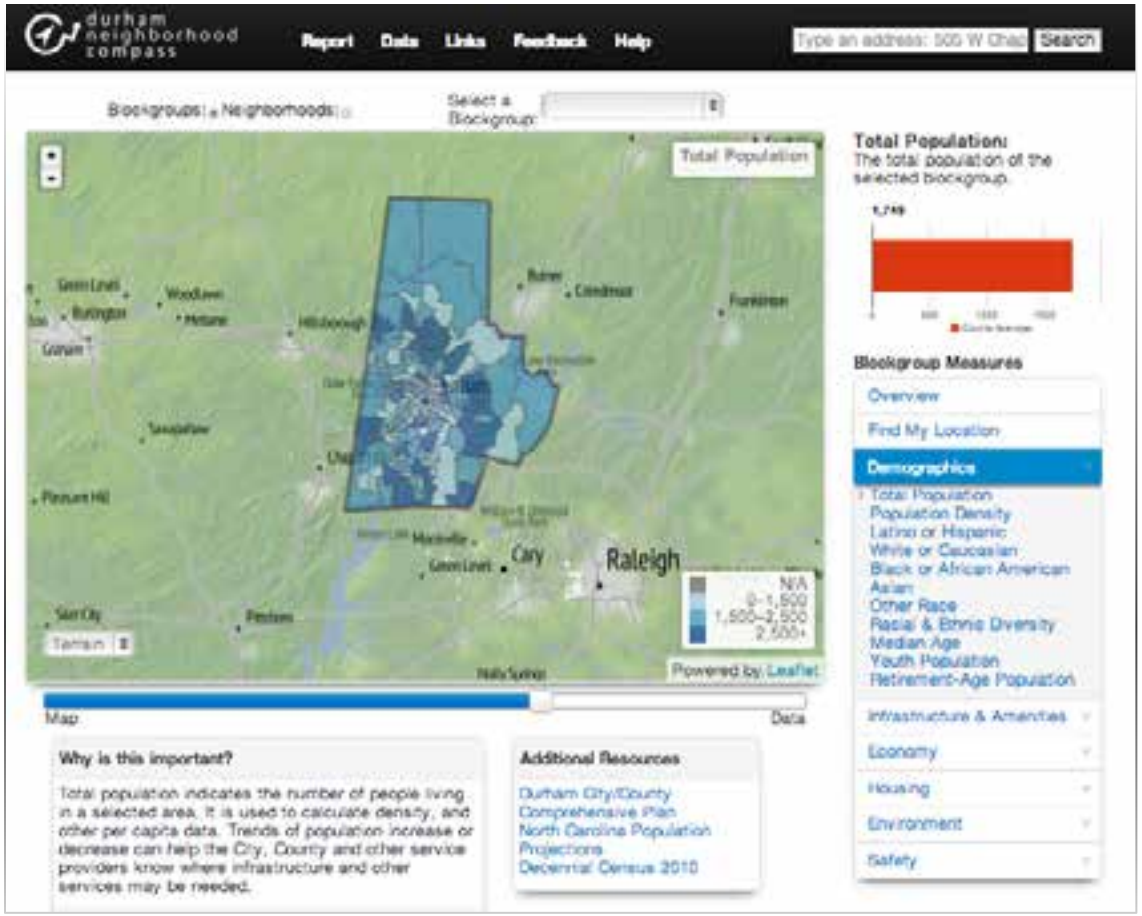
Building Community by Illustrating Community
Durham's Neighborhood Compass



compass.durhamnc.gov

A presentation by
John Killeen
Rob Cushman
Tyler Waring

Neighborhood Improvement Services
&
Technology Solutions
City of Durham, NC

July 2014

30,000 ft

City Strategic Plan Goal 3:
Thriving, Livable Neighborhoods

Strengthen the foundation, enhance the value, and improve the quality and sustainability of neighborhoods.

