Mobile Data Collection_ A Collaboration

Kyle Johnson GISP
GIS Coordinator
Delaware County, Indiana
Delaware County
City of Muncie, Indiana

Delaware County
117,000 People
396 Sq. Mi.

Muncie:
70,000 People
(20,000 Ball State Students)
27.39 Sq. Mi.
Delaware County GIS Dept.

- 2 Full Time Positions
- 1-2 Student Interns
- Maintains, Develops & Distributes GIS Data and Applications for Delaware County & City of Muncie
- Over 50 Active Users, 6-8 Power Users
- 50+ Online Maps and Applications
Partnership with Ball State University

- Department of Urban Planning
- Studio Classes, Project-based
Muncie Action Plan

- Strategic guide created based on public input that expresses the values and aspirations of our community

- Recommendations from the community, accompanied by extensive factual analysis of trends and conditions, form the basis of the Plan

- Includes long-term goals and measurable action steps

- Fulfills Initiative 2 (out of 5): Organizing Neighborhoods & Fostering Collaboration
The Neighborhoods
The “Neighborhood Studio”
“Immersive Learning”

To be considered immersive, a project must:

• engage participants in an active learning process that is student-driven but guided by a faculty mentor
• produce a tangible outcome or product, such as a business plan, policy recommendation, book, play, or DVD
• involve at least one team of students
• include community partners and create an impact on the larger community as well as on the student participants
• help students define a career path or make connections to a profession or industry
Neighborhood Action Plans

Past:
• Whitely
• South-Central
• Old West End
• Blaine/Southeast
• Industry

Upcoming:
• Riverside/Normal City
• Thomas Park/Avondale

Photo: L. Dunaway
GIS Inventory Methodology

- Pre-loaded inventory map with existing features (parcels, buildings, other infrastructure)

- Students collected conditions, new & removed features, as well as class-designated features (mostly points)

- Finished inventory data delivered to class as a geodatabase for their analysis.
Utilizing Mobile Apps

- ArcGIS Online, ArcGIS “Green” App for iOS/Android

- Feature Services Initially hosted using Delaware County’s ArcGIS Server, main ArcSDE-SQL geodatabase

- Moved to ArcGIS Online hosted feature services

Source: Delaware County GIS Dept.
Appending & Updating Existing Data

- **Structure Condition** (building footprints)
- **Vacant parcels**
- **Storm Drain Problems**
- **Street Condition**
- **Sidewalk Condition**
- **Fire Hydrants**
- **Street Trees**
- **Street Signs**

Source: Delaware County GIS Dept.
Collecting New Data

- Curb Ramps (ADA Compliance)
- Potholes
- Street Lights
- Amenities
- Landmarks
- Other Problems

Source: Delaware County GIS Dept.
Using ArcGIS Collector

- Better performance
- Easier for students to learn & use
- Feature collection without network connection
Final Action Plan

Table of Contents

Executive Summary 1
Planning Process 6
Catalyst Areas 6
Components of the Plan 7
History 9
Demographics 11
Existing Conditions 13
Goals & Initiatives 15
Economic Development 17
Public Safety 17
Community & Economic Development Opportunities 19
Local Grocery Store 21
End Use Initiative 23
Increasing Access to Quality Work 25
Shifting Housing Code Enforcement 69
Active Elderly & Seniors 71
Utilizing Non-Traditional Volunteers 73
Quality of Life 83
A Balanced and Good of Living 109
After School Programs, Community Center & Job/SE programs 87
Community & Economic Development Initiatives 99
Health Care Access 39
Dining Options for Older Adults 87
Local Support Services & Connections to the elder 89
Infrastructure 115
Bike Lanes 126
Green Infrastructure 128
Funding 130
Public Art 132
Walkways and Crosswalks 136
Shaded Canopy 138
Street Lighting 139
Landscaping 140
Parking 141
Housing & Affordable Housing 151
Right-Of-Way and Historic Preservation 154
Bringing Venues to the Neighborhood 160
Health in All Policies 161
Safety 169
Nighttime Crime 170
Incident Follow-up Reporting 173
School Board Programs 77
Food Shops 186
Mailing Addresses 187
Appendices 194
Related To Wildlife 191
Metro Funding Sources 195
Local Funding Sources 194
Glossary 207
Goals
At the first neighborhood meeting, residents voiced the improvements they would like to see in the OWE, which the students later grouped into different “goal” groups of related improvements. The six goal groups include: Housing and Living, Land Use, Infrastructure, Safety, Economy, and Quality of Life. The improvements requested by the residents became the initiatives under each goal.

Initiatives By Priority
Initiatives were put into priority groups based on resident's preferences of needs in the Old West End. Residents had the option to prioritize the initiatives based on what they believed needed addressed first using an online survey. Each position that the residents voted on was then assigned a point value. The values were added up and averaged in order to find out the priority level. In total there are three priority levels: those that are top priority, intermediate priority, and low priority.

The five top priority initiatives can be seen in green in the graphic to the right. The top initiative that residents want to work on is Blight Removal & Historic Preservation.
Inventory & Analysis Maps

Legend:
- Streets
- Railroads
- Recreation Trails
- Major Waterbodies
- Building Footprints

Land Use:
- Community Business Zone
- Flood Area Zone
- Limited Business Zone
- Major Trading Zone
- Residence Zone 4
- Residence Zone 5

Area Two Land Use

Scale:
1 inch = 300 feet
Suitability Maps
Priority Maps

White River Connection Priorities
Blight & Crime Map

Crime Density hotspot map using kernel density analysis.

New hotspot maps provided every year so the Neighborhood Association can track how crime has changed.
Analysis Maps

Street Lights and Crime Density Infrastructure
The Plans

• See all our neighborhood plans at [http://lisadunaway.com/student-work/](http://lisadunaway.com/student-work/)
• Look for PLAN 302 or PLAN 629

• Muncie Action Plan
• [http://neighborhoods.muncieactionplan.org/](http://neighborhoods.muncieactionplan.org/)
Lessons Learned...

- Build partnerships with local higher education institutions
- Work data collection initiatives into their class projects
- Utilize ArcGIS Online hosting, if possible.
...New Services

- Development of a special map tailored to the needs of Neighborhood Associations
Other Neighborhood Initiatives
Field Trips & Story Maps

- Field trips to other cities to study Urban Planning
- Students collected locations, pictures and descriptions
- Used Collector and more recently GeoForm apps
- StoryMap was created highlighting the trip and shared
BSU Urban Planning Pittsburgh Trip 2013

Featured locations and images collected by Ball State University Urban Planning students.
Thank you!

QUESTIONS?