

# Community Capacity Building: How to Trigger a Smart Cities Mindset

Randall H. Reid  
Session Facilitator





- Purpose of today's session: strategy and mindset
- Framing the discussion
- Examples from four jurisdictions
- Your questions

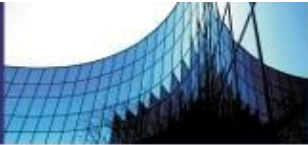
# Today's Presenters

**Amy L. Ahner**, Director of Administrative Services, Village of Glenview, IL

**Scott Adams**, City Manager, Las Vegas, NV

**Michelle Crandall**, Assistant City Manager, City of Dublin, OH

**Andrew Pederson**, Village Manager, Bayside, WI



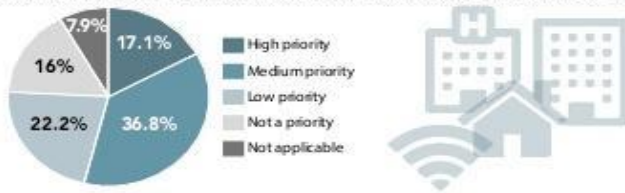
**INTRODUCTION**

The International City/County Management Association (ICMA) conducted a survey in partnership with the Smart Cities Council to learn more about the priorities and activities of U.S. local governments related to smart-city technologies. The Smart Cities Council defines smart cities as communities that use information and communication technology to enhance livability, workability, and sustainability. Launched in the spring of 2016, the survey was sent to 3,423 U.S. local governments with populations of 25,000 or greater. Responses were received from 493 jurisdictions yielding a response rate of 14.4%.

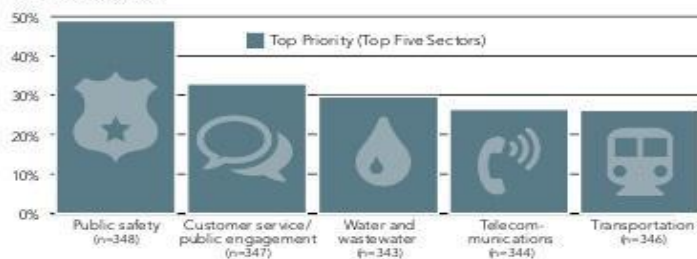
**SURVEY HIGHLIGHTS**

- **Smart City Activities are a Higher Priority for Larger Communities than Smaller Communities.** There is a positive correlation between jurisdictions' population size and the prioritization of smart city activities. Overall, survey respondents most frequently identified smart city activities as a medium priority.
- **Smart City Technologies Represents the Highest Priority for Public Safety.** Public safety is indicated as the sector that smart city technologies represent top priority by the 48.9% of the respondents, which is followed by customer service/public engagement and telecommunications.
- **Communities are More Active with Smart City Technologies on Smart Payments and Finance.** 59.5% of the respondents identified that they are actively deploying smart payments and finance technologies. Civic engagement and energy are the other technology areas that respondents are active. Communities are not active in public safety area much even though it was selected as the top priority for smart city technologies.

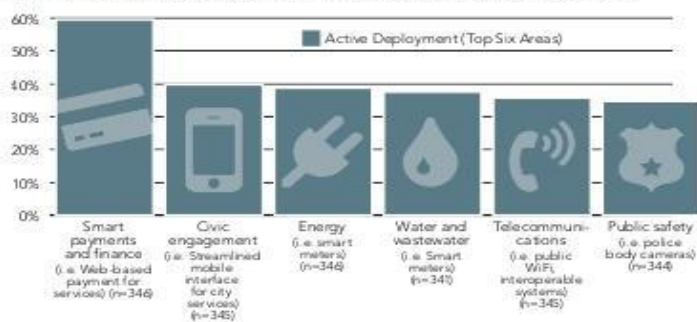
How would you characterize your community's overall commitment to smart cities? (n=468)



For each of the following sectors, what level of priority do smart city technologies represent for your community?



What is your community's current level of engagement with smart city technologies?



In 2016 ICMA conducted a smart cities survey.

It identified these barriers to smart city strategies:

- 1) Too reliant on legacy systems
- 2) Need more technical expertise
- 3) Need more supporting infrastructure
- 4) Need more internal capacity
- 5) Budget limitations.

# Smart Solutions – Basic Infrastructure

## E-Governance and Citizen Services

- 1 Public Information, Grievance Redressal
- 2 Electronic Service Delivery
- 3 Citizen Engagement
- 4 Citizens - City's Eyes and Ears
- 5 Video Crime Monitoring

## Waste Management

- 6 Waste to Energy & fuel
- 7 Waste to Compost
- 8 Every Drop to be Treated
- 9 Treatment of C&D Waste

## Water Management

- 10 Smart meters & management
- 11 Leakage Identification, Preventive Maint.
- 12 Water Quality Monitoring



## Energy Management

- 13 Smart Meters & Management
- 14 Renewable Sources of Energy
- 15 Energy Efficient & Green Buildings

## Urban Mobility

- 16 Smart Parking
- 17 Intelligent Traffic Management
- 18 Integrated Multi-Modal Transport

## Others

- 19 Tele-Medicine
- 20 Incubation/Trade Facilitation Centers
- 21 Skill Development Centers

We are using the definition  
from the Smart Cities Council  
(SCC; [www.smartcitiescouncil.com](http://www.smartcitiescouncil.com)):

*“A smart city uses information and communications technology (ICT) to enhance its livability, workability, and sustainability.”*



Two critical factors for the success of smart technology deployment:

1. a well-articulated future vision for your community
2. a strategy to implement the vision with the support of stakeholders and citizens.

