GIS Supporting Data Driven Homelessness Solutions

Shelley McKittrick – Homelessness Program Director
Ryan Witsell – GIS Specialist
Bill Keever – GIS Manager
City of Aurora, Colorado
Community Profile
Bill Keever
City of Aurora, Colorado Profile

- Population: 375,000 (3rd in Colorado, 54th in USA)
- Area: 158 Square Miles
- Household median income: $55,303 (2016)
- Zillow median home value: $318,300 (2018 Q1)
- Zillow median home rent: $1,850 (2018 Q1)
- Owner-occupied housing unit rate: 57.1%
- Persons in poverty: 14.7%
- Foreign born persons: 19.5%
- Black or African American alone, percent: 15.9%
- Hispanic or Latino, percent: 28.5%
- White alone, percent: 61.8%
Aurora, Colorado Regional Context

- Of metro Denver population: 12%
- Urban, Suburban – 100 square miles
- Exurban, Rural – 58 square miles
- Located in three counties:
  - Adams County
  - Arapahoe County
  - Douglas County
- Proximity to:
  - Downtown Denver
  - Denver Tech Center
  - Denver International Airport
Homelessness Program at Aurora
Shelley McKittrick
Homelessness Program at the City of Aurora

• Started in 2016 with funding from sales tax generated from recreational marijuana

• Comprehensive Regional Approach
  - Folks experiencing homelessness are not bound by our municipal and county boundaries
  - The economics and policies that impact homelessness happen in a regional context
  - Evidence-based solutions to homelessness require local efforts that are coordinated regionally with innovation often happening at the municipal or county level and then scaled regionally

• Metro Denver Homeless Initiative
  - HUD defined regions throughout the nation are Continuums of Care (CoCs)
Homelessness Program at the City of Aurora

- Services / resources jump started with new program
  - Coordination with a new Director position and AmeriCorps VISTA volunteers
  - Aurora Day Resource Center
  - Flexible Housing Fund: ReHousing and Eviction Prevention services
  - Outreach efforts
  - Point In Time Count organization and coordination
Point In Time (PIT) Count Basics

• What is it?
  US Dept. of Housing and Urban Development (HUD)
  Mandatory nationwide event - a snapshot of how many people are currently homeless
  - To understand the dimensions of the problem of homelessness and track progress
  - Sheltered Count
  - Unsheltered Count (non-disruptive vs full interviews)
  - Newly vs. Chronically homeless
  - Families with dependents vs. those without dependents

• When?
  - Conducted the last week in January over a 24hr period (blitz count) in metro Denver
  - Where they spent the night of Monday, January 29, 2018?
  - Some staff pulled all night-ers
Point In Time (PIT) Count Basics

• Where does the data go?
  - HUD
  - What systems? Homeless Management Information System (HMIS)
    - Local problems with legacy software
    - Cost of implementing new system
    - Data/System integration issues

• How is data the used?
  - Congressionally-mandated Annual Homeless Assessment Report to Congress (AHAR)
  - Inform policymakers and program administrators about progress and trends
  - Understood to be an undercount as it is a snapshot of one night
  - Difficult to compare year over year as methodologies change and improve (hopefully!)
Point In Time (PIT) Count Basics

• What other functions does the data support?

  - Inform public opinion
  - Increase public awareness
  - Attract resources
  - Develop data based approach, above anecdotal

• And let’s not forget that the PIT Count also allows us to connect with folks we don’t already know

  - Opportunity to steer individuals to available and appropriate services
Point In Time (PIT) Count Basics

- How was this done in the past?
  - Paper forms
    - hand writing difficult to decipher
    - “deduplication data points” left incomplete
    - location data often lost
  - Time and cost required for digital data entry and tabulation after event
  - Turnaround time 7 to 8 months metro-wide
Point In Time (PIT) Count Basics – Difficult mission to collect data

Let’s take a look at the metro Denver long form from 2017.
<table>
<thead>
<tr>
<th>Name of Child</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
<th>Disability</th>
<th>Mental Health</th>
<th>Alcohol/Drug Abuse</th>
<th>Domestic Violence</th>
<th>Health Problem</th>
<th>Other Health Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Doe</td>
<td>10</td>
<td>Male</td>
<td>White</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Jane Smith</td>
<td>12</td>
<td>Female</td>
<td>Black</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Refusal/Observation Section**

- **Reason for Refusal/Observation**
  - Unable to enter site
  - Do not wish to disturb people sleeping
  - Language barrier
  - Other:

- **Location of the Individual spending the night of January 30th**
  - Emergency Shelter
  - Domestic Violence Shelter
  - Other:

- **Does this person have family members with them?**
  - No
  - Yes, Children
  - Yes, Adults

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**Additional Notes:**

- **Referral or Observation:**
  - Observation

- **Reason:**
  - Unable to enter site
  - Do not wish to disturb people sleeping
  - Language barrier
  - Other:
January 2017 Point In Time Count in Aurora, Colorado

- Request for paper maps for the PIT led to:

- An Idea… let’s use Survey123
  - Quickly created a PIT Survey123 and Web AppBuilder applications

