



# COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY



# VISION

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TOWARDS A NATIONAL COMMUNITY LEARNING NETWORK

**USDA-NIFA:**  
FACT: THREE-STATE DATA  
SCIENCE FOR THE PUBLIC GOOD  
COORDINATED INNOVATION  
NETWORK

**GOAL:** Infuse data science into  
agriculture research, workforce  
development, and Cooperative  
Extension activities across our  
states, with a focus on rural  
communities.



Evolve the next generation  
CES capable of partnering  
with local community  
stakeholders, to take a  
**deeper data-driven approach**  
to better understand and  
address issues.

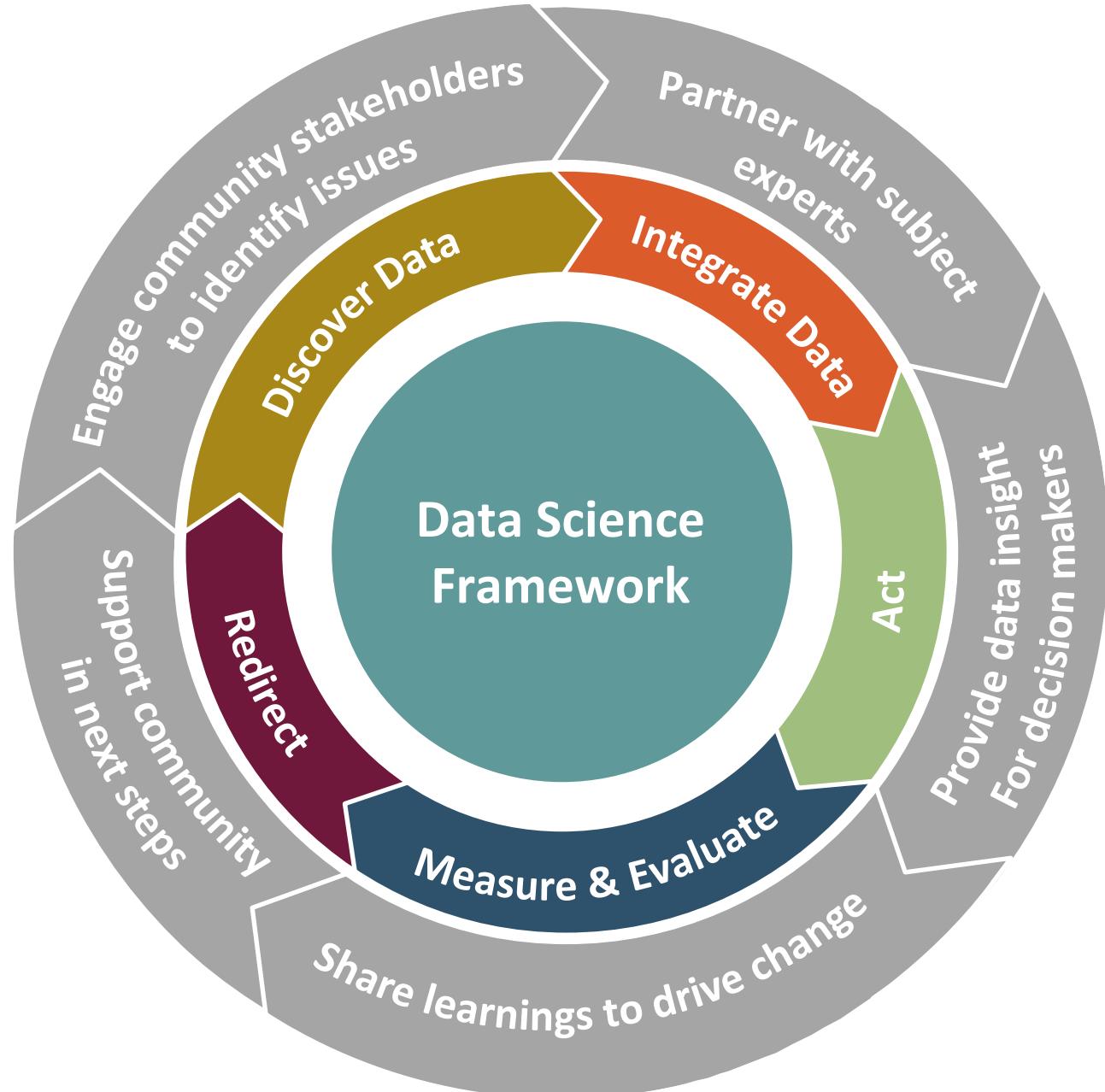
**GATES FOUNDATION:**  
A COMMUNITY LEARNING  
NETWORK TO ADVANCE  
ECONOMIC MOBILITY

**GOAL:** Demonstrate CES network is an  
effective existing network for the  
development and dissemination of  
community-driven, data science-based  
approaches to **advancing economic  
mobility**

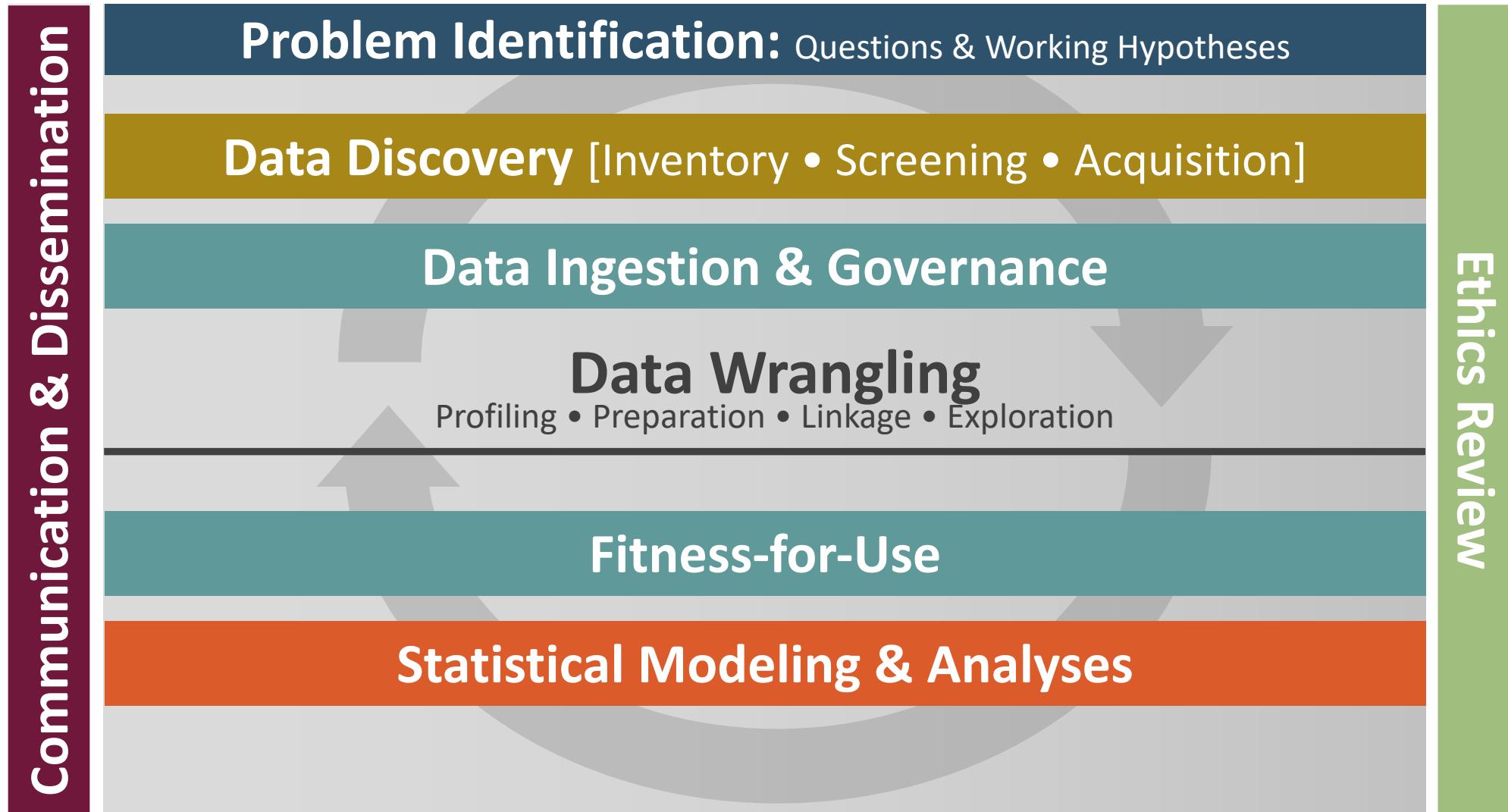
## OUR GUIDING PROCESS

### Community Learning through Data Driven Discovery (CLD3)

- Outer wheel: continuous interaction and communication across stakeholders
- Middle wheel: data-driven learning process
- Frontier between these two wheels: active collaboration between all partners
- Inner circle: rigorous research framework to guide the data science



# DATA SCIENCE FRAMEWORK





COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY  
**EXAMPLES**



COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY

# GILES COUNTY, VA



# BACKGROUND



**POPULATION:** 16,837  
**SIZE:** 360 SQ. MILES  
**UNEMPLOYMENT RATE:** 4.7%  
**ANNUAL BUDGET:** \$53 MILLION  
**RACE:** 95% WHITE\*