1. Vision

2. Plan

3. Design

4. Build

5. Deliver

6. Operate

Develop the Smart City strategy and business cases.

Develop the project plans and quality objectives.

Gather business requirements and design smart city services.

Implement and test smart city services.

Prepare business transition for smart city services.

Actual operation and support of smart city services.

# Smart Thinking Is Strategic

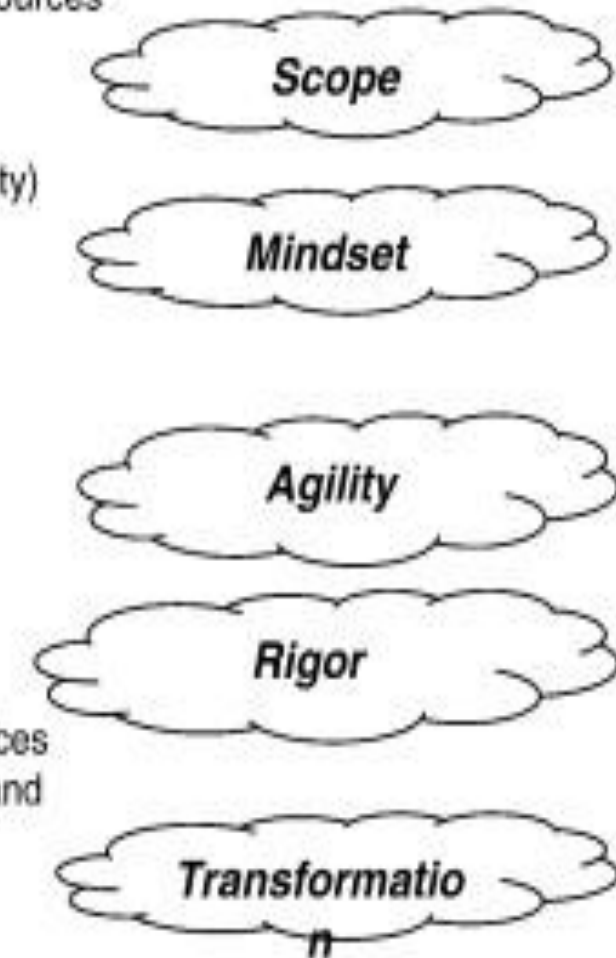
## Strategy levels Strategic steps



## Dimensions

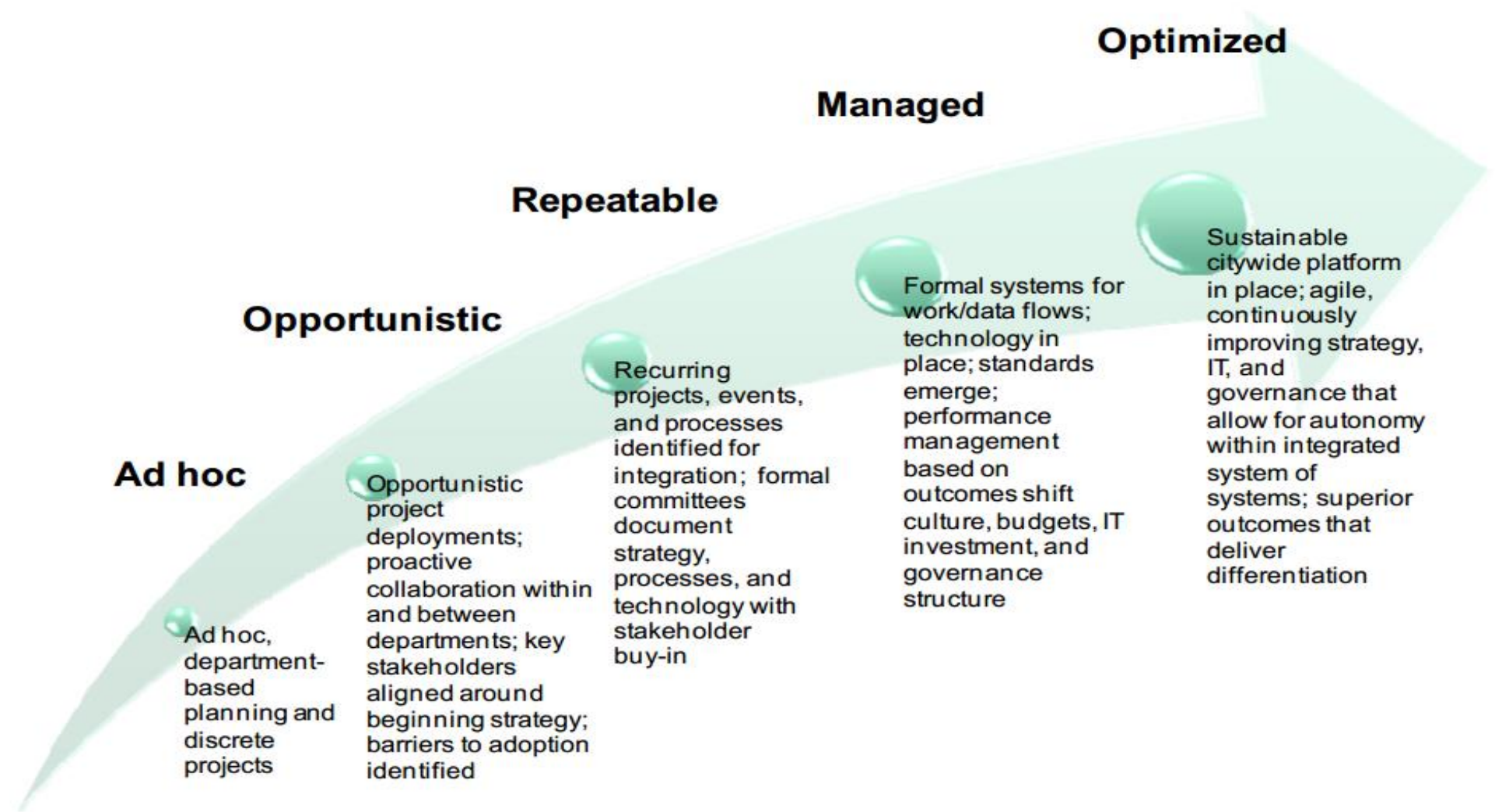
- Objectives, mission vision values, resources
- Political sponsorship
- Leadership
- Diversity of actors (ecosystemic diversity)
- Collective intelligence
- Integration of resources
- Users co-creation
- Legitimicy
- Integration, iteration, convergence
- Action plan
- Projects
- Enabler /transformative role: new services for citizens, enterprises, governments and cities
- A mean rather than an objective