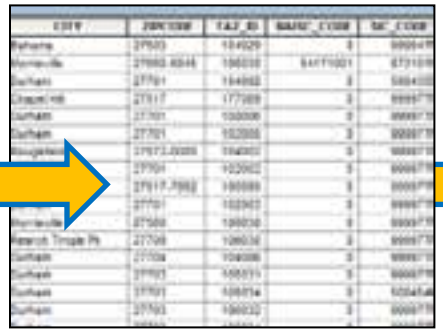
Initiatives

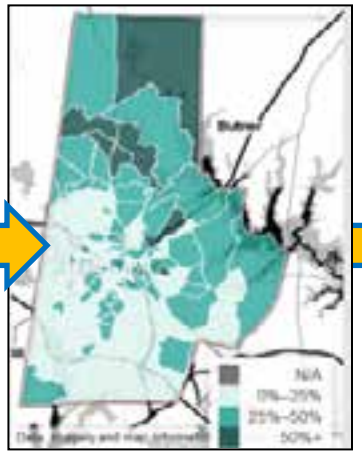
- Develop a Neighborhood Compass model and use the data to improve the quality of neighborhoods
- Use the annually updated data to target resources to areas of need

5,000 ft

Project Design

- Local data and Census measurements for neighborhoods
- Annual change – trending and latest data
- Demographics, economy, engagement, environment, health, housing, education, safety, infrastructure & amenities
- Connections to existing services
- Include interactive map, charts
- Reports and interpretation





Images: [www.careercastcom](), dconc.gov

InterNeighborhood Council of DURHAM

Durham Public Schools

DURHAM COUNTY DCO NC 1881

OLD WEST DURHAM NEIGHBORHOOD ASSOCIATION
DIVERSITY + HARMONY COMMUNITY

DURHAM 1869 CITY OF MEDICINE

Habitat for Humanity® of Durham

Durham CAN
Congregations Associations & Neighborhoods

REINVESTMENT PARTNERS
"ADVOCATING FOR ECONOMIC JUSTICE AND OPPORTUNITY"

5,000 ft

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5,000 ft

What It Is Not

- An index that summarizes broad and disparate values for neighborhoods into codes (1, 2, 3: bad, good, best)
- A catch-all “data dump” that publishes everything available

50 ft

Getting Started

- Use case
- NIS relationship with UNC Charlotte/City of Charlotte/Mecklenburg County
- NIS partnering with Technology Solutions

What are neighborhoods?

What are neighborhoods?

- Homes and people near my house?

What are neighborhoods?

- Homes and people near my house?
- Homes and people near my church or school?

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- Parts of town with similar architecture from a common era?

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- Platted phases of subdivisions?
- Administrative wards or districts?

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Yes, yes, yes, and yes – and more….

I Think We Can Agree That…

… all neighborhood definitions include a

–Geographic (place-oriented)