\*WHITE ALONE, NOT HISPANIC OR LATINO

# GILES COUNTY, VIRGINIA

## ISSUE

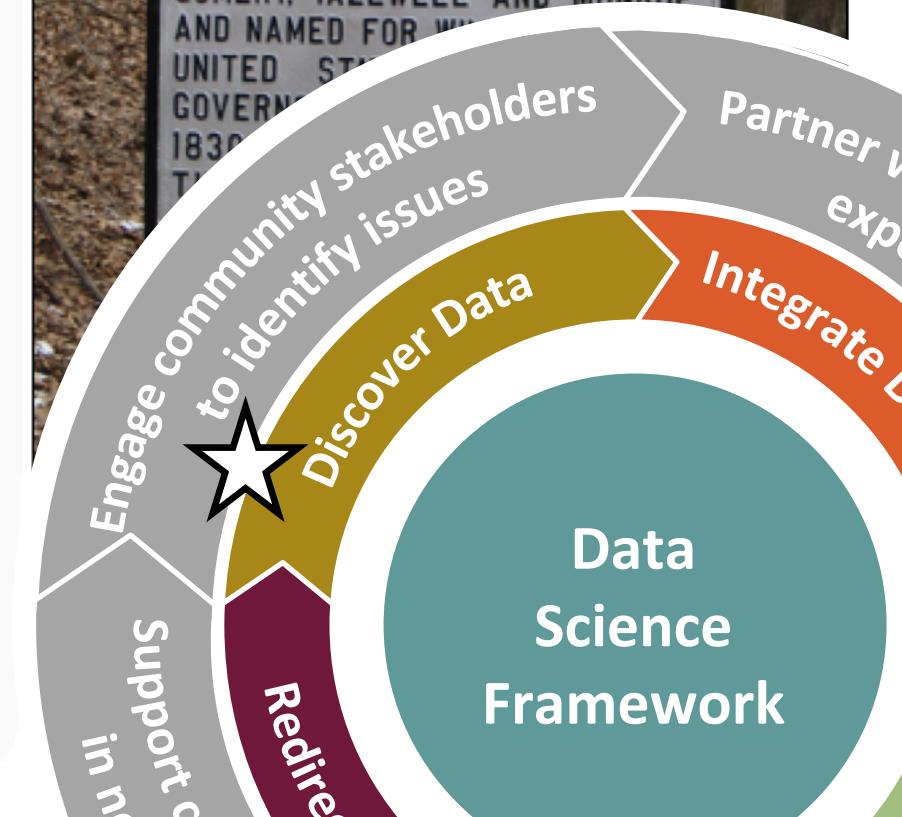
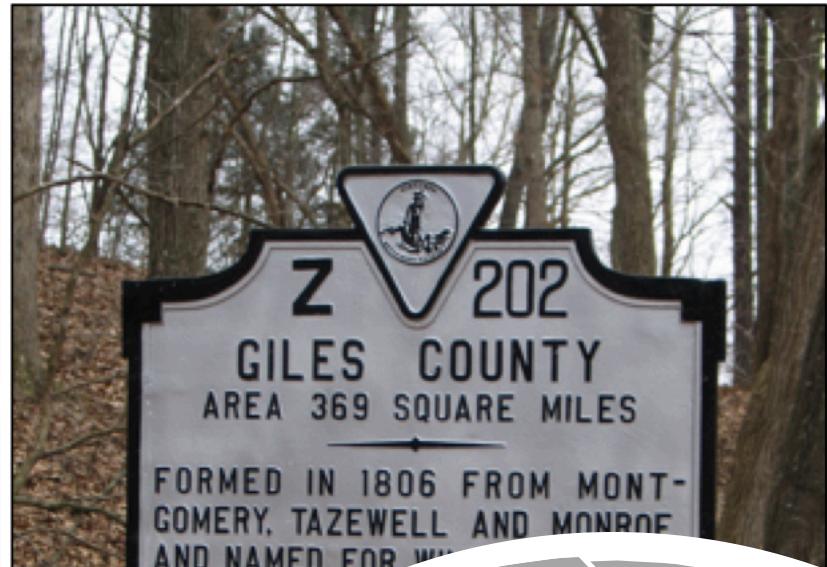
- In 2015, Giles County officials realized reactive services make up 61% of the county's operating budget

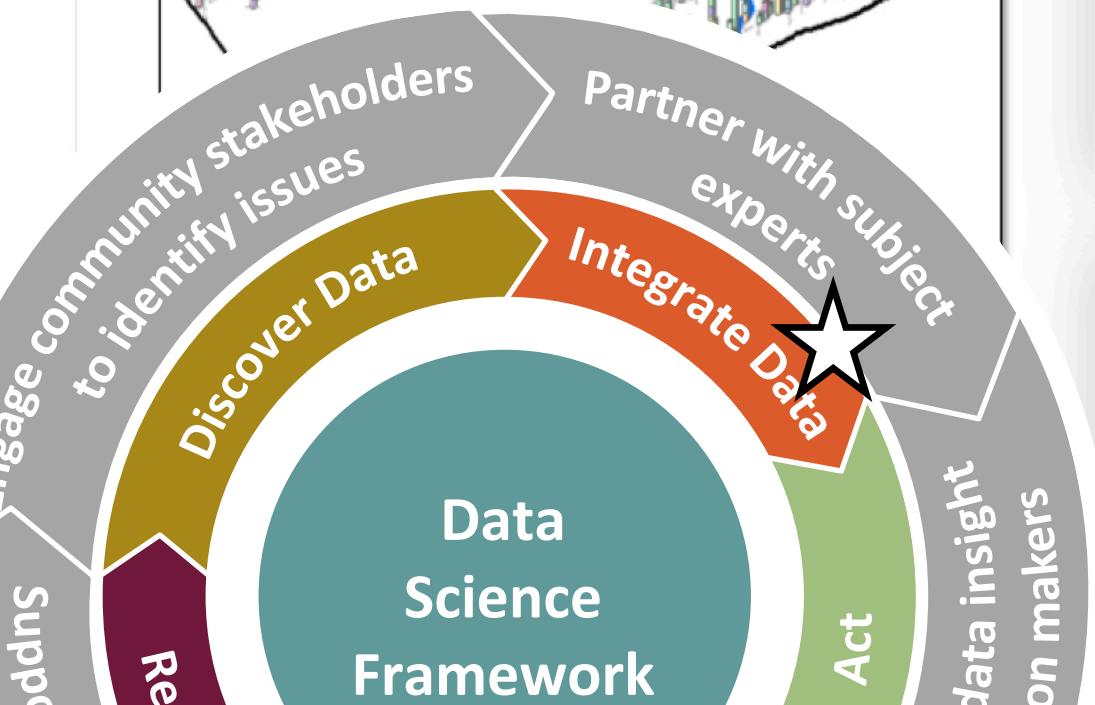
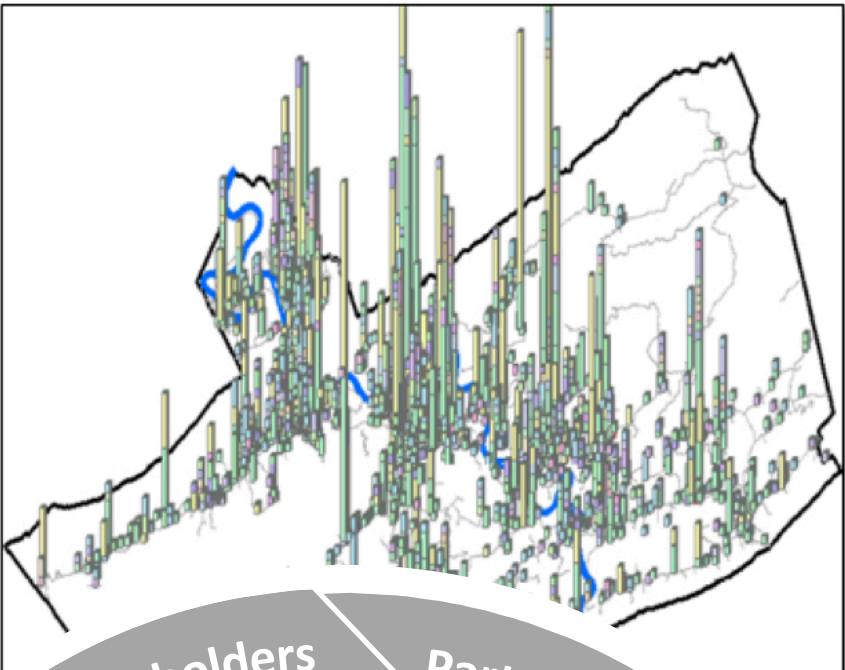
## DATA DISCOVERY: WHICH REACTIVE SERVICES ARE BEING UTILIZED?

