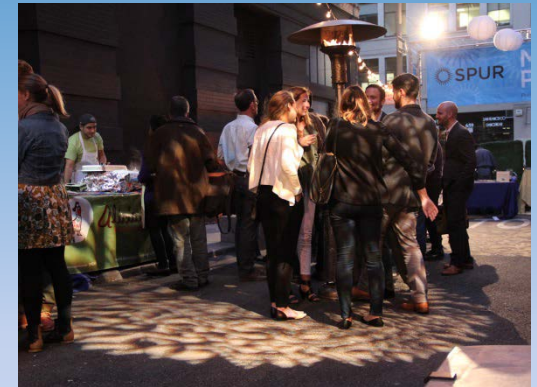


MOBILE DATA COLLECTION: A PRIMER

GENE STROMAN, PUBLIC LIFE INTERN
SF PLANNING DEPARTMENT, SPRING 2015

PRESENTATION SUMMARY

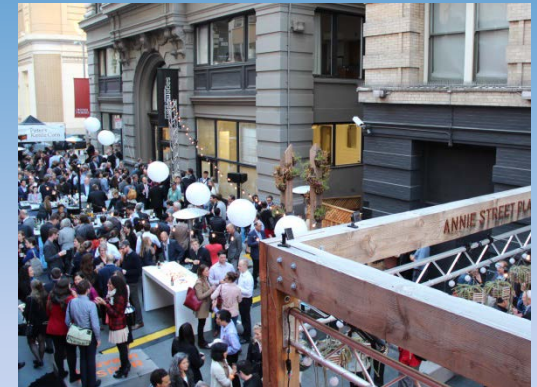
1. Project Overview
2. PLS Workflow Comparison
3. Project Setup
4. Demo



01 PROJECT OVERVIEW

TIMELINE

1. **FOCP GRANT Application:**
August 2014
2. **FOCP Grant Awarded:**
December 2014
3. **Internship Began:**
January 2015
4. **iPads Delivered:**
April 2015



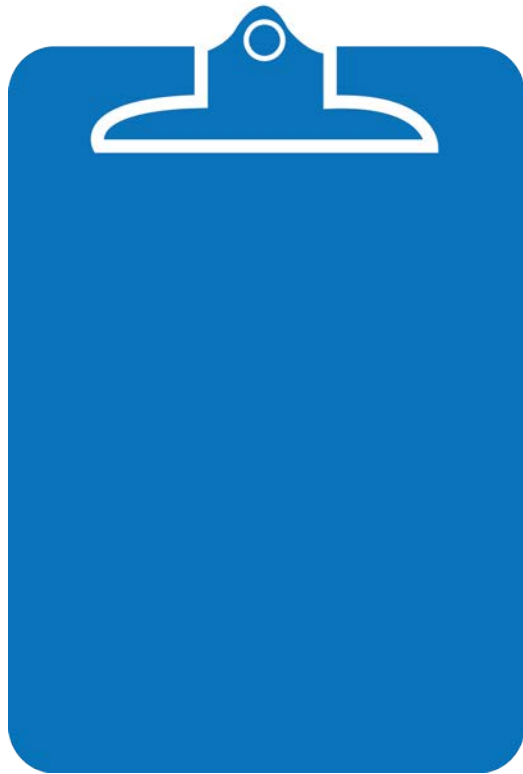


TEAM

- **Robin Abad**
- **Teresa Ojeda**
- **Mike Webster**
- **Mike Wynne**
- **Brian Quinn**



PUBLIC LIFE STUDIES



SCREENLINE COUNTS

MISSION STREET SCREENLINE COUNT

DATE: _____ TIME: _____

LOCATION: _____

SCREENLINE COUNTS

SCREENLINE	MALE	FEMALE	TOTAL
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

SAFARI PLANNING DEPARTMENT

EXISTING CONDITIONS

EXISTING CONDITIONS

DATE: _____ TIME: _____

LOCATION: _____

EXISTING CONDITIONS

SCREENLINE	MALE	FEMALE	TOTAL
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

SAFARI PLANNING DEPARTMENT

ACTIVITY MAPPING

ANNE PLAZA ACTIVITY MAPPING

DATE: _____ TIME: _____

LOCATION: _____

ACTIVITY MAPPING

SAFARI PLANNING DEPARTMENT

ACTIVITY SCANS

MISSION STREET ACTIVITY SCAN

DATE: _____ TIME: _____

LOCATION: _____

ACTIVITY SCANS

SAFARI PLANNING DEPARTMENT

INTERCEPT SURVEYS

PLAZA USER INTERCEPT SURVEY

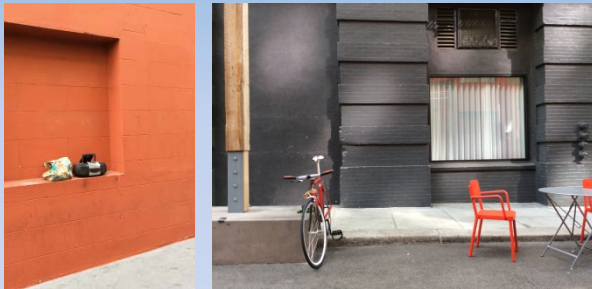
DATE: _____ TIME: _____

LOCATION: _____

INTERCEPT SURVEY

SAFARI PLANNING DEPARTMENT

ACTIVITY MAPPING



- Captures the location, demographics, posture, and activities of the users in given public space
- *Ex: BART Plazas, Parklets, Annie Street Plaza*
- Involves a full team of data collectors
- Many shifts per day
- Often several people collecting at the same time
- Potentially a large number of points in a small area
- Time and date are determining factors of activity levels

ACTIVITY MAPPING

Two activity mapping forms. The left form is titled 'ANNE PLAZA ACTIVITY MAPPING' and the right form is titled 'MISSION ST PLAZA ACTIVITY MAPPING'. Both forms include a map of the plaza area, a table for recording activity data, and a section for notes. The forms are from the 'PLANNING DEPARTMENT'.