and

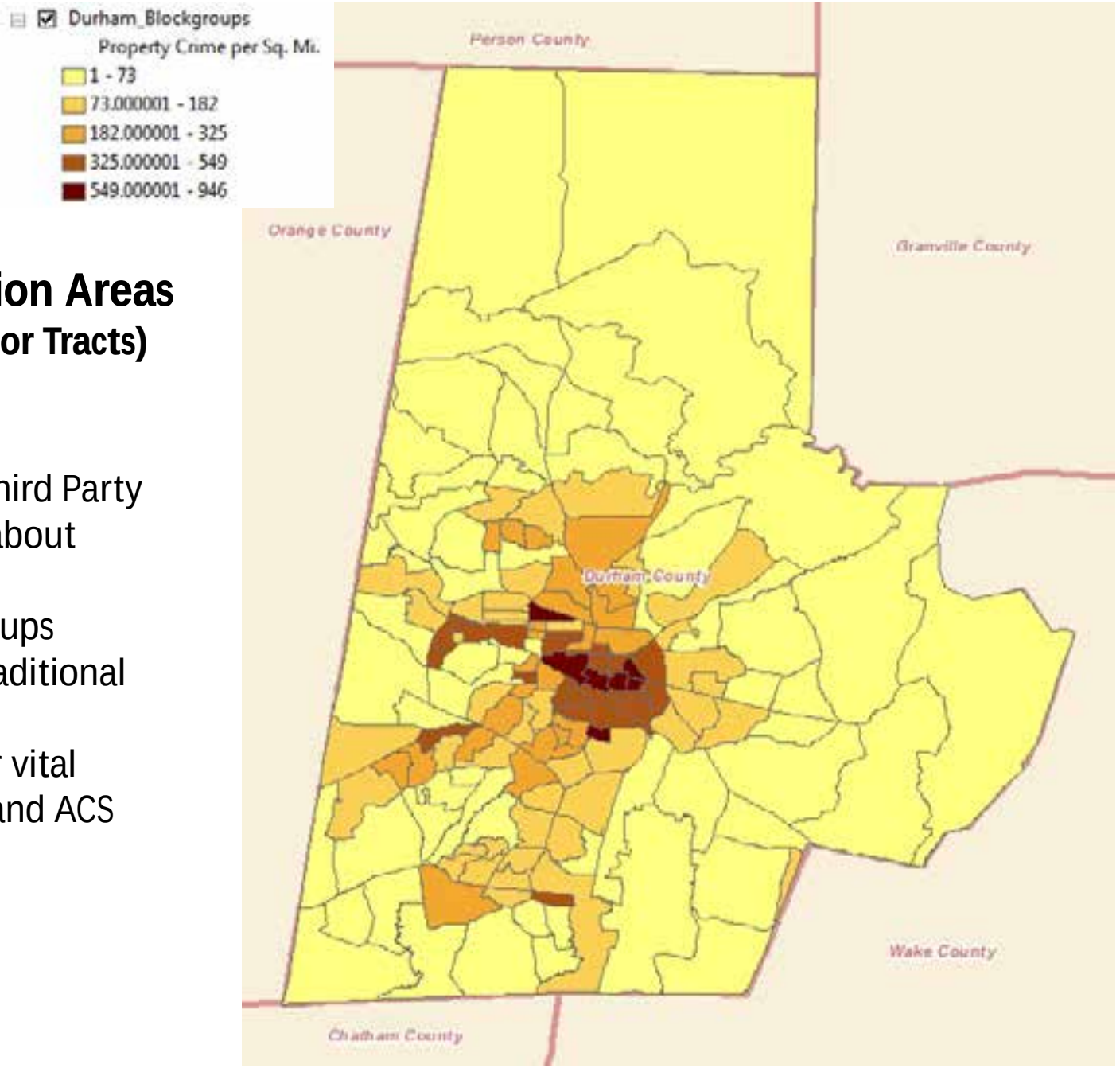
–Social (people-oriented)