- General District Court, Circuit Court, Jail
- Community Service, Day Report
- 911 Calls – Animal Control, Assaults, B&E, Civil Disturbance, Domestic Problem, Drunk in Public, EMS, Fire, Fight, Larceny, Mental Subject
- Department of Social Services – Child Protection, Emergency Removals, Foster Care Placements, Investigations, Relative Placements, Service Cases

## TEAM

- Local government, Cooperative Extension professionals, community stakeholders





# LINKING SERVICE REQUESTS TO LOCATION

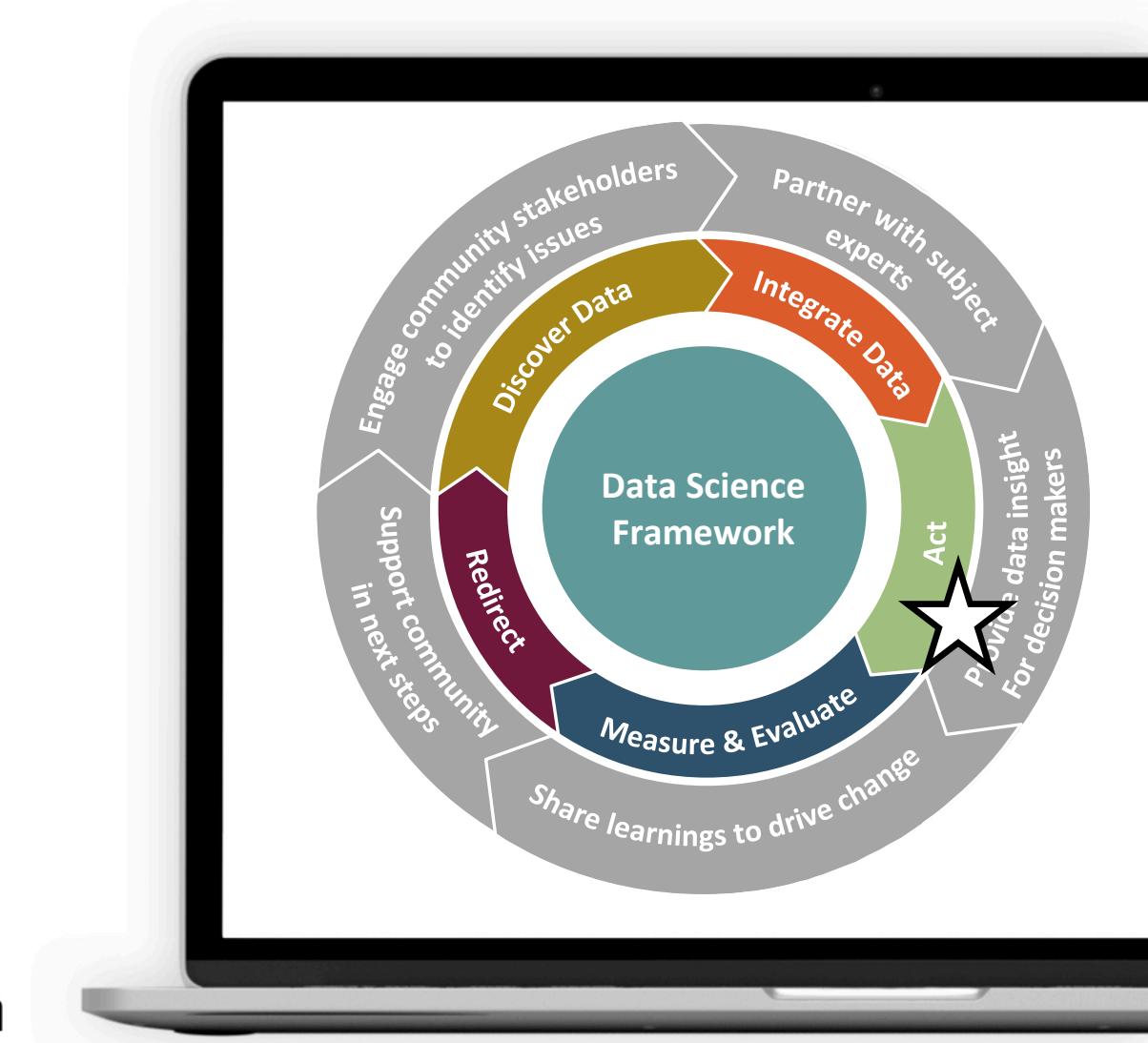
## FINDINGS

- 1% of the locations utilized 25% of the services
- 5% of the locations utilized 55% of the funding
- 10% of the locations utilized 71% of funding

GIS locations of the 5,279 reactive service requests in 2014 across the county. Color indicates the service and bar height indicates number of services at that location.

# CONSIDERING OPPORTUNITIES: TAKING ACTION

- The map identified clusters where positive change could occur through more efficient delivery of reactive services
- Cooperative Extension is helping replicate approach in another county in SW Virginia



# **GILES COUNTY F.O.C.U.S. PROGRAM**

**“FOCUS ON FAMILIES UTILIZING SERVICES”**

## **GEOGRAPHIC DATA-DRIVEN SERVICE INTERVENTIONS**

### **COUNTY DAY REPORTER CENTER AS AN ALTERNATIVE TO INCARCERATION**

- 31% reduction of recidivism rate

### **INMATE WORK PROGRAM**

- Annual increase of 15,000 hours of community service

### **TANF WORK PROGRAM**

- 44% reduction in families on TANF

### **SUMMER YOUTH WORK PROGRAM**

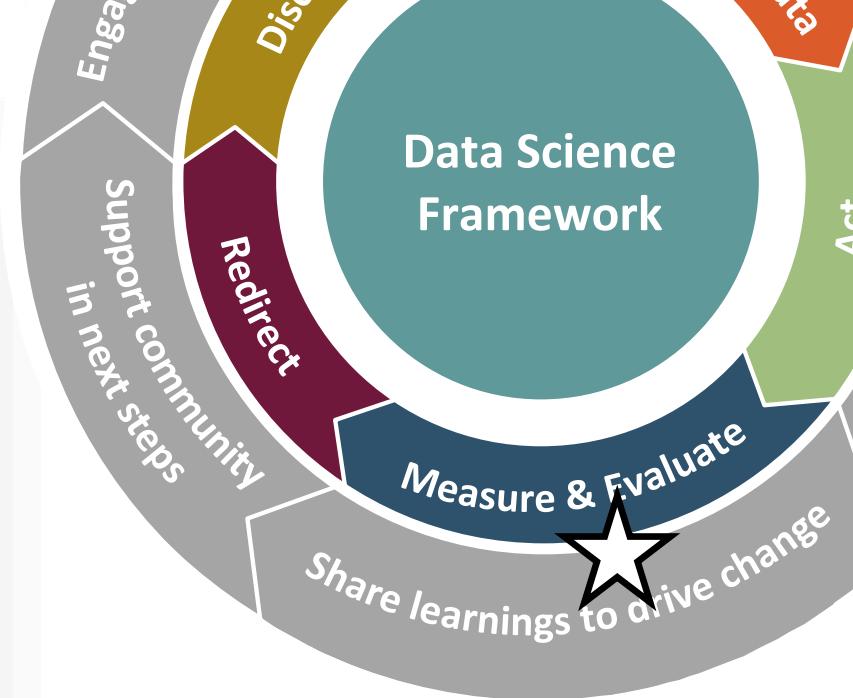
- 50 students and Over 90 local businesses are involved

### **ENHANCED PRE-KINDERGARTEN EDUCATION**

- County continues to add new slots to accommodate more children

### **ACCESS TO COMMUNITY COLLEGE EDUCATION**

- 81 new students enrolled



**TWO YEARS  
LATER:  
THE RESULTS**



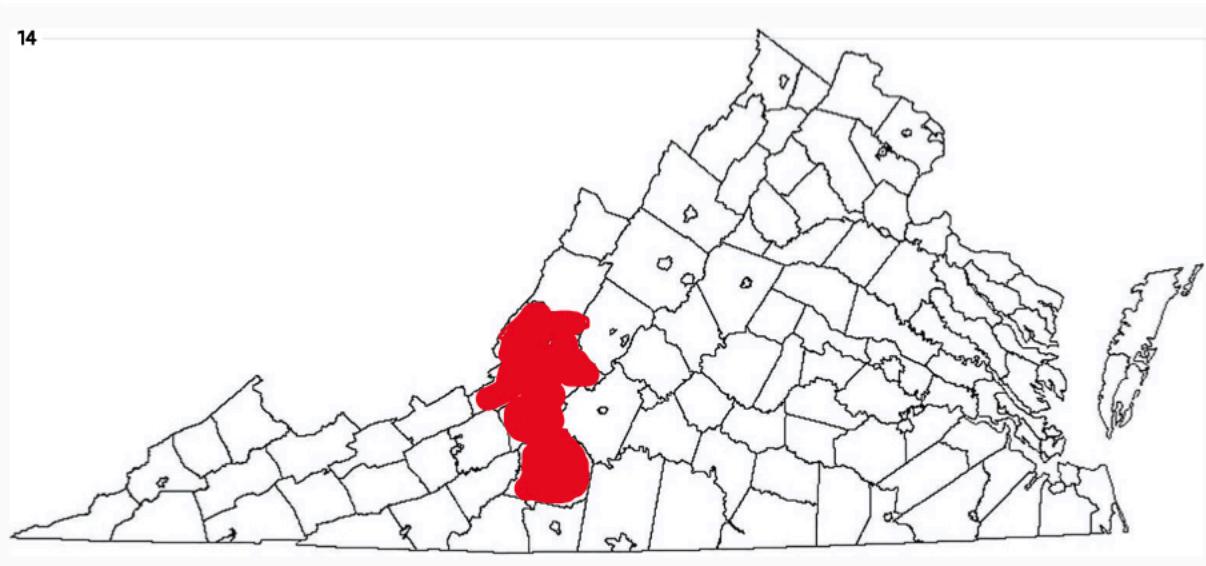
COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY

# ROANOKE VALLEY ALLEGHANY REGION (RV-AR)

# BACKGROUND

14

TOWARDS A NATIONAL COMMUNITY LEARNING NETWORK



**POPULATION:** 334,233  
**SIZE:** 2319 SQ. MILES  
**UNEMPLOYMENT RATE:** 2.5%  
**RACE:** 82% WHITE\*

\*WHITE ALONE, NOT HISPANIC OR LATINO

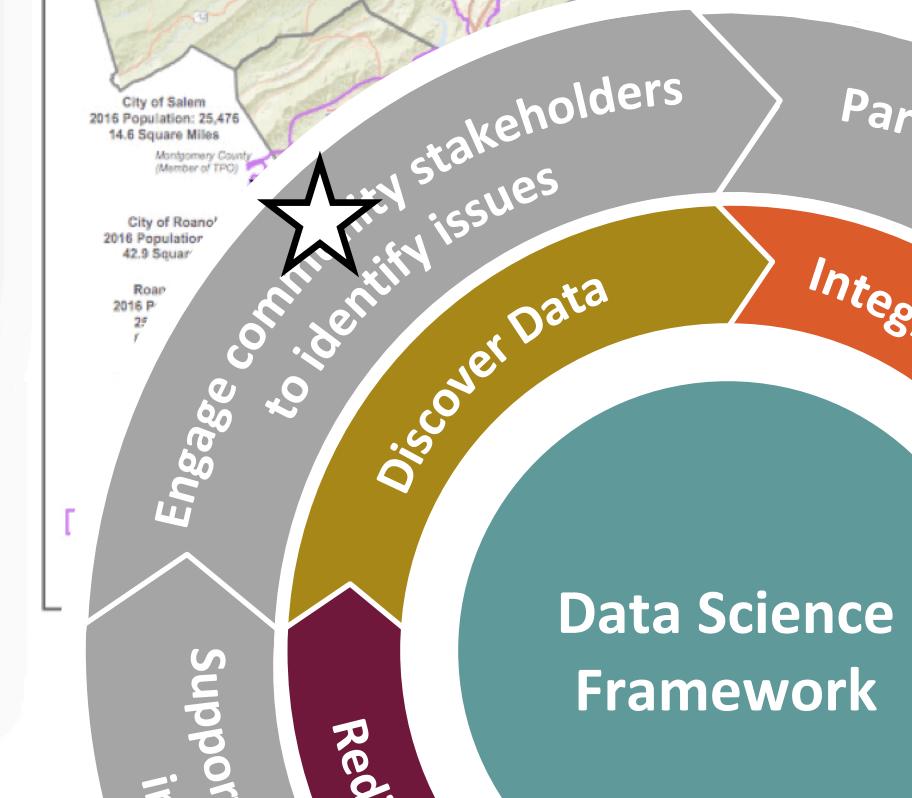
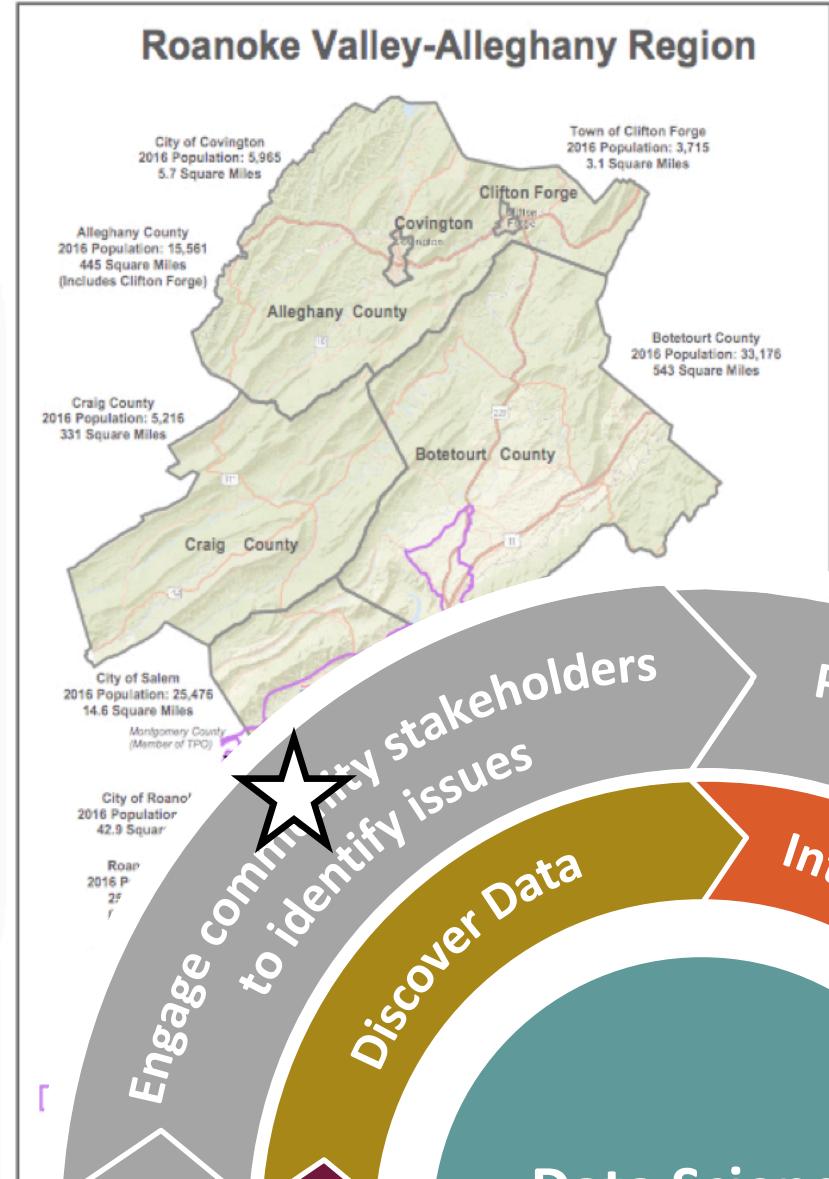
# ROANOKE VALLEY-ALLEGHANY (RV-AR) REGION COMMISSION

## ISSUE

- Despite being located near many universities, few graduates remain in the region
- RVARC would also like to attract experienced workers from other areas and retain graduating students and current workers by improving their economic mobility

## QUESTION

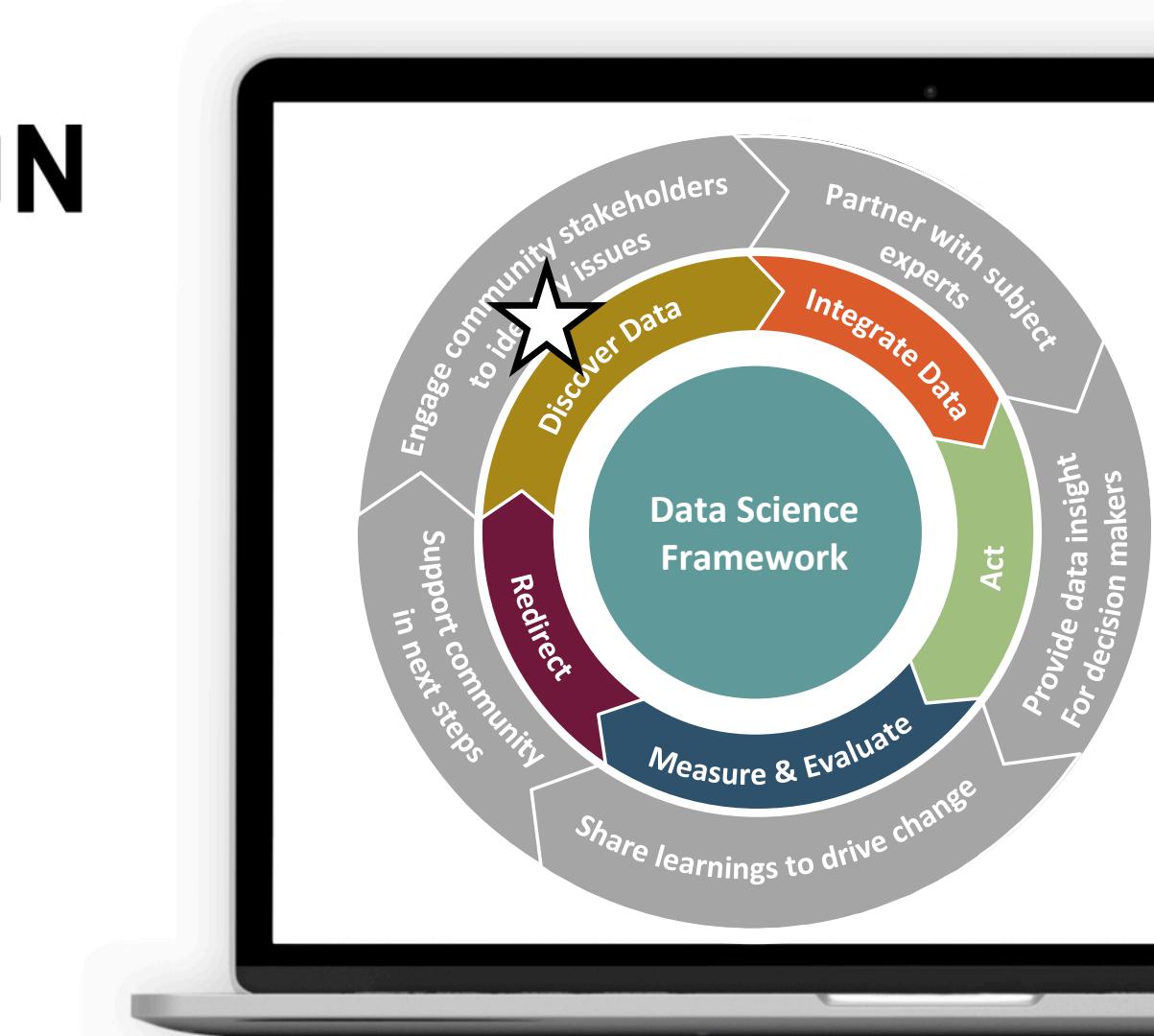
- What are the factors that make an area attractive to workers and families?