## Focus

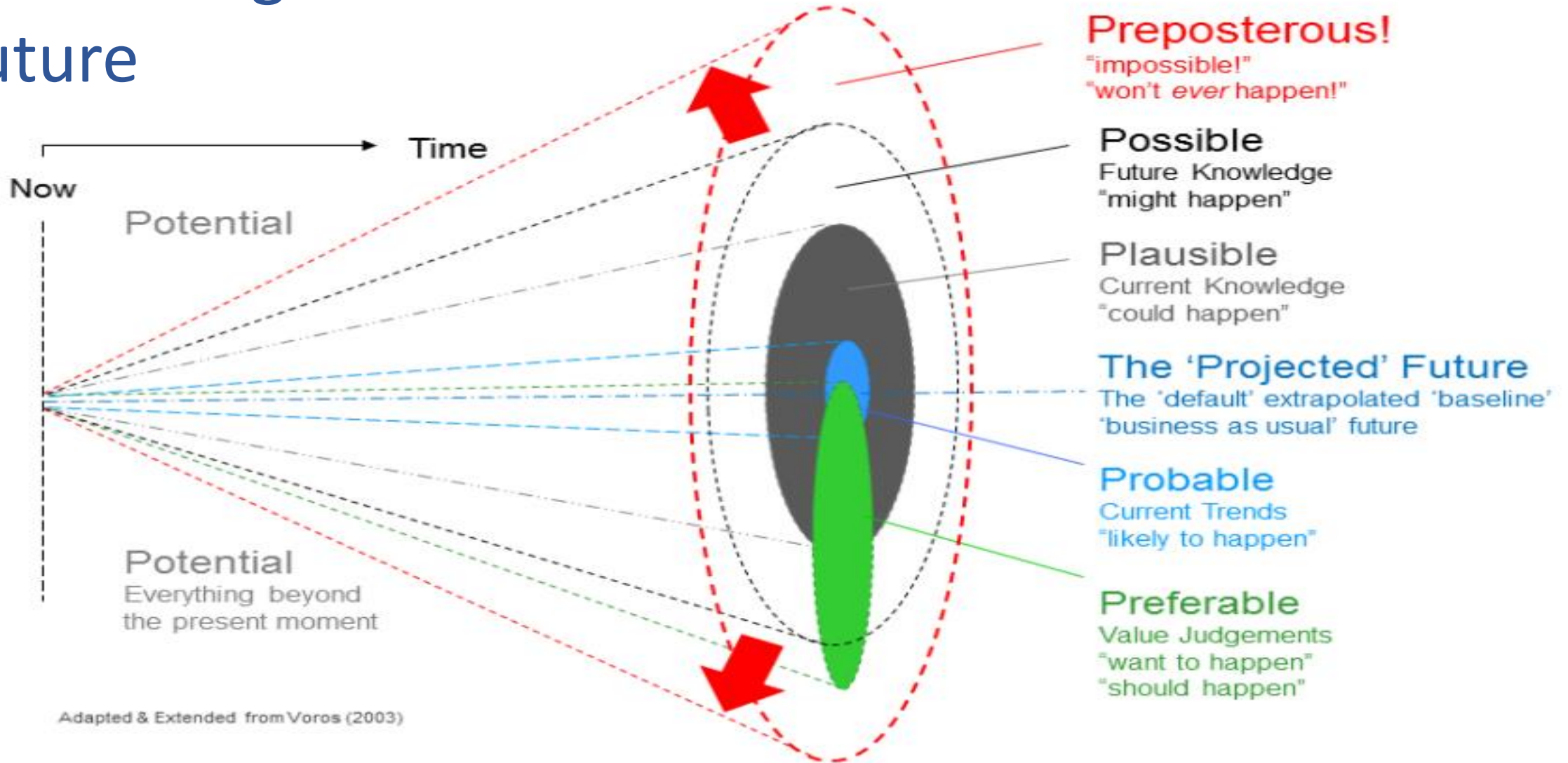




# Stages in Smart City Development



# Forecasting Your Smart Future



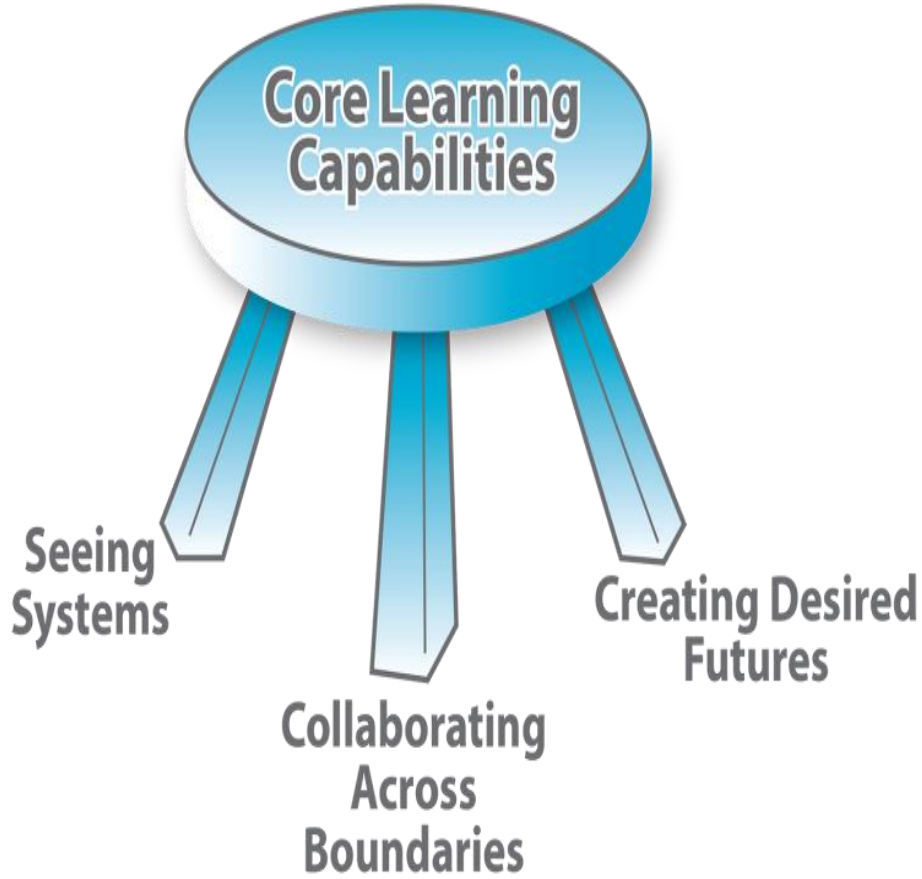
Adapted & Extended from Voros (2003)

# So what are the skill sets of local “smart” leaders?

- **Vision:** Understanding the challenges and opportunities posed by technology
- **Planning:** Incorporating smart community considerations into strategic discussions and goal setting with department heads and elected officials
- **Leadership:** Exhibiting a willingness to stand at the vanguard of implementation for new approaches to service delivery or organizational management
- **Collaboration:** Identifying and fostering relationships with other key stakeholders
- **Commitment:** Sticking with the larger concept, even as individual ideas may not prove successful
- **Ethics:** Maintaining an equitable and open process for rolling out services to various neighborhoods and demographic groups.