ESRI COLLECTOR

COMMON USES:

- Track **Infrastructure Conditions**
- Carry out **Damage Reports**
- File **Service Requests**
- Map **Places of Historical Interest**
- Record **Violations**
- Manage **Land Use / Property Maps**

OUR USE:

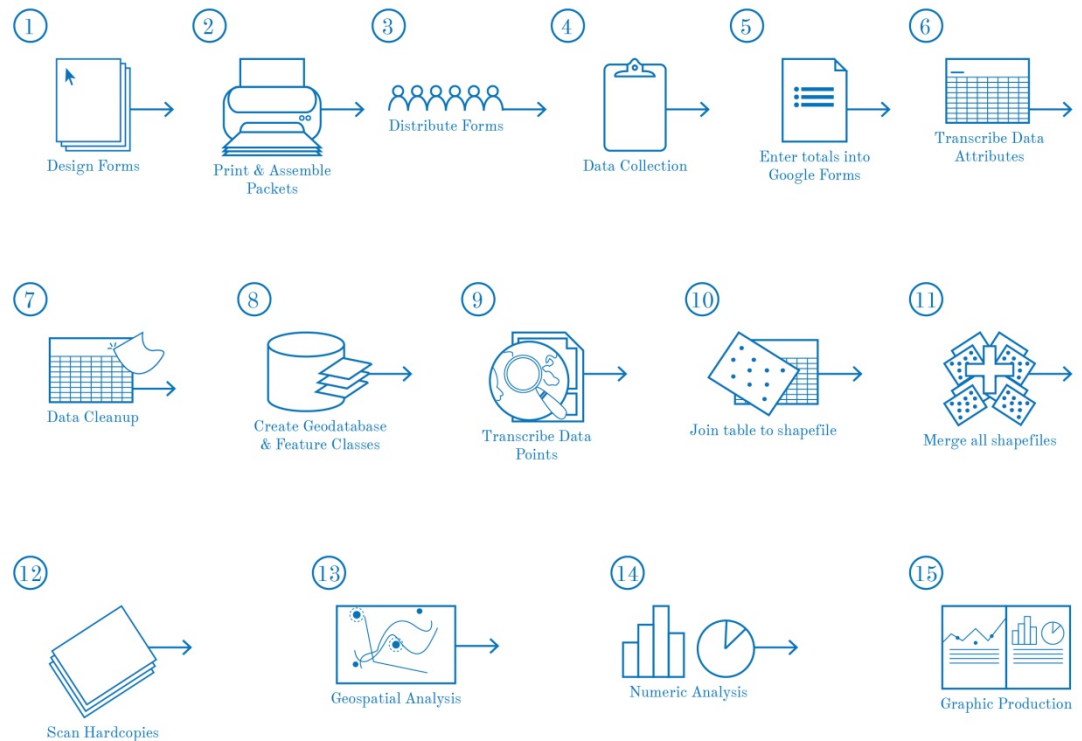
- Activity Mapping



02 PUBLIC LIFE SURVEY WORKFLOW COMPARISON

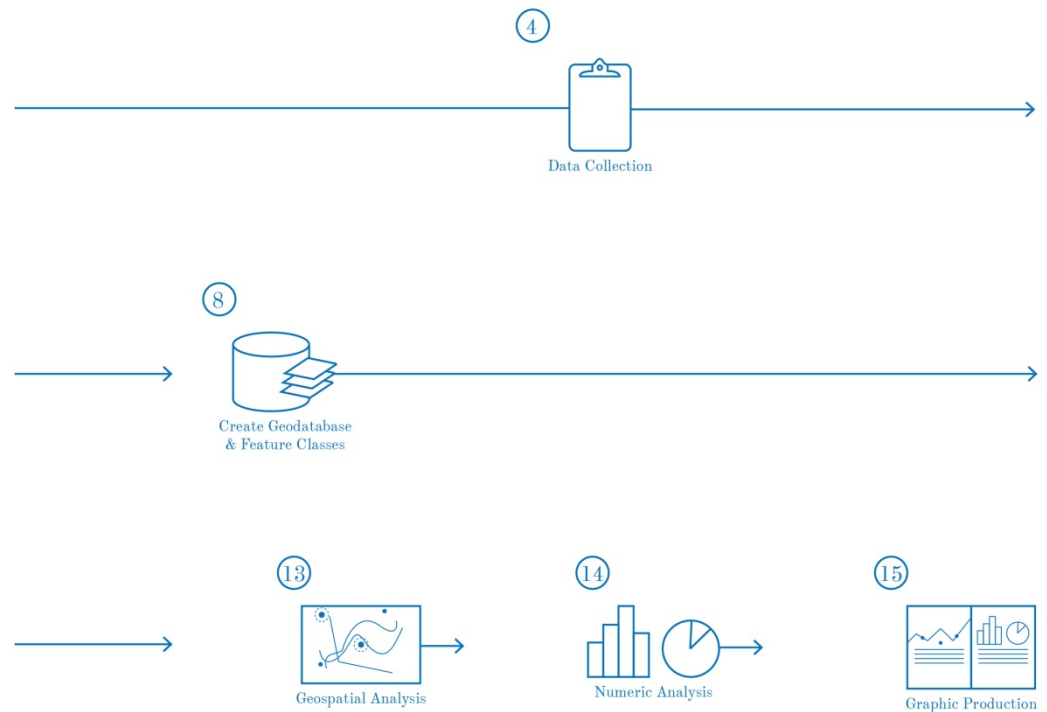
TYPICAL WORKFLOW

1. Create intake matrix / hardcopy forms
2. Print & assemble materials
3. Distribute Materials
4. Observe / collect public life data
5. Enter totals into google form
6. Transcribe rows into excel
7. Data cleanup
8. Create geodatabase
9. Transcribe data points into ArcMap
10. Join tables to shapefile
11. Merge all data
12. Scan all hard copies
13. Run geospatial data analysis on points in ArcMap
14. Run numeric data analysis on tables in excel
15. Production on maps, charts, tables in Adobe Suite



MOBILE DATA WORKFLOW

- ~~1. Create intake matrix / hardcopy forms~~
- ~~2. Print & assemble materials~~
- ~~3. Distribute Materials~~
- 4. Observe / collect public life data**