# RV-AR REGION FRAMING QUESTION

## COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY (CLD3)

- **Identify** insights from other communities
- **Explore** with Commission placing question in a data context



# WHAT DATA SOURCES MIGHT INFORM THE QUESTION?

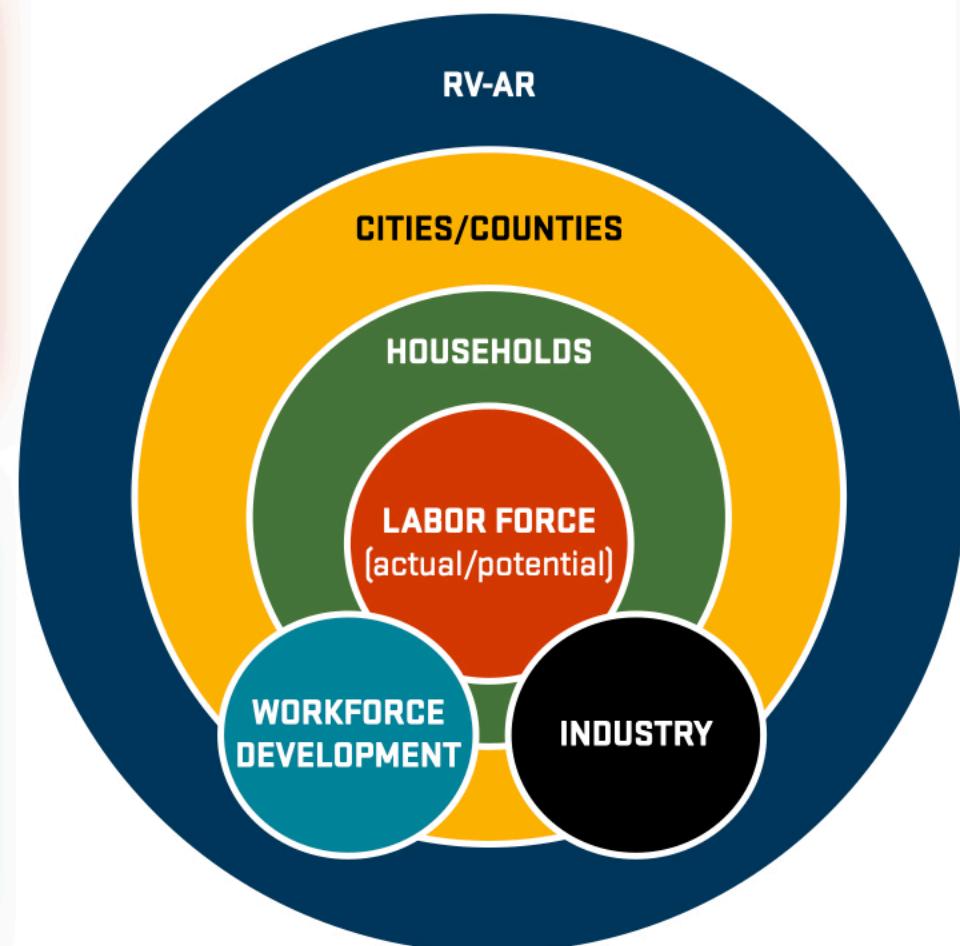
INTERNAL LABOR FORCE → REGIONAL ATTRACTIVENESS ← EXTERNAL LABOR FORCE

## WORKFORCE CHALLENGES

- Drug use
- Prisoner re-entry
- Childcare costs
- Commute times
- Job & skill match

## WORKFORCE TRAINING

- Certifications
- High school workers
- Company engagement with schools
- Job quotient



## COMMUNITY METRICS

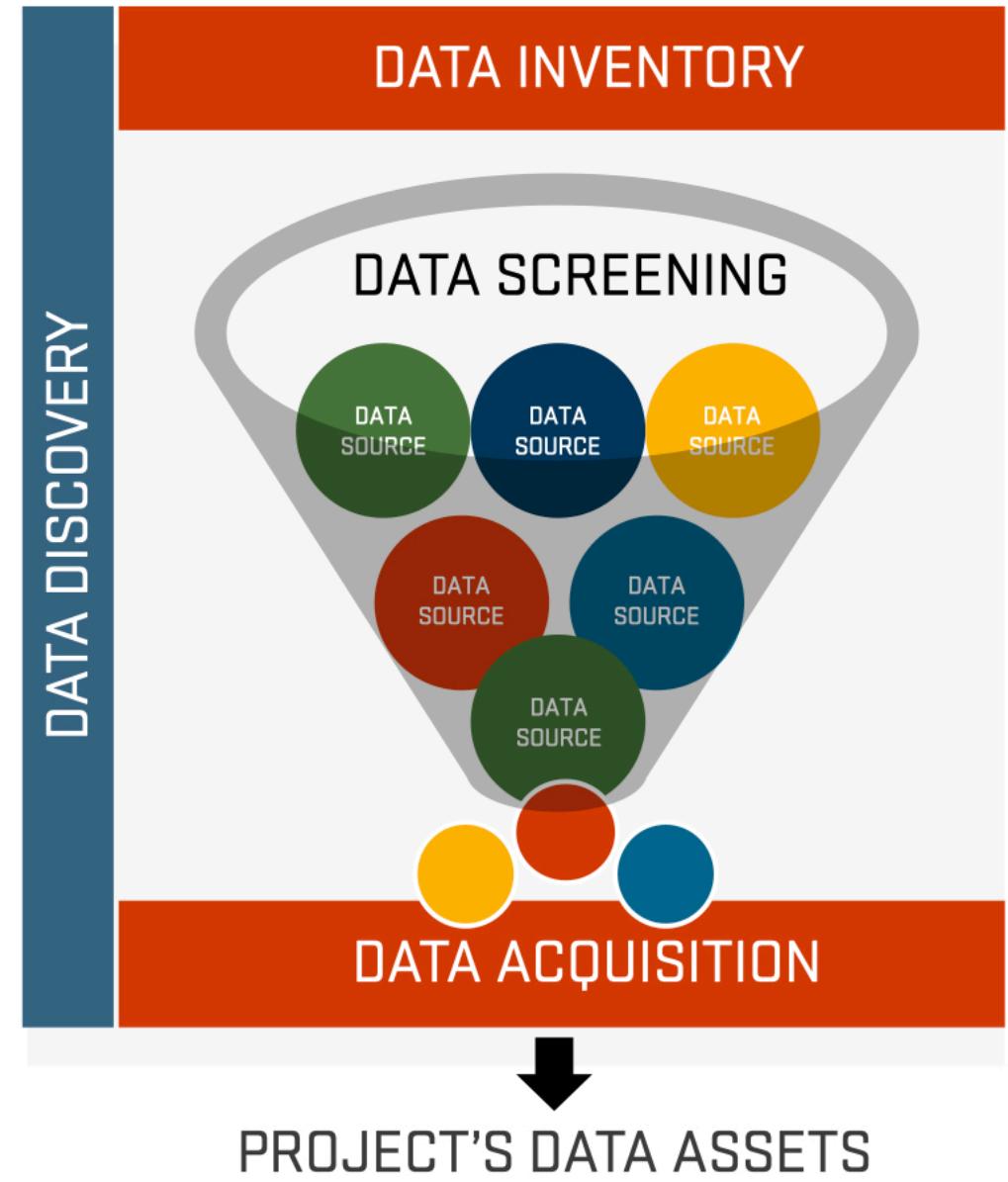
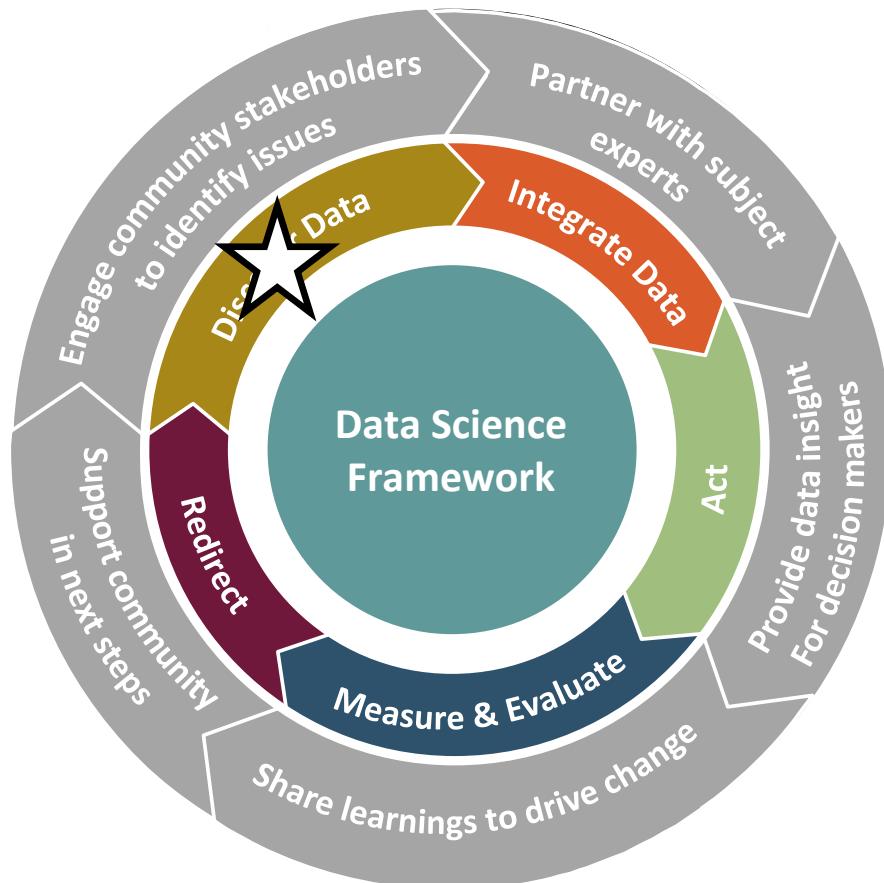
- Park access
- Walkability score
- Housing age & affordability (owned & rented)
- Cultural base
- Primary education ratings