  - Utilized for Aurora, Colorado count, discussed with MDHI for approval of observational count

- 40 Volunteers…
  - Social services providers, people experiencing homelessness, city council members, police officers, parks and recreation workers, and students, faculty from the University of Colorado

- Used their personal cell phones with…
  - Survey123 application & Web AppBuilder web map
  - Employed a non-disruptive enumerative count
  - Utilized data from paper surveys of those who were sheltered because of the PIT to apply to total observational count
January 2017 Point In Time Count in Aurora

- Web designer format – easy to build but less customization ability
- Data standardization
- Actual locations
- Sleek, easy to use design
- Data post processing after the event was possible
January 2017 Point In Time Count in Aurora, Colorado

- Immediate report output
- Location insights tangible during event
- Double counting reduced with visual dispatching on web map
January 2017 Point In Time Count in Aurora, Colorado

- Web AppBuilder web map
- Provided live dispatch & monitoring
- Zone assignment & coverage coordination
January 2017 Point In Time Count in Aurora, Colorado

- Post event media coverage ensued with articles from:
  - GovTech
  - 21CenturyState
  - StateScoop
  - ArcNews
  - CityLab

- A real appetite for solutions in the media and public
January 2017 Point In Time Count in Aurora, Colorado

- Esri was intrigued...

They collected requirements and built the Survey123 Homeless templates available today
January 2017 Point In Time Count in Aurora, Colorado

- Observations regarding volunteers and new technology
  - The 2017 Survey123 utilization was easily adopted and utilized without many barriers
  - One person on an outreach team could be responsible for the mobile technology while all team members could participate in locating folks camping/sleeping outside
    - Volunteer with best phone was utilized
  - Generally volunteers were excited to use the new technology
  - Some concern about how the mapping of where folks camp being used by law enforcement – which will not and did not happen
January 2018 Point In Time Count for Metro Denver Prep

• Socializing with the metro wide community
  - Pre-conceptions and Fears
    - Mapping people – a vulnerable population
    - Fear of sharing data with Police and others
    - Fear of technological problems
    - Fear of change, process
    - Institutional inertia

• Winning over the MDHI (Metro Denver Homeless Initiative) Board
  - Community will-building and hold outs in various area agencies

• Back and Forth regarding survey details
  - Early start but… not an early finish
  - Committee wrangling
Tech Count Down for PIT 2018

Ryan Witsell
Pre-PIT 2018 Survey123 Creation

- Survey123 customization of template
  - Workflow diagram
  - Paper vs Survey123 matching
  - Rhetorical changes (person centered language, example: “Experiencing homelessness”)
  - Privacy concerns, uniqueness of surveys, deduplication efforts
    - First three of first name, first three of last name
    - Month and year of birth
  - Custom adds… pets question (sponsorship), etc.
  - Nested survey – family groups
Usage of desktop Survey123 Connect Tool

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey date</td>
<td>Date of the survey</td>
</tr>
<tr>
<td>Survey name</td>
<td>Name of the survey</td>
</tr>
<tr>
<td>Survey type</td>
<td>Type of the survey</td>
</tr>
<tr>
<td>Survey code</td>
<td>Code associated with the survey</td>
</tr>
<tr>
<td>Identification</td>
<td>Identification of the respondent</td>
</tr>
<tr>
<td>Is the person in a shelter?</td>
<td>Whether the person is in a shelter</td>
</tr>
<tr>
<td>Shelter area</td>
<td>Area of the shelter</td>
</tr>
<tr>
<td>Shelter type</td>
<td>Type of the shelter</td>
</tr>
<tr>
<td>What is the name of the person?</td>
<td>Name of the person surveyed</td>
</tr>
</tbody>
</table>

Survey date: 6/28/2018

Surveyor name:

Surveyor site/program:

Surveyor code:

Is the person in a shelter? [ ] Yes [ ] No

Are you able to survey this person? [ ] Yes [ ] No

Location:

No Location
Pre-PIT 2018 Map Data and Web Map Creation

- Division of area zones
  - Hotspots (ex. rivers, parks)
  - Mapping previous “Access Aurora” citizen requests tagged as homeless issues
  - Zones, metro neighborhoods, wards, magnet/agency sites, and addresses
  - Creating a live dispatching map
Pre-PIT 2018 Creation of the Dashboard

- Created Web AppBuilder Operations Dashboard
- Ability to monitor results and numbers as they came in
- Crisp charts and diagrams for viewing attribution
Organizing and Training Volunteers

- 15 Volunteer trainings region wide

- Organizing and Training Volunteers from many different agencies
  - Documenting How To turn on “Location Services”
  - Distributing links for testing by volunteers
    - Next time… texting URLs to volunteers
  - Survey “code” field
Go Live
Starring 40+ agencies and 300+ volunteers
“Day Of” Stories

- Deployment of count in large shelter environments
  - Sampling used in shelter line (bus passes)

- Magnet Events… “manufactured a blizzard”
  - Slumber party with food and movies
  - Haircuts
  - Cold weather motel rooms
PIT Narratives