- ~~5. Enter totals into google form~~
- ~~6. Transcribe rows into excel~~
- ~~7. Data cleanup~~
- 8. Create geodatabase**
- ~~9. Transcribe data points into ArcMap~~
- ~~10. Join tables to shapefile~~
- ~~11. Merge all data~~
- ~~12. Scan all hard copies~~
- 13. Run geospatial data analysis on points in ArcMap**
- 14. Run numeric data analysis on tables in excel**
- 15. Production on maps, charts, tables in Adobe Suite**



MOBILE DATA WORKFLOW

1. Create geodatabase
2. Create data collection map
3. Upload Resources and set properties
4. Observe / collect public life data
5. Upload data points
6. Access data points on computer
7. Run geospatial data analysis on points in ArcMap
8. Run numeric data analysis on tables in excel
9. Production on maps, charts, tables in Adobe Suite





MOBILE DATA COLLECTION

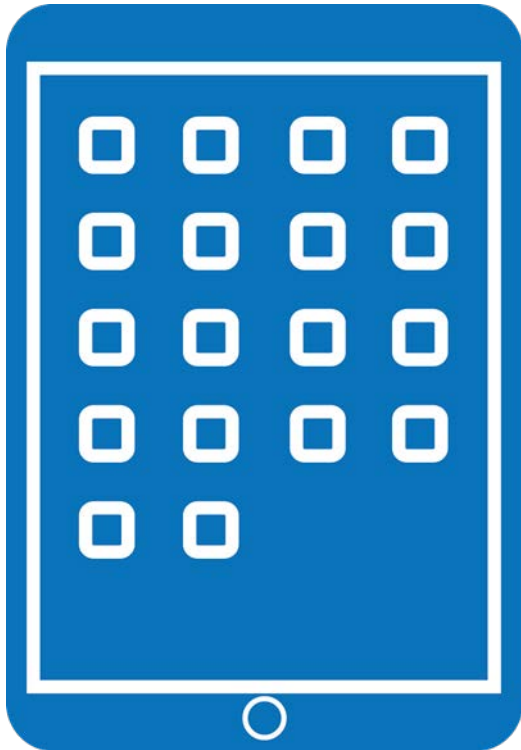
IN SUM ...

- ✓ Fewer steps
- ✓ Cuts out the most time-consuming steps

MORE TIME FOR THE FUN STUFF:

- ✓ Qualitative analysis in Excel
- ✓ Spatial analysis in ArcMap
- ✓ Production on maps, charts, tables in Adobe Suite