component

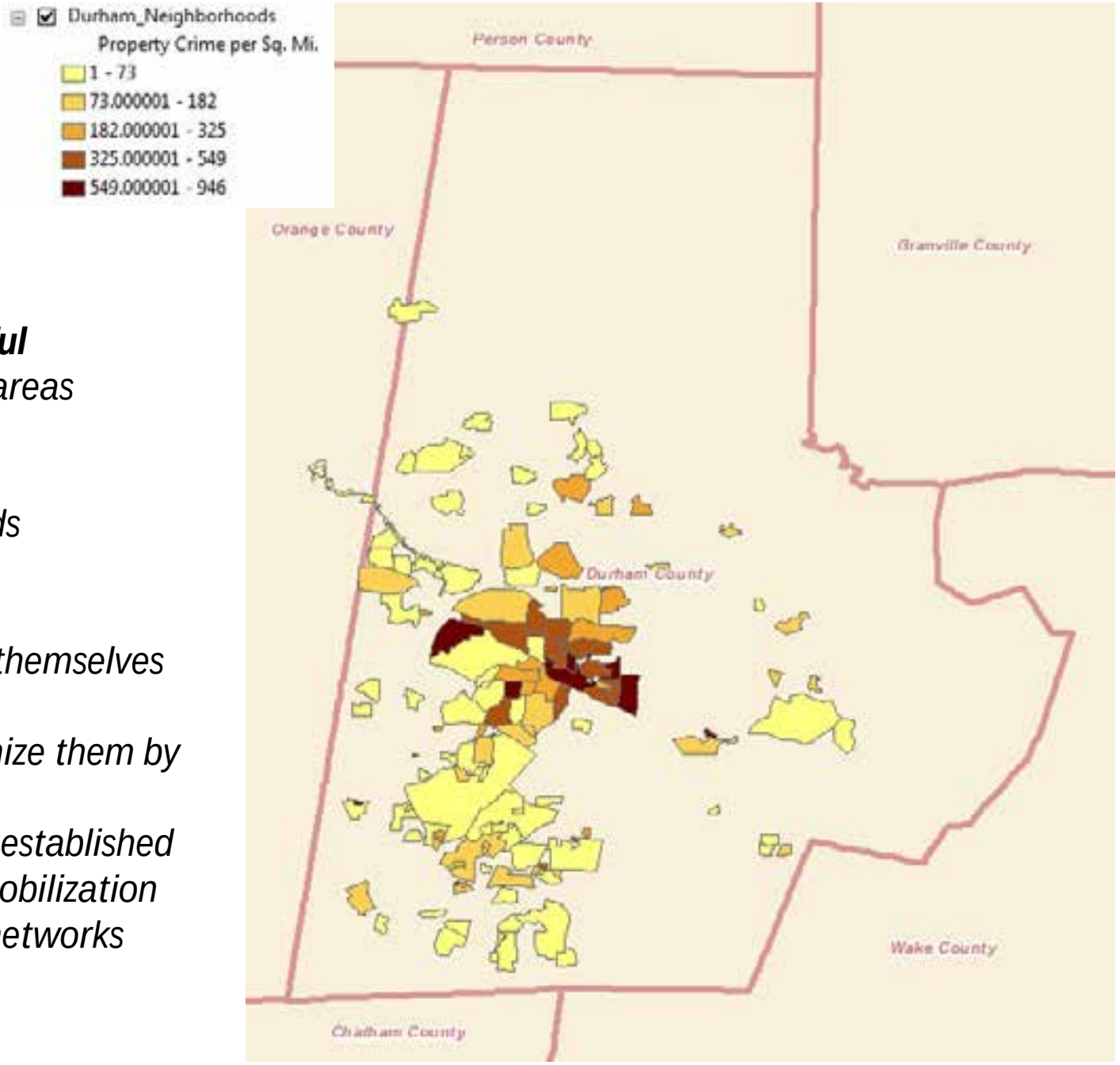
Most neighborhood projects have resorted to Census enumeration areas

Proxy Neighborhoods
Census Enumeration Areas
(Blocks, Blockgroups, or Tracts)

- No gaps
- Pre-Defined by a Third Party
  - No bickering about boundaries
- We chose Blockgroups
- Similar in size to traditional neighborhoods
- Summary levels for vital Decennial Census and ACS data



Traditional Neighborhoods



Challenging, but useful

- *Huge gaps (many areas remain unclaimed)*
- *Fickle Boundaries*
- *New neighborhoods*

Useful because...

- *Residents Identify themselves as members*
- *Others may recognize them by name*
- *They already have established communication, mobilization and engagement networks*
  - Listservers
  - Meetings
  - Newspapers

It’s Not About the Boundaries

All definitions are important and meaningful.

The key is to agree that all neighborhoods are important –

And provide a platform that all stakeholders can use for community building and to advocate for positive changes for all of Durham.