- Data helpful, but anecdotal evidence is still powerful
- David
- Art District walk about
- Gender question
Tech “Day Of” Stories & Tips

• Turn off “Test” survey and turn on “Production” survey

• Support and Training considerations

• Back up AGOL Survey123 data, each ½ hour

• Deduplication fields

• Surveyor fields

• Survey code field

• Fear of application loads issue, unfounded
Who knew…
After Event
Data Availability

- Data processing / export for external entities like counties and MDHI
- Data available immediately for review
- Data correction for perfect x, y... with shelter locations
- Reports
Conclusions and Takeaways
Collaboration builds unique successes

ACKNOWLEDGMENTS

This is the seventeenth Point in Time (PIT) study conducted by the Metro Denver Homeless Initiative (MDHI). We owe a debt of gratitude to all those who participated in this year’s count and contributed to this report. We are pleased to have partnered with the OMNI Institute, which, in collaboration with MDHI, analyzed the data collected in the 2018 survey.

MDHI would also like to extend many thanks to our GIS superheroes, Bill Keever and Ryan Witsell, with the City of Aurora’s GIS team, for their comprehensive support of the mobile application and mapping efforts. Thanks as well to the Mile High

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Alix Midgley, Adams County Office of Regional Affairs
Elizabeth Murray, Denver’s Road Home
Megan Nyce, CO DOLA, Office of
## Metro PIT Results 2018 – Headline Number reported by Denver media

### Table 1. Number of Persons in Homeless Living Situations by Household Type on January 29, 2018

<table>
<thead>
<tr>
<th>HUD Household Type</th>
<th>ES-emergency shelter</th>
<th>TH-transitional housing</th>
<th>Unsheltered</th>
<th>Safe Haven</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household without children</td>
<td>2086</td>
<td>590</td>
<td>1212</td>
<td>22</td>
<td>3910</td>
</tr>
<tr>
<td>Household with at least 1 adult and at least 1 child</td>
<td>486</td>
<td>823</td>
<td>93</td>
<td>0</td>
<td>1402</td>
</tr>
<tr>
<td>Household with only children under 18</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2574</strong></td>
<td><strong>1413</strong></td>
<td><strong>1308</strong></td>
<td><strong>22</strong></td>
<td><strong>5317</strong></td>
</tr>
</tbody>
</table>
Metro PIT Results 2018

Figure 1. Number of Persons in Homeless Living Situations

- % Household without children: 31.0%
- % Household with at least 1 adult and at least 1 child: 58.7%
- % Household with only children under 18: 60.0%

Legend:
- ES-emergency shelter
- TH-transitional housing
- Unsheltered
- Safe Haven (Denver only)
Metro PIT Results 2018

- Unsheltered count way up (1308), with PIT collection emphasis
- 65% in Denver County

Table 2. Change in Homeless Population, 2015 – 2018

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>% Change 2015-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheltered</td>
<td>5177</td>
<td>4681</td>
<td>4192</td>
<td>4009</td>
<td>-22.6%</td>
</tr>
<tr>
<td>Unsheltered</td>
<td>827</td>
<td>786</td>
<td>924</td>
<td>1308</td>
<td>58.2%</td>
</tr>
<tr>
<td>Total Homeless</td>
<td>6004</td>
<td>5467</td>
<td>5116</td>
<td>5317</td>
<td>-11.4%</td>
</tr>
</tbody>
</table>
Metro PIT Results 2018

- Homeless Family Population by Household Composition (Total = 1,402)
Metro PIT Results 2018

- Newly Homeless Population (Total = 1,060)
Metro PIT Results 2018

- Chronically Homeless Population (Total = 1,596 people)
Metro PIT Results 2018

- Unaccompanied/Transition Age Youth (Total = 237)
Metro PIT Results 2018

- Currently Fleeing Domestic Violence (Total = 384)
Aurora PIT Results 2018

• Inequality
Metro PIT Results 2018 – Notes of Interest

- Car camping
- Camping along river corridors away from Denver
- Inequality
- More effort, more technology, lower total counts... why?
  - Volunteer training issues
  - Dozens of agencies
Tips and Lessons

• Directing a myriad of other agencies resources is difficult
  - When in the role of a technical resource
  - Systematic coverage approach to cover hotspots

• “The Art of Organizing”, training pre-event, make test survey available
  - Volunteers are free help and…

• UI Experience is critical, map widget needs simplification

• Add custom fields: deduplication fields & survey “code”

• Cloud software
  - Out of your control
  - Software updates happen at inopportune times
Changes for next year

- Standardization of agency names, adding pick lists/dropdown lists
- Shelter dropdown pick list with x,y value
- Assumptions regarding if they were in a shelter that they were counted last night
- Esri’s free software for non-profits, MDHI is considering
- “Walkbooks”, routing volunteer teams street by street
- Ability to connect surveyed individuals with ongoing services
Changes for next year

- Plenary… Tracker…
The Geography of Homelessness

• Staring at maps and data... what are the patterns over space and time?

• Convert that information into knowledge and then into actionable decisions