## TRANSPORTATION

- Commute times
- % Car ownership
- % Walking, biking, public transit

\*sample data map

# MOVING FORWARD



# RV-AR REGION DATA DISCOVERY

## HS GRADUATION RATE <sup>(2)</sup>

2012: 91%

2017: 92.1%

**CHANGE: +1%**

## PERCENT DESIGNATED AS FOOD INSECURE <sup>(1)</sup>

2010: 10.8%

2016: 11.0%

**CHANGE: +1.8%**

## POPULATION <sup>(1)</sup>

2010: 330,749

2017: 334,781

**CHANGE: +1.2%**

## TOP 5 EMPLOYERS <sup>(4)</sup>

1. Roanoke Memorial Hospital
2. Roanoke County School Board
3. U.S. Dept. of Veteran Affairs
4. Kroger
5. HCA Virginia Health System

## ACCESS TO PARKS <sup>(5)</sup>

2010: 24.8%

2015: 51.3%

**CHANGE: +107.2%**

## PERCENT UNEMPLOYMENT <sup>(4)</sup>

2010: 8.01%

2017: 4.3%

**CHANGE: -46.0%**

## OBESITY RATE <sup>(6)</sup>

2010: 28.9%

2014: 28.7%

**CHANGE: -0.5%**

## MEDIAN INCOME <sup>(1)</sup>

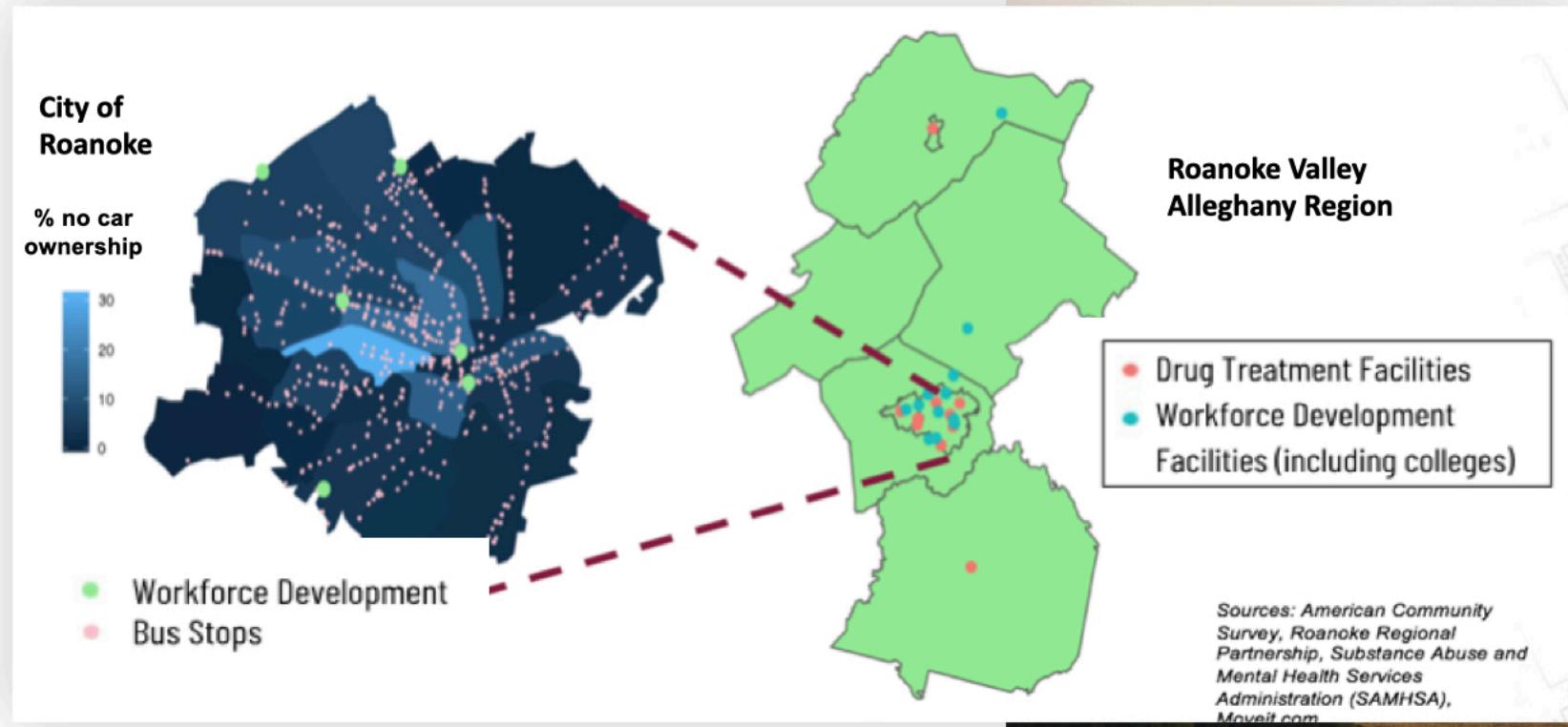
2010: \$48,087

2016: \$47,855

**CHANGE: -0.5%**

Sources: [1] American Community Survey 2006-2010; 2010-2015; [2] Virginia Department of Education; [3] Feeding America; [4] Virginia Labor Information; [5] CDC National Environmental Public Health Tracking Network (% people living within half mile of park); and, [6] RWJF County Health Rankings