At the largest scale, Durham is our Neighborhood

DURHAM's Initial APPROACH…

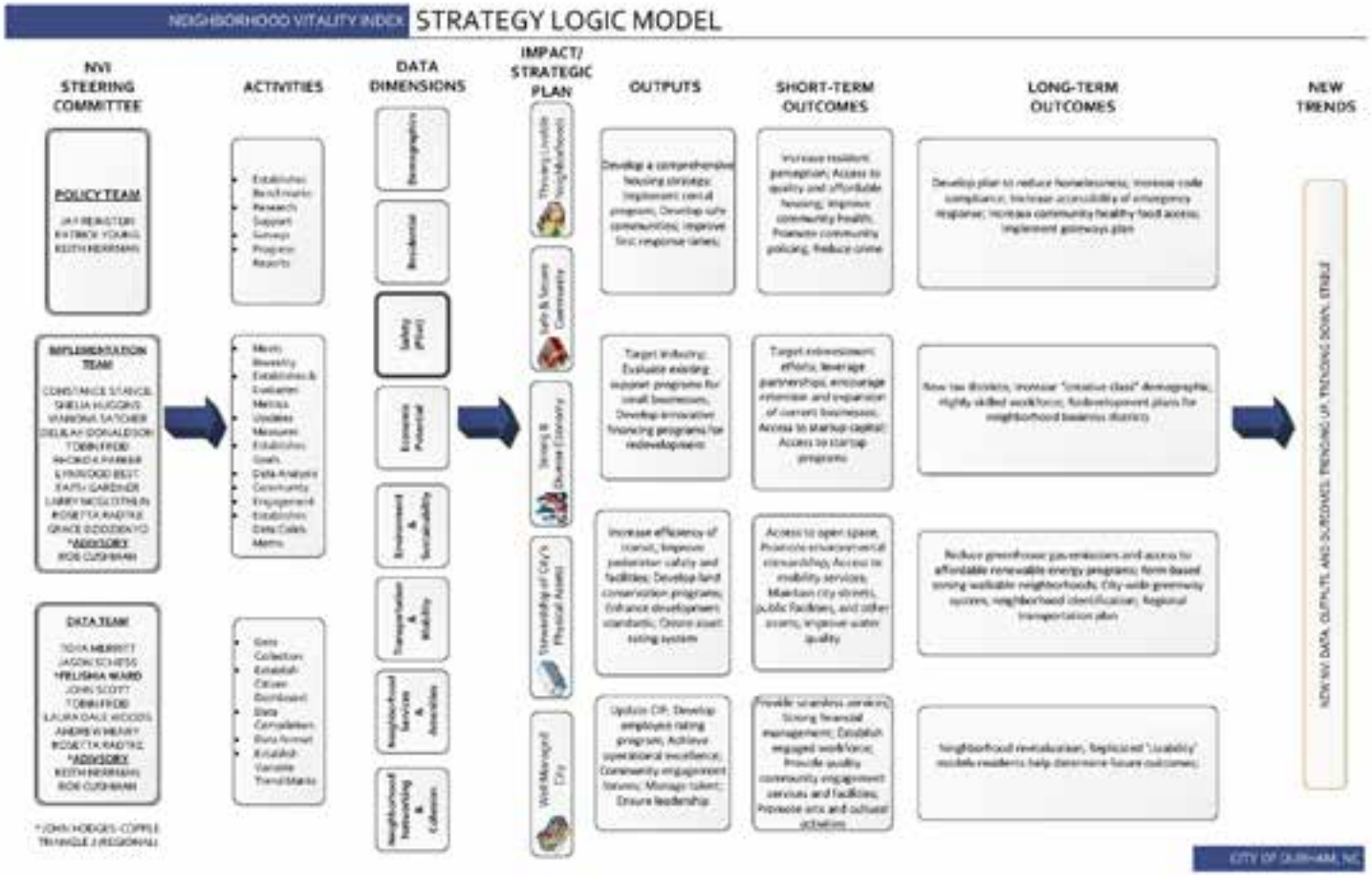
- Organize a committee of motivated City Employees
  - Several department heads
  - Other creative thinkers
  - Well-meaning activists

  to plan development steps
- Form sub-committees
  - Data Team
  - Policy Team
  - Implementation Team
- Quarterly Meet, plan, talk sessions
  - Meet, plan, talk,
    - Meet, plan, talk….

had many Great Ideas, but

…had no GIS or Data Stewards on board

Logic Model


NEIGHBORHOOD VITALITY INDEX
STRATEGY LOGIC MODEL
NVI STEERING COMMITTEE
POLICY TEAM
IMPLEMENTATION TEAM
DATA TEAM
ACTIVITIES
DATA DIMENSIONS
IMPACT/ STRATEGIC PLAN
OUTPUTS
SHORT-TERM OUTCOMES
LONG-TERM OUTCOMES
NEW TRENDS
Demographic
Residential
Safety (Plan)
Economic Potential
Environment & Sustainability
Transportation & Mobility
Neighborhood Services & Amenities
Neighborhood Networking & Cohesion
Thriving Livable Neighborhoods
Safe & Secure Community
Strong & Diverse Economy
Stewardship of City's Physical Assets
Well Managed City
NEW NVI DATA, OUTPUTS, AND OUTCOMES TRENDING UP, TRENDING DOWN, STABLE
CITY OF DURHAM, NC