MDC PROS & CONS



PROS

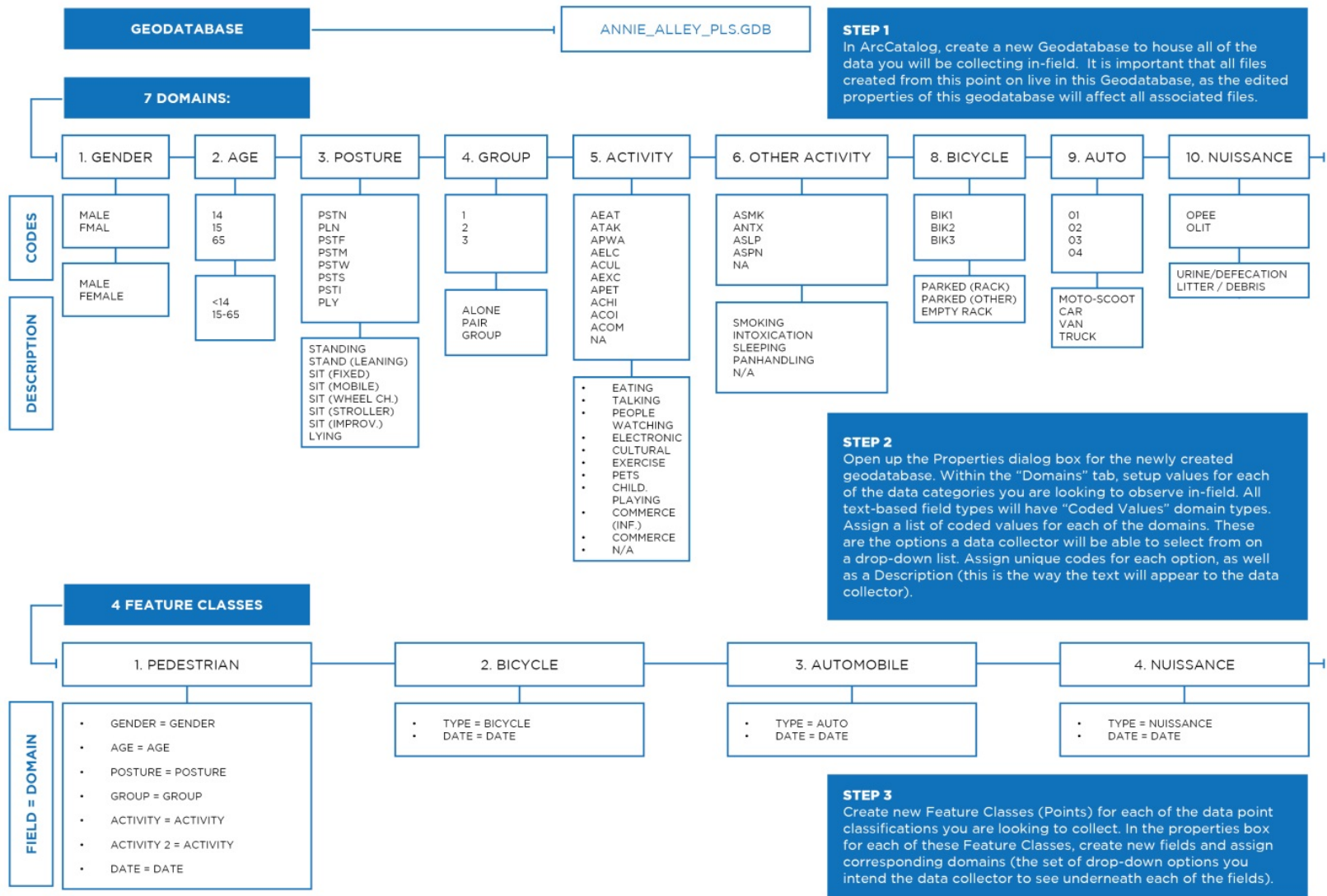
- No more clipboard!
- Online / Offline
- Seamless data processing
- Efficiency

CONS

- Cost of tablet & MyFi
- In-field risk

03 PROJECT SETUP

01 GEODATABASE SETUP



02 MAP SERVICE SETUP

STEP 1

Two different map services must be set up in ArcMap. For each service, bring in the relevant layers using the "add data" tool: **Service 1** is made up of the feature classes setup in geodatabase setup. These are the data points that a user will be collecting in-field.

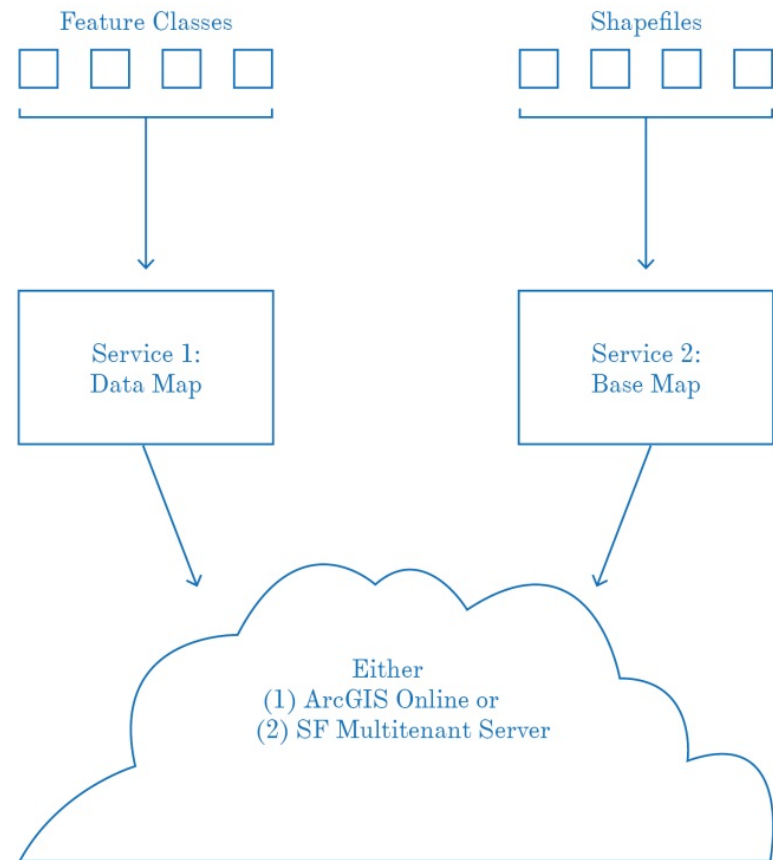
Service 2 is made up of a series of shapefiles that will serve as a basemap, helping to contextualize a user's surroundings.