# Capacity Building Is Smart Change



# Smart City Strategies for Smaller Communities: Glenview, IL

Amy L. Ahner

Director of Administrative Services

ICMA Conference Presenter

- ❑ SMART PROJECTS
- ❑ NEXT PRACTICES





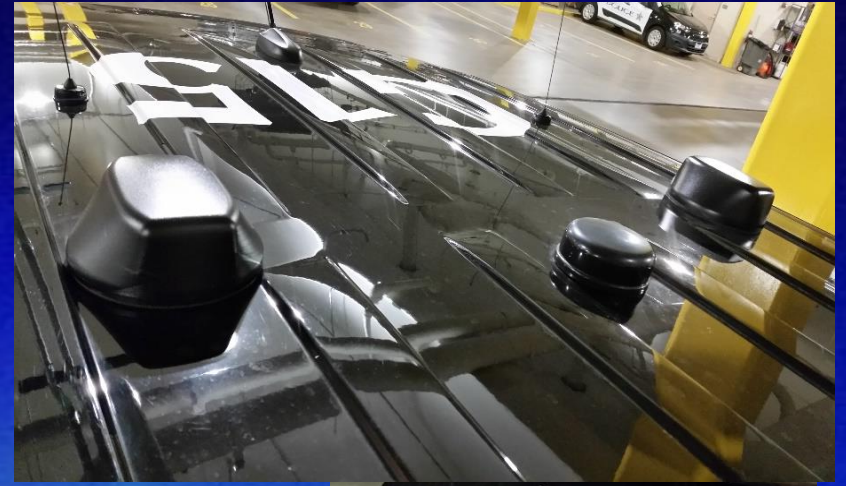
# Smart Mobile Public Safety Vehicles

**Issue:** *Maintain computer connectivity while on patrol*

**Vision:** *Improve performance*

## **Results:**

- ✓ *Police and IT team created and tested*
- ✓ *Dual wireless carrier solution*
- ✓ *Improved service delivery by not dropping network connectivity and increased visibility and response*
- ✓ *Improved equipment reliability increased staff reliance*
- ✓ *Established budget for entire fleet*
- ✓ *Monitor and track vehicle location*





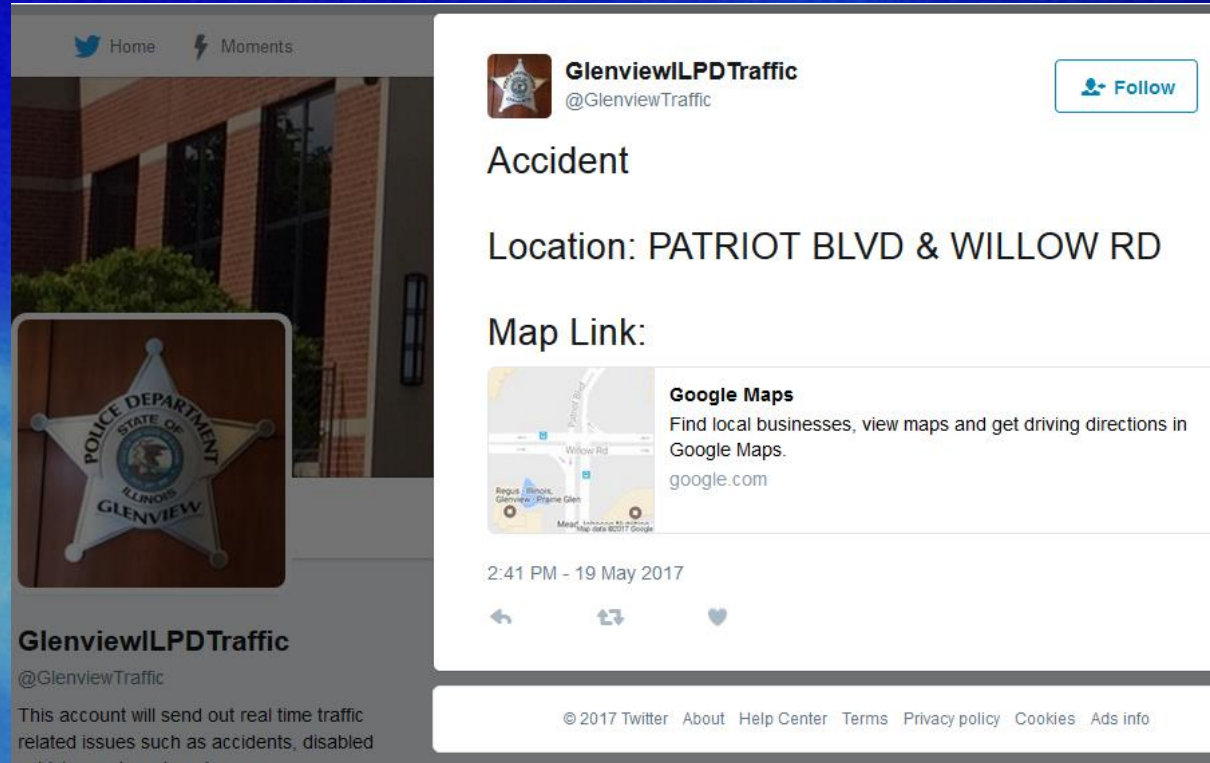
# Traffic Alerts pushed to Twitter

**Issue:** Inform public of accident locations

**Vision:** Avoid backups at key intersections

**Results:**

- ✓ Tweet CAD Calls through Twitter and Google Maps
- ✓ Shared tool with other dispatch partner communities
- ✓ Inform community about water main breaks