Pared Down Data Matrix

DATA COLAB MATRIX

DATA DIMENSIONS								
Demographics (D)	**D**	**R**	**S**	**EP**	**ES**	**TM**	**NA**	**NC**
% Persons with health care	●				●	●	●	●
% Homeowners	●	●	●	●			●	●
% Persons under age 18	●				●	●	●	●
% Persons over age 64	●				●	●	●	●
Residential (R)	**D**	**R**	**S**	**EP**	**ES**	**TM**	**NA**	**NC**
# Housing code violations		●	●		●		●	●
# Historic properties		●		●			●	●
# Multi-family housing	●	●				●	●	●
# Renter housing	●	●		●	●	●	●	●
Safety (S)	**D**	**R**	**S**	**EP**	**ES**	**TM**	**NA**	**NC**
Crime rates	●		●				●	●
Perception of Safety		●	●	●	●	●	●	●
Shelter	●	●	●		●			●
Property crime rates	●	●	●	●			●	●
Economic Potential (EP)								
Environment & Sustainability (ES)								
Transportation & Mobility (TM)								
Neighborhood Services & Amenities (NA)								
Neighborhood Networking & Cohesion (NC)								

Data dimensions as set by Data Team

Data alignment as set by Implementation Team

While each data dimension is developed to measure exisitng conditions and progress to meet certain targets, each data dimension also measures conditions and progress in other dimensions and departments

GIS to the Rescue

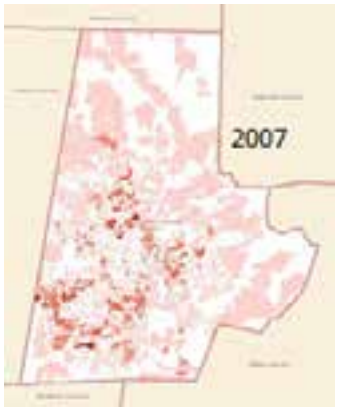
- Just do it!
  - Forget the Data matrix (the Data Wish List)
  - Stop focusing on data collection
  - Work with the data we already have
  - Display Census/ACS data using the Census Geography
  - Display local Durham data the same way

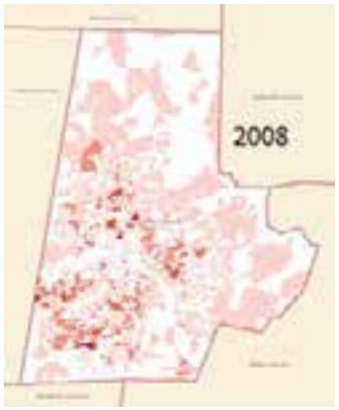
Geo-processing Steps for Local Data

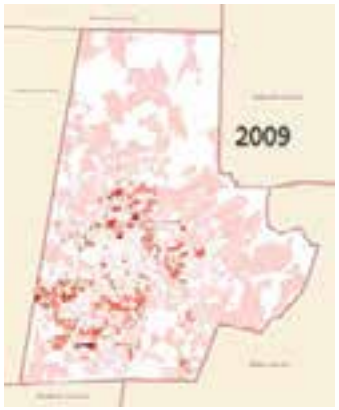
- Geocode tabular data to create point features
- Spatially join points to Census polygons
- Summarizing each metric on polygon IDs
  - Frequency count by Census polygon for each measure
- Normalize each metric appropriately
  - Frequency per area (or population, or dwelling unit count, or $1,000,000 assessed value, etc.)
- Join normalized metrics on polygon IDs to prepare attribute table
- Join attribute table to the polygon layer
- Shade polygons using natural breaks for the normalized data