STEP 2

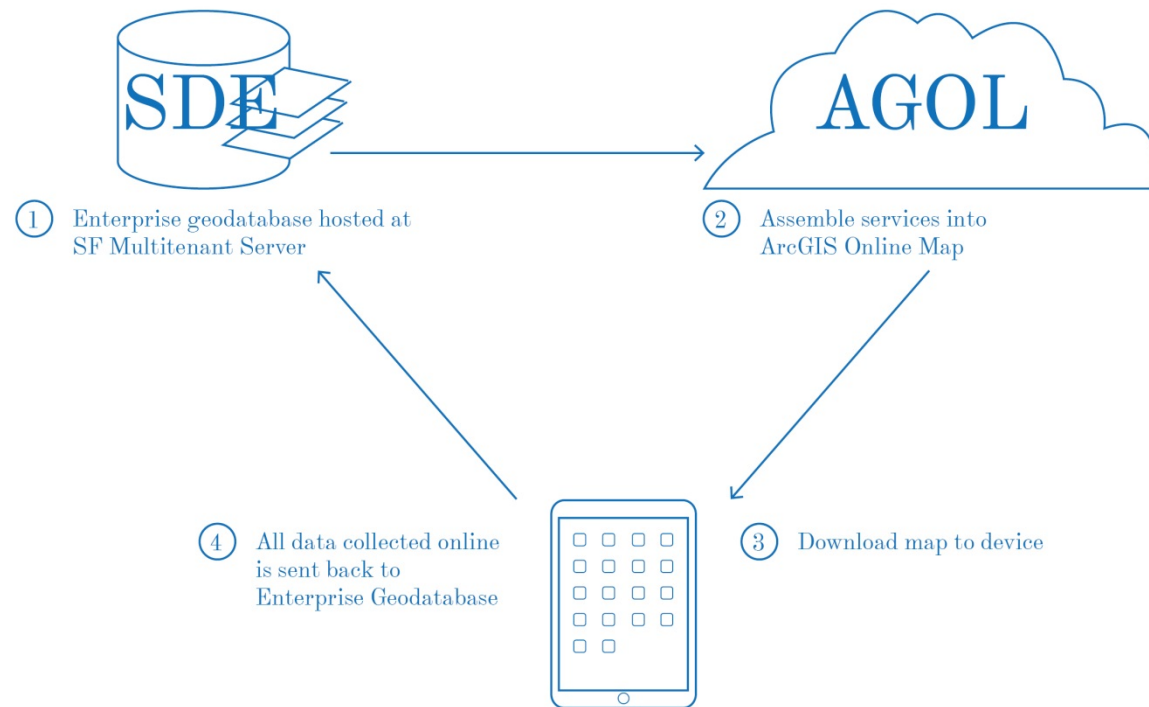
Once you have set up both services in two separate .mxd documents, publish the service to a server via ArcMap.

STEP 3

After both services have been hosted on a server, set service properties and combine services into an ArcGIS Online Map document.



03 BACKEND SETUP





MOBILE DEVICE SETUP

ONLINE

PROS

- Automatic syncing
- Unlimited zooming
- More accurate geolocation
- Automated editor tracking

CONS

- Requires live cellular data or Wi-Fi connection

OFFLINE

PROS

- Collect data without internet connection

CONS

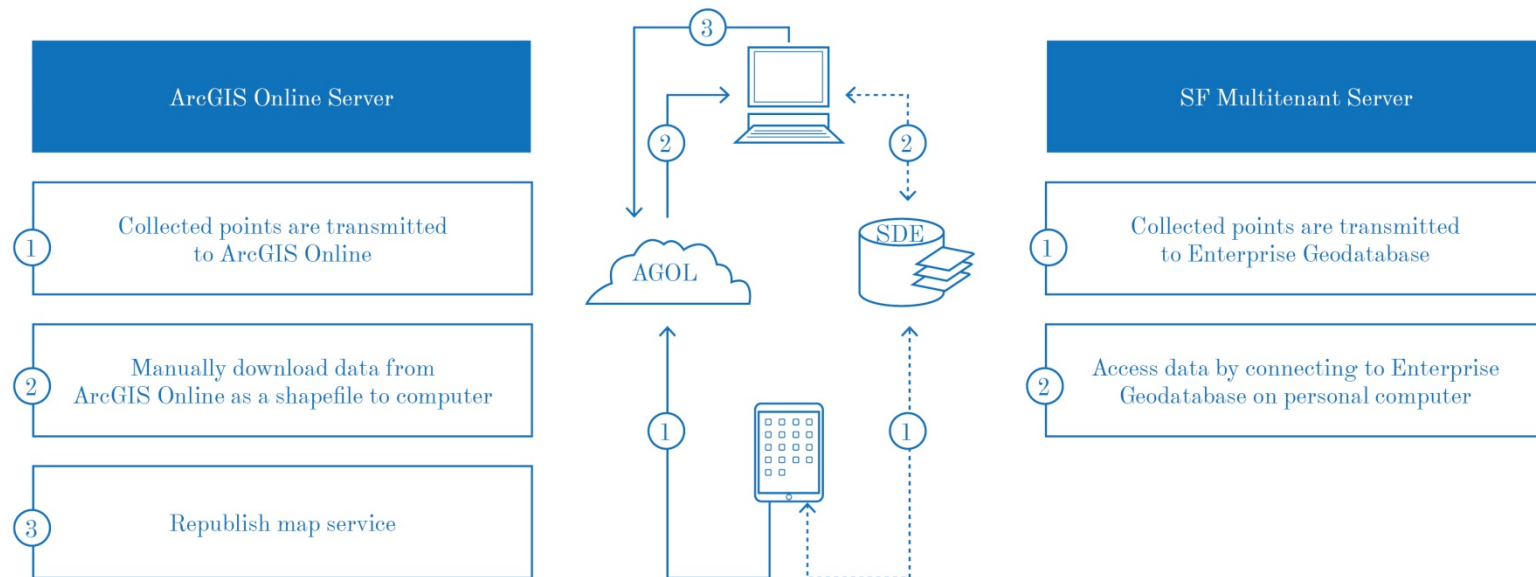
- Manual sync with internet connection
- Limited to Esri map templates
- Unreliable
- Manual editor tracking