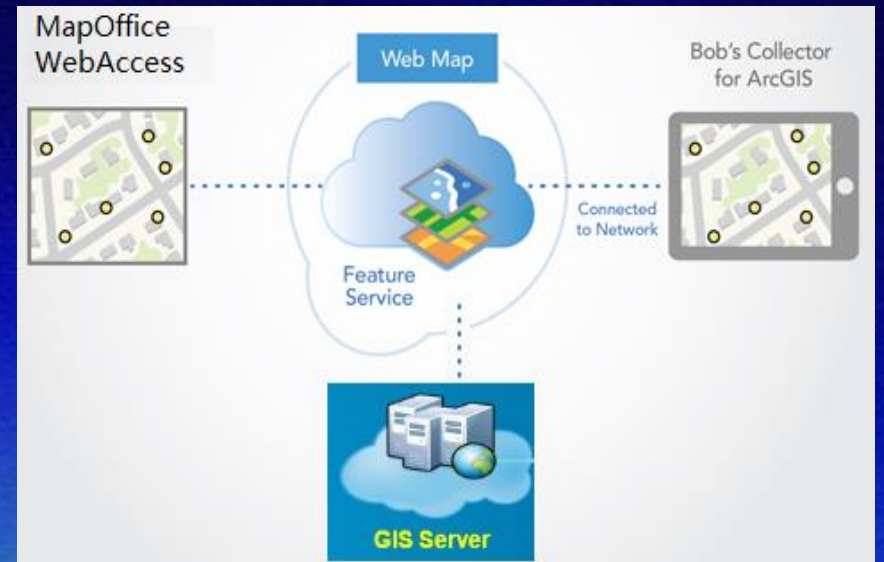
# Mobile Infrastructure Records Management

**Issue:** Eliminate duplicate paper map update

**Vision:** Enable field staff to update GIS infrastructure data

## Results:

- ✓ Use phone or iPad and ArcGIS Collector App in field
- ✓ Real time updates
- ✓ Improves data integrity
- ✓ Increased employee engagement in updates with tools



PW Apps

Open App

Sign In

Enter Credentials Here

Select Map

Add a record or select an existing point to view historical records.

Collect here

Zoom to

Show details

Cancel

Enter maintenance info here.



# Next Practices

## □ ENGAGE VENDORS

## □ LEVERAGE BUDGET

- FIELD DATA UPDATE CAN BE DONE WITH INEXPENSIVE DEVICES
- SMART TECHNOLOGY REALIGNMENT

## □ UPDATE POLICIES

- APPROPRIATE USE FOR CELL PHONES, COMPUTERS, AND ELECTRONIC COMMUNICATIONS
- APPROPRIATE BOUNDARIES FOR BIG DATA
- ALIGN DATA INSIGHTS WITH POLICY RESPONSE

## □ RE-SHAPE IT STRATEGIC PLAN

- IDENTIFY WHAT TO MAKE SMART
- OUTLINE HOW TO INTEGRATE AND SECURE DATA
- STRATEGIZE HOW TO USE OPEN STANDARDS
- PLAN ON HOW TO MERGE DATA, SENSORS AND MAPS

# Project Prioritization Methodology



Objective	Requestor	Efficiency	Risk Management	Impact / Size of Affected User Group	Frequency of Recurrence of Issue	Score	Status of Project
<b>Project Objective 6</b>							
Smart City Initiatives							
<i>Energy Conservation, Asset Management, AMI, Parking, Traffic Incidents, Landscape Sprinklers, Charging Stations</i>							
Customer Water Use Monitoring Portal	AS/PW	5	2	5	5	64	RFP released and contract awarded to WaterSmart with a Q3 2017 customer Go-Live
Integration of Smart City Initiatives	AS/PW	5	2	5	5	64	Implemented Heritage Tree Program civic engagement project, Available Properties economic development projects and Twitter 911 integration for traffic alerts ✓

Driver	Weight	Driver
<b>Risk Management (IT Only)</b>	1 – Issue / goal will have minor positive impacts on network/infrastructure securities	N/A
	2 - Issue / goal will have some positive impacts on network/infrastructure securities	
	3 - Issue / goal will have significant positive impacts on network/infrastructure securities	
Efficiency	1 – Limited improvements to efficiency 3 - Moderately improves efficiency 5 – Significantly improves efficiency	5
Impact / Size of Affected User Group	1 - Impacts one user/very small group 3 - Impacts user group within department 4 - Impacts a department 5 - Impacts multiple departments/entire Village	4
Frequency of Recurrence of Issue	1 - Small (Low Frequency, etc.) 3 - Moderate (Semi-Regular Frequency, etc.) 5 - Significant (Daily, Work-Impeding Frequency, etc.)	3