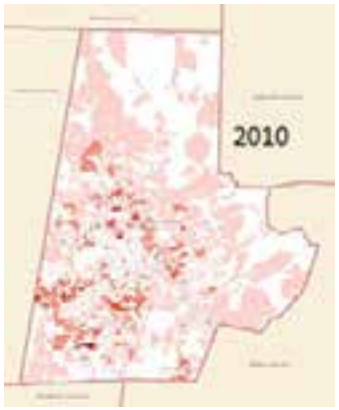
Developing a Proof of Concept

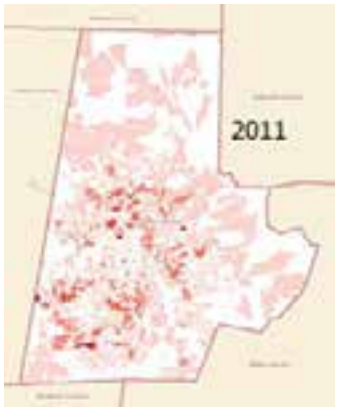
- Crime data map service
  - PD/Sheriff data already geo-coded
  - Blocks, granular to reflect the data
  - Marketing proof of concept to City Manager











Absolute Count of Part 1 Property Crimes by Census Block

Challenges

- Hiring a project lead and content gatekeeper (John)
  - Developing Reliable Datasets and Repeatable Workflow Routines
    - Trust building and relationships
    - MOUs for Sensitive data
      - Durham Public Schools, DSS, Health Data
- Hiring a creative in-house application developer (Tyler)
  - Serve as technical gatekeeper
  - Customize available code to local needs
    - Innovate and create new functionality
    - Stay abreast of new software platforms

Assessment of Presentation Options

- Mecklenburg County Quality of Life Dashboard
  - Tobin Bradley
  - https://github.com/tobinbradley
  - http://fuzzytolerance.info/
- Extensible to Durham's use case?
- Technical requirements?
- Capabilities gaps (PHP, Leaflet, etc)

Implementation

- Early prototyping (ACS data)
- Stakeholder feedback
- Further developing Durham's use case through exploring what is possible
- Opening it up to committee: What if it could do ***this***?
- Filtering great ideas for what is immediately functional

  - Technical gatekeeper(s)
  - Keep it simple

Durham Ownership *or Customization*

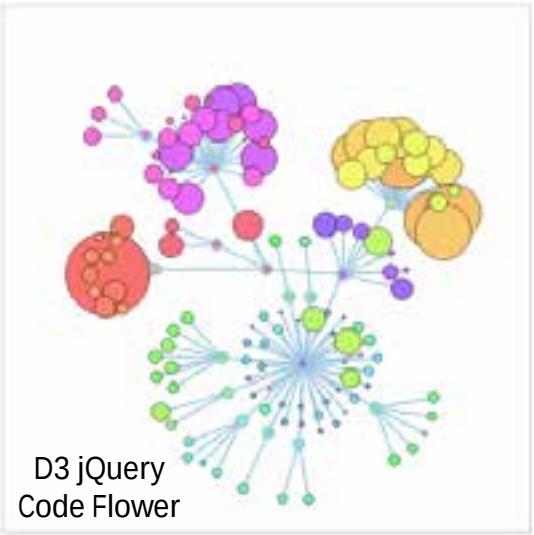
- Multiple target layers
- Time series
- Base maps: aerial, zoning, future land use, streets
- Google Analytics (custom events)
- Enhanced reporting
  - Hash links returning back to application
- Linking other applications to Compass
  - GoMaps

Zoning

Future Land Use

Future improvements

- Python scripting for rapid target layer/metric deployment
  - Open Data consumption
- Advanced data display and content organization
  - D3 library/Scalable Vector Graphics
    - Feature selection by chart(s)/graph(s)
    - Value added coolness
- End user's imagination



D3 jQuery
Code Flower

Applications are born and die, but data and culture make projects meaningful

7,500 ft

Lessons Learned

- Work with what you've got!
- Data stewards and data quality across departments
- Requires a cultural shift to knowing your own data and how to manipulate it
- The Neighborhood Compass is a program
  - Annual updates and expansion of analysis
  - service to departments, nonprofits and community groups…developing capacity
- Longevity is essential

Questions?