04 DEMO

DATA COLLECTION

[Esri Collector Demo]

05 POST-COLLECTION WORKFLOW



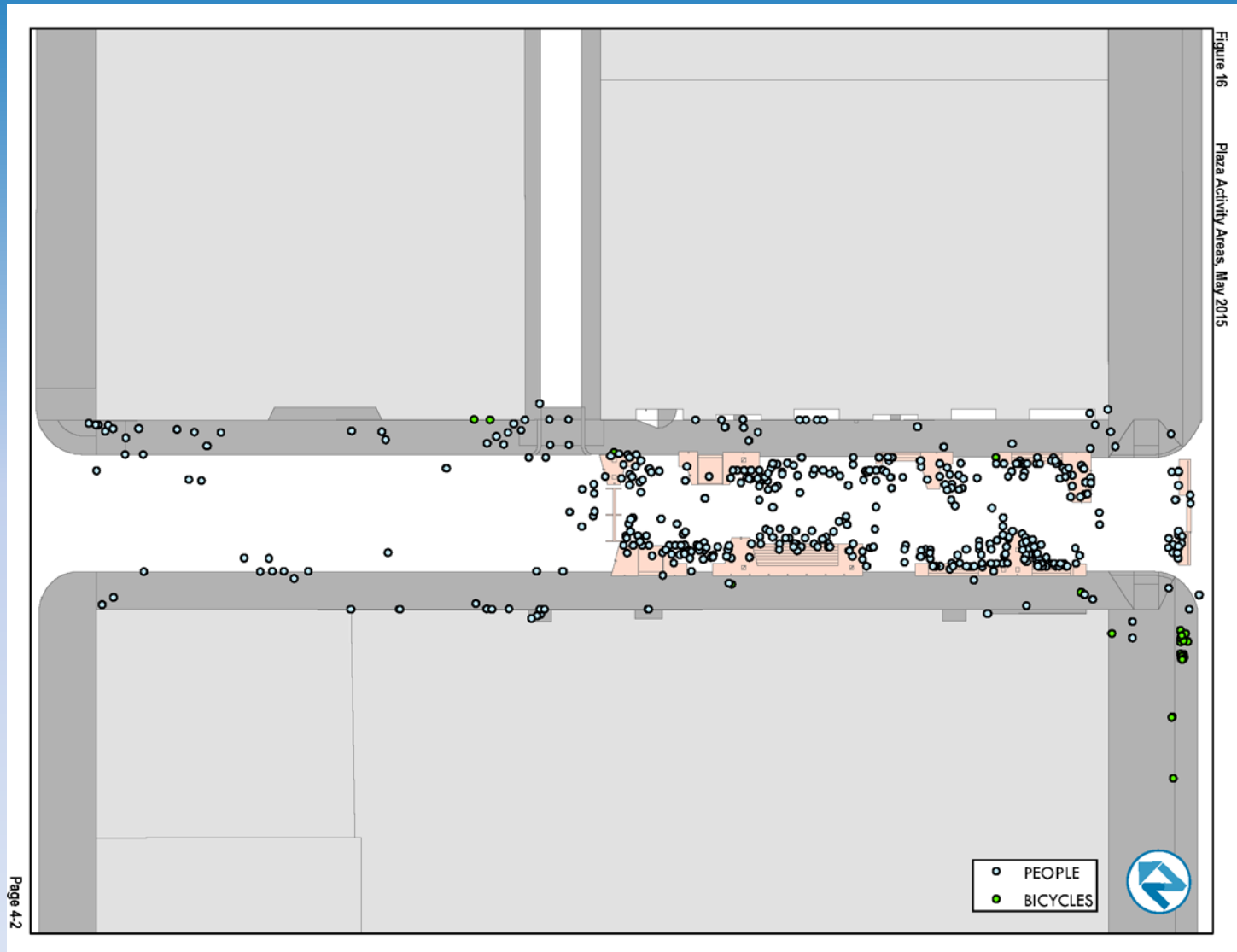


Image courtesy of Nelson Nygaard, "ANNIE STREET PLAZA CIRCULATION STUDY AND PUBLIC LIFE SURVEY". June 2015.