# Fostering Innovation to Build a Smart City Culture

- Innovation Team
- Innovation District
- Projects

WELCOME TO  
LAS VEGAS



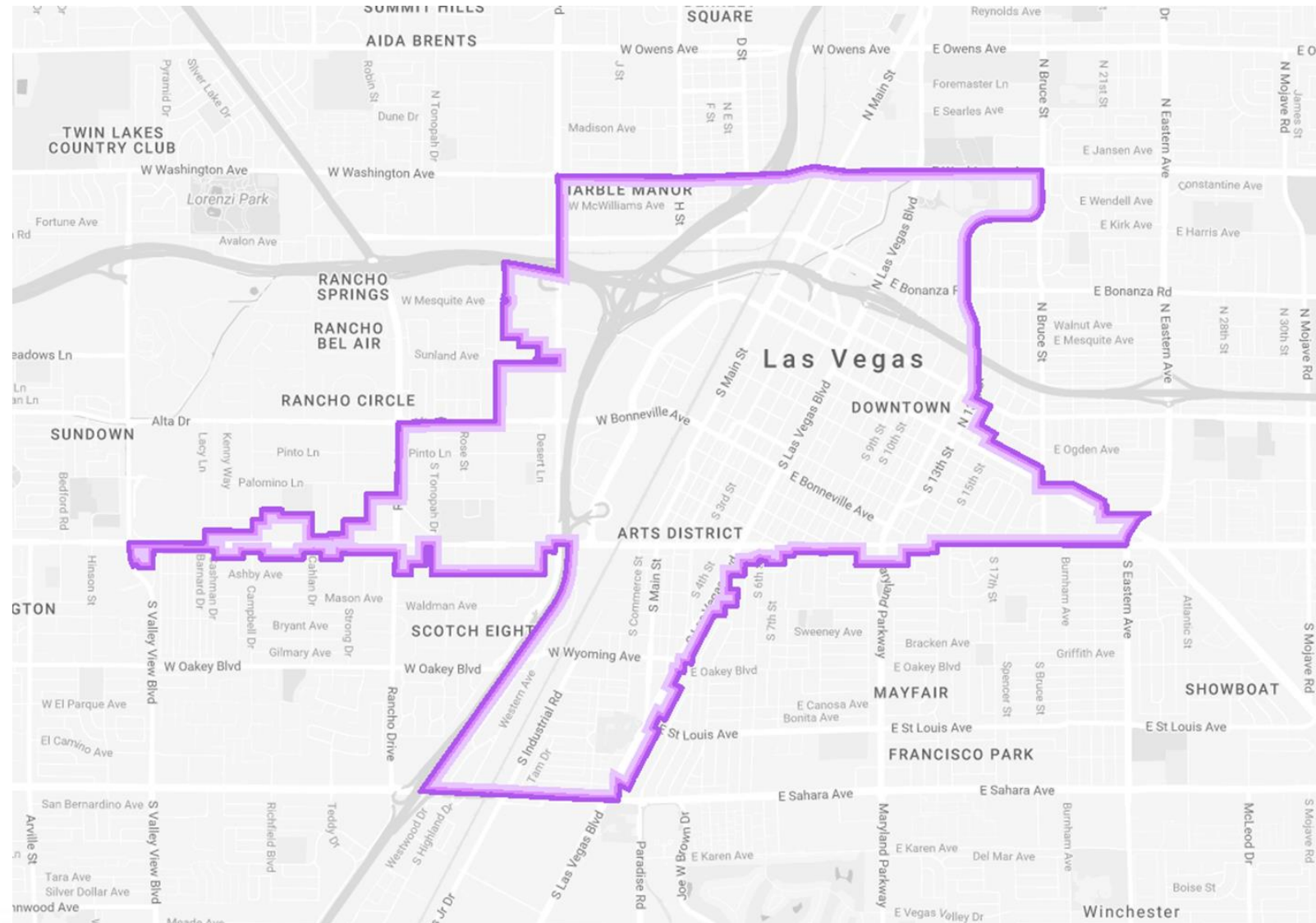
# Innovation Team

- Cross-departmental:  
IT; Public Works; Planning; Communications; Econ. Dev.
- Team Leader
- Organic (Bottom up - not top down)
- Philosophy – Innovation is everyone's job, not just one person
- May need Officer due to levels of activity requiring coordination
- Need a next level strategy: Working off Smart City Application



# Innovation District

- Downtown Las Vegas
- Focus on traditional city infrastructure looking forward
- [www.innovate.vegas.com](http://www.innovate.vegas.com)



# Select Projects – App Development

- City LV Mobile – iPhone and Android (\$30k)
- Amazon Echo – Alexa (Staff time)
- Apple TV Channel (\$50k)
- Single User ID  
(GoVegas Ecosystem)



# Select Projects - Infrastructure

- WIFI in parks and downtown
- Air quality monitoring (\$2,000 per sensor, per year)
- Smart street infrastructure – Motionloft (\$2,500 per sensor, per year)