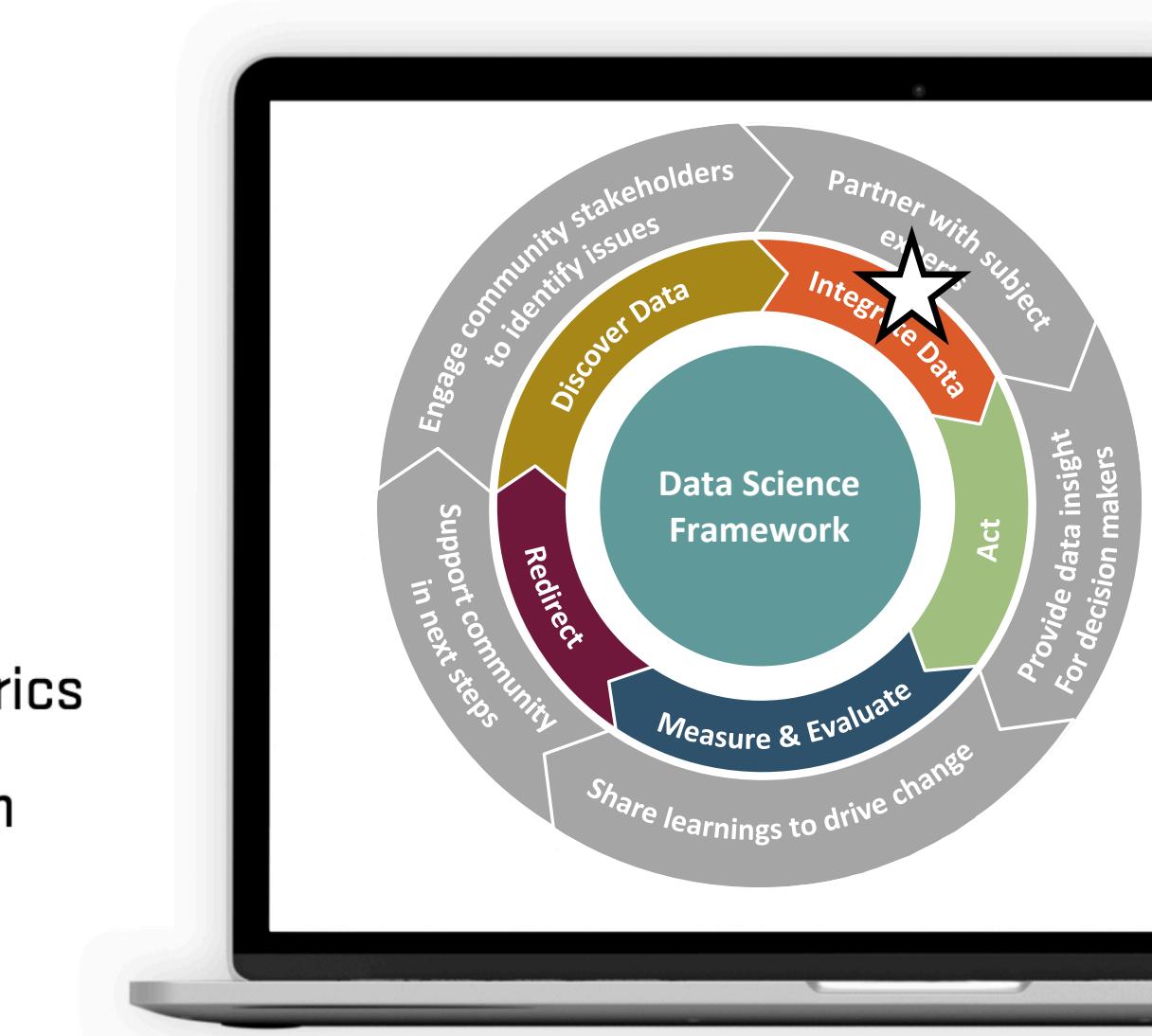
# DATA DISCOVERY: MAPPING ACCESS



# FORMULATING DATA INSIGHTS

## COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY (CLD3)

- **Explore** with commission useful metrics
- **Integrate** important data/information



# ATTRACTIVENESS COMPOSITE INDICATOR

## TRANSPORTATION

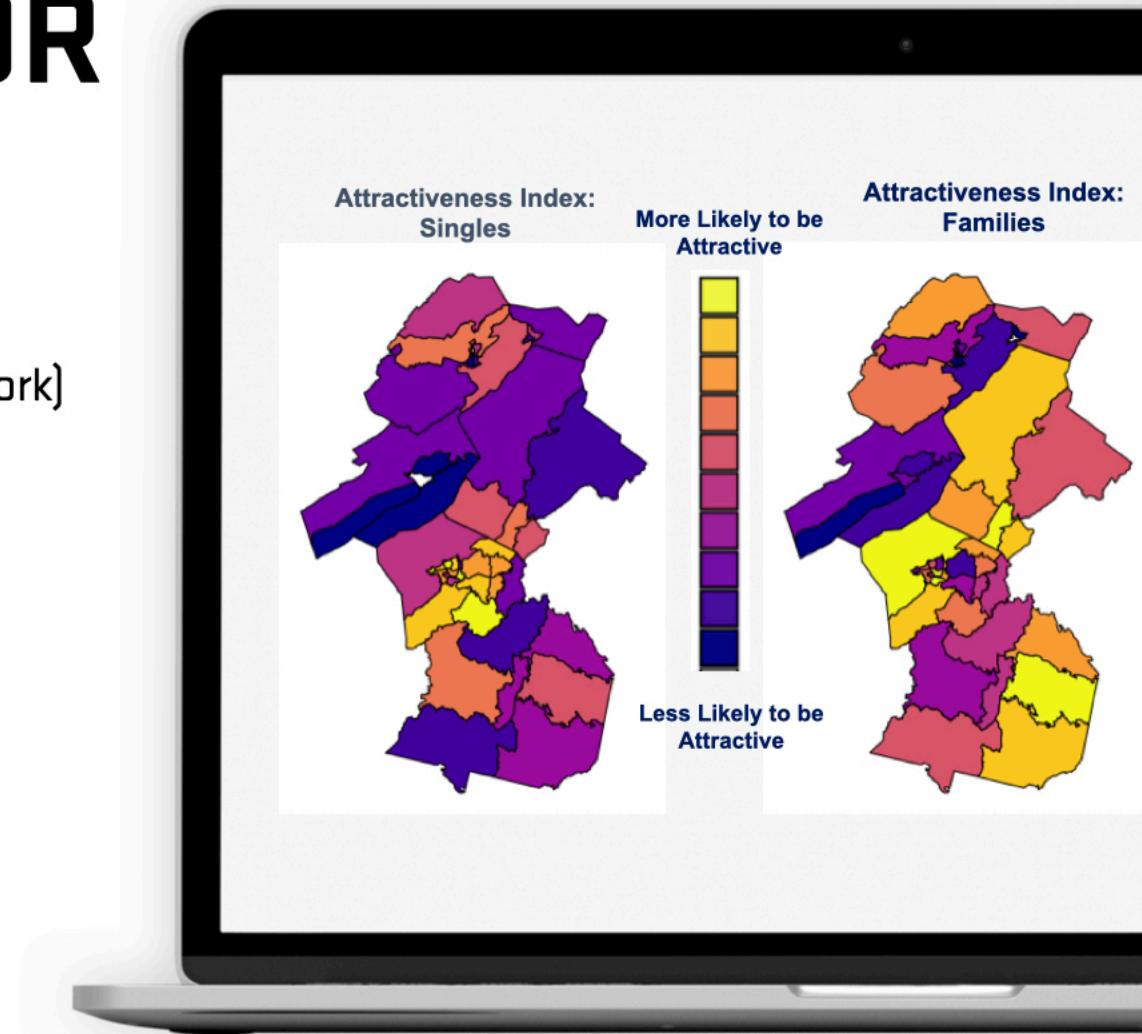
- Commute Times (% < 1 hour)
- Vehicle Ownership (% own a vehicle)
- Public Transportation (% public transit is primary means to work)

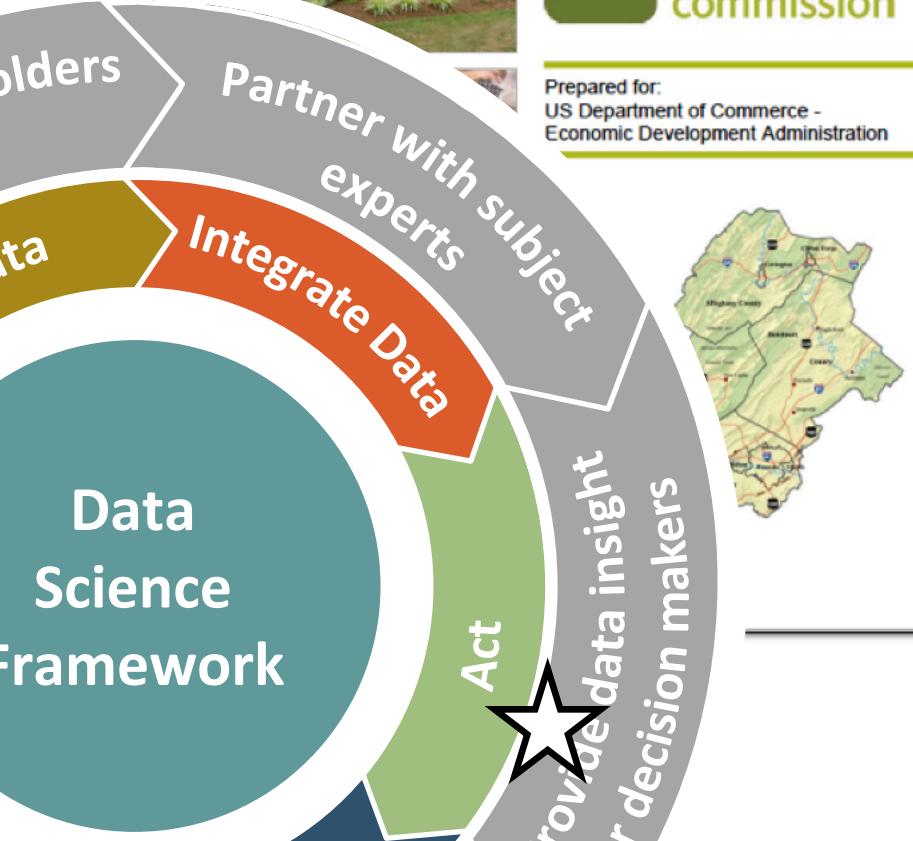
## HOUSING

- Size of Home (% 3+ bedrooms)
- Type of Home (% apartments/single family homes)
- Age of Home (% built after 1990)

## COMMUNITY

- Resident Type (% renters / owners)
- Family Presence (% singles / families)
- Diversity (% non-white)
- Employment (% employed)
- Active Post-Secondary (% enrolled in college)





# POLICY ACTIONS

## TRANSPORTATION

- Development of a Regional Transit Vision and Demand Management Plan

## HOUSING

- Develop plan to rehabilitate housing

## COMMUNITY

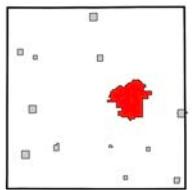
- Involvement in planning
- Increasing workforce credential opportunities at community colleges
- Recruit businesses to the area and encourage entrepreneurship
- Continue expansion of outdoor greenways



COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY

# MARSHALLTOWN, IA

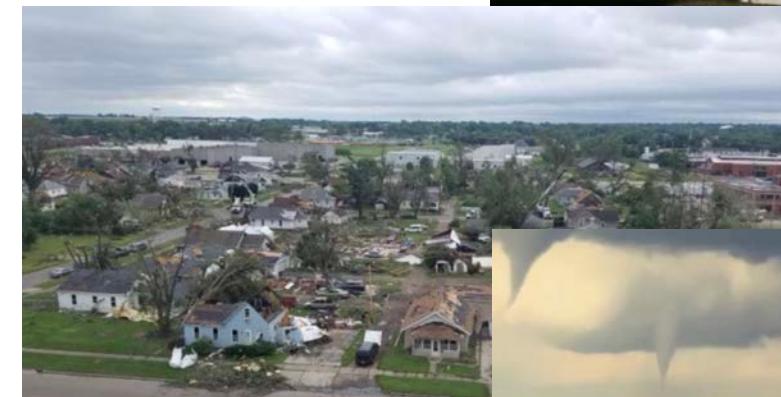
# BACKGROUND



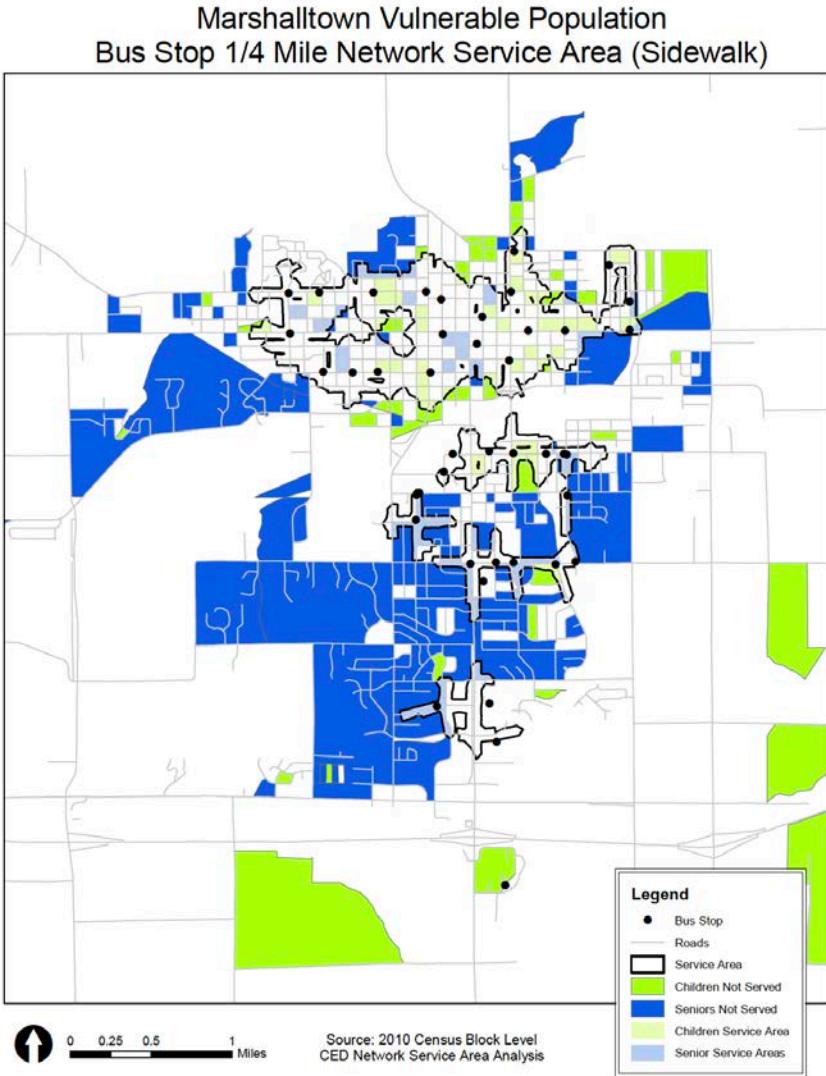
2015 Population: 27,770  
Size: **19.28** sq. mi.

**2000 Census % Hispanic:** 12.6%  
**2010 Census % Hispanic:** 24.1%  
**2015 5yr ACS % Hispanic:** 27.3%

**OVERARCHING GOAL:**  
Better understand community demographics  
and bus use so city leadership could identify  
ways to increase ridership of public bussing.



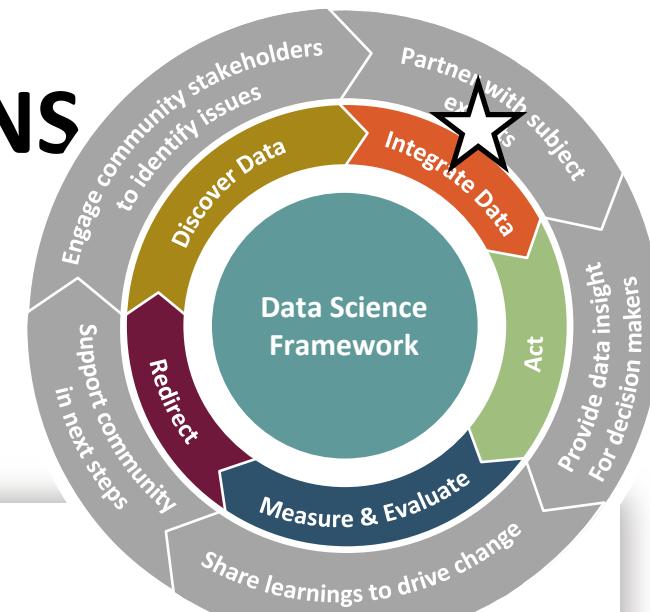
# LINKING TRANSPORTATION ROUTES TO INFORMATION ON VULNERABLE POPULATIONS

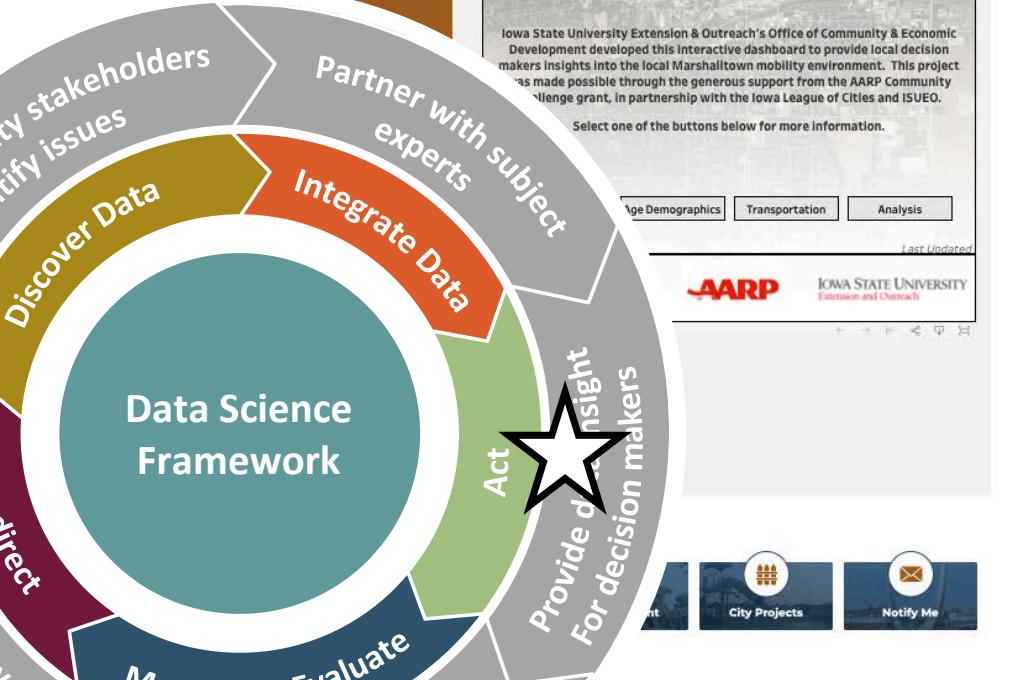


## FINDINGS

Local transportation systems are crucial to mobility, commerce, public safety, quality of life, community vitality, and economic development.

Using mapping techniques, neighborhoods were identified that were in greater need of bus routes. In particular, elderly and minority citizens were being underserved.





# ACTIONS TAKEN

AARP Community Challenge Grant with Iowa League of Cities. CED took action!

## Additional Funds to Support Public Access to Data Resources

A new DSPG Data-Driven Dashboard provided Marshalltown citizens up-to-date information about their town.

Supports the work of the city council and other local government.

# AWARD WINNING PROJECT

The map identified locations where new bus routes could provide improve transportation access to vulnerable groups. Marshalltown took action!



At the conclusion of the CLD3 project, Kevin Pigors, Marshalltown Municipal Transit Administrator and his team (right) received the [Federal Transit Authority Award of Excellence](#) and the [Iowa Transit Authority Award of Excellence](#) for highest percentage increase in ridership among rural transit providers (11% or 9,825 riders).



COMMUNITY LEARNING THROUGH DATA DRIVEN DISCOVERY

# QUESTIONS?