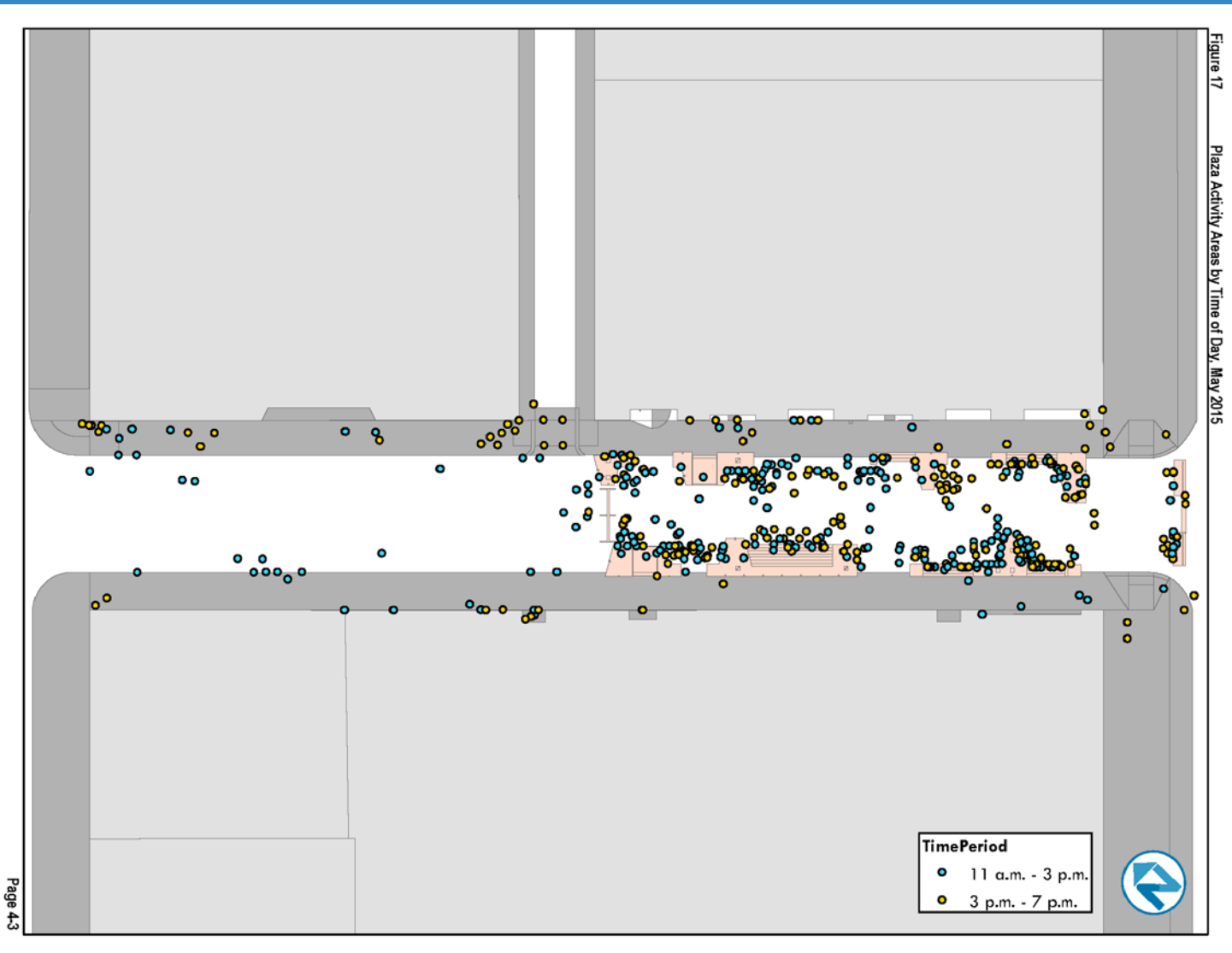


Image courtesy of Nelson Nygaard, "ANNIE STREET PLAZA CIRCULATION STUDY AND PUBLIC LIFE SURVEY". June 2015.

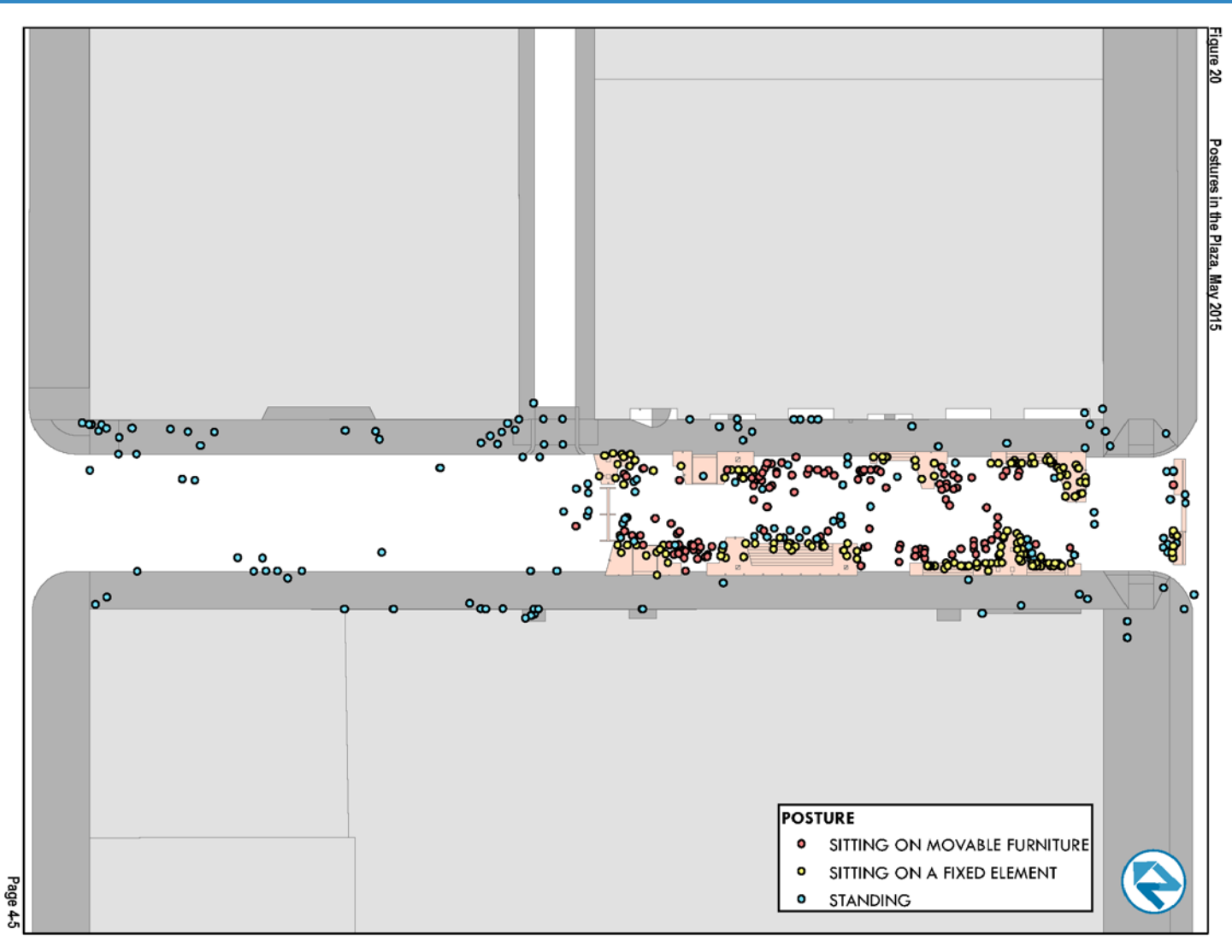


Image courtesy of Nelson Nygaard, "ANNIE STREET PLAZA CIRCULATION STUDY AND PUBLIC LIFE SURVEY". June 2015.

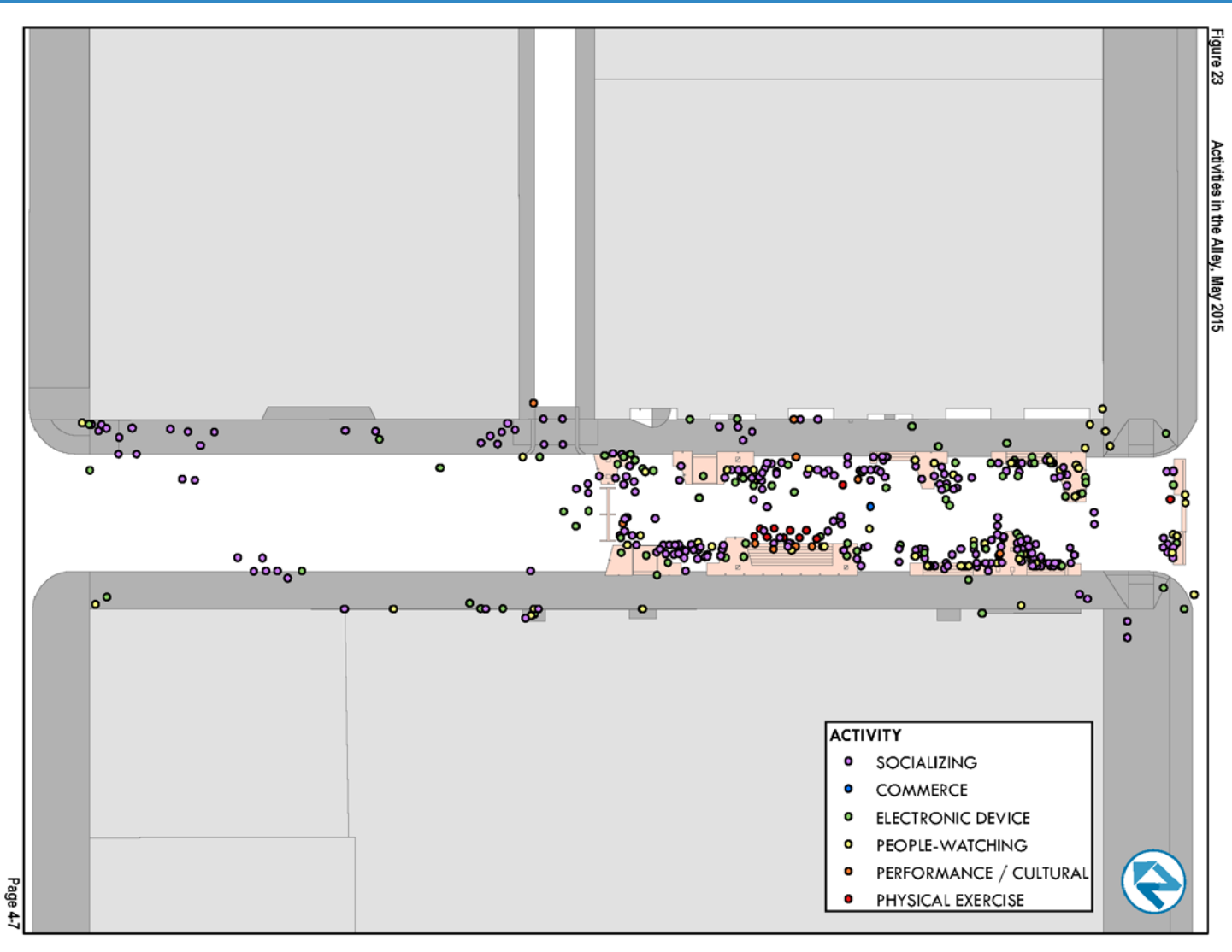


Image courtesy of Nelson Nygaard, "ANNIE STREET PLAZA CIRCULATION STUDY AND PUBLIC LIFE SURVEY". June 2015.

CONCLUSION

LESSONS LEARNED:

- BETA Testing
- Photos as Attachments
- Offline Collection
- Public Life



CONCLUSION

FURTHER RESEARCH:

- Offline Functionality
- Related Tables



CONCLUSION



POTENTIAL APPLICATIONS:

- Activity Mapping Plazas
- Urban Forest Inventory
- Living Alley Existing Conditions
- IIN Business Surveys
- Façade & Sidewalk Existing Conditions





THANKS!

- ✓ QUESTIONS?
- ✓ COMMENTS?
- ✓ APPLICATIONS?