## Challenges & Measuring Results



Using Innovation to Make Life Better



**Appendix: An appendix describing more than 20 projects is available in the handouts for this session.**





# Intelligent Deployment of Smart Technology

City of Dublin, Ohio, USA  
Michelle Crandall, Assistant City Manager



# Dublink - Broadband Deployment

## What is Dublink?

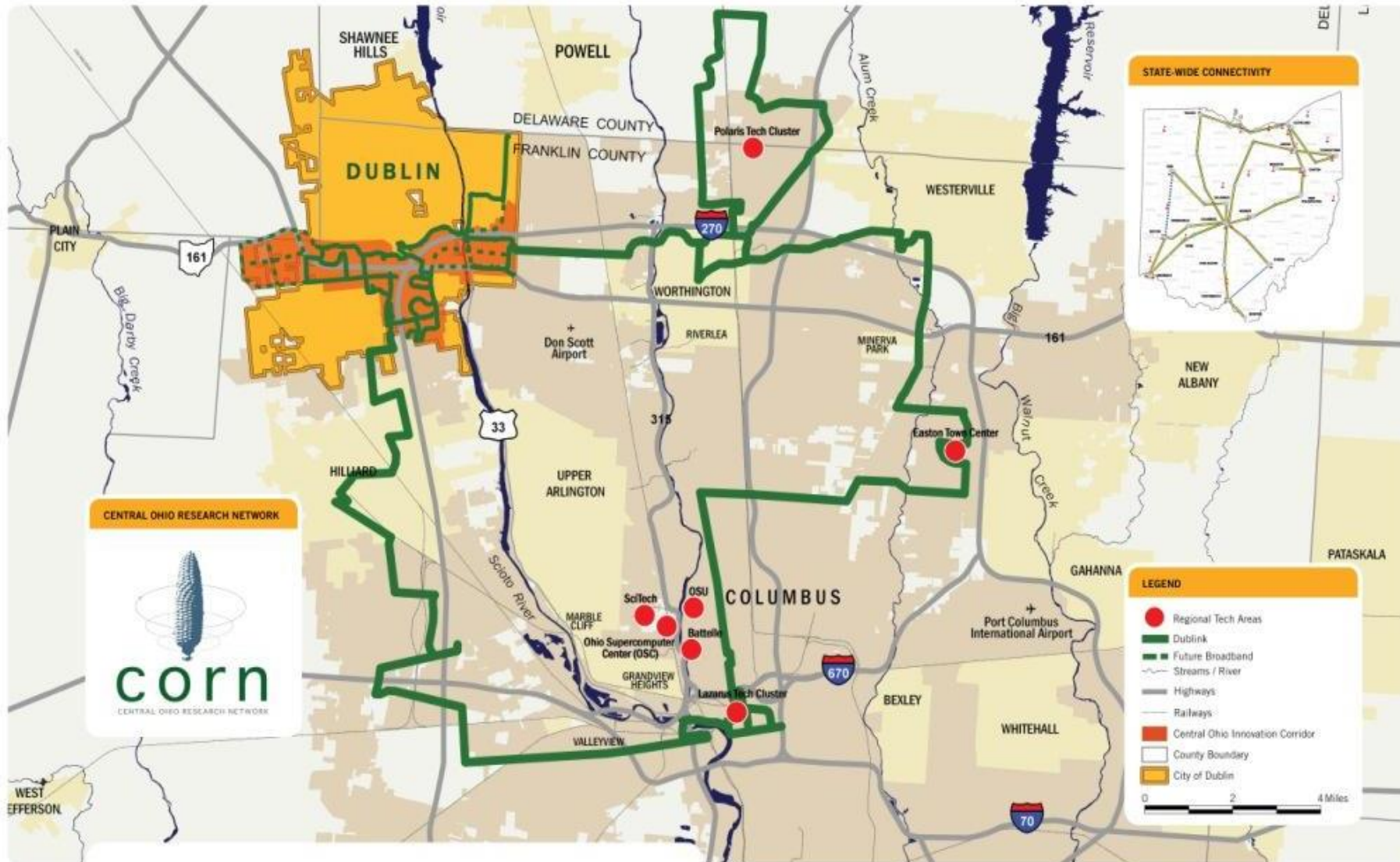
- City-owned 100-gig fiber optic network
- 25 miles within Dublin corporate areas
- 100 miles of connection outside Dublin

## How Does It Work?

- Providers lease space/fiber
- Links Dublin businesses to Data Center
- Choice of connection to most providers
- Access to OARnet, OSU Super Computers and a GENI rack.



# Smart Infrastructure - Dublink



# US 33 Smart Mobility/Autonomous Vehicle Corridor

## 35-mile Corridor

- Home to 50+ automotive-related companies including Honda manufacturing and R&D and the Ohio State University's Transportation Research Center

## US DOT \$6 million grant

- Funds dedicated short-range communications for connected-vehicle and autonomous-vehicle testing and research

## ODOT \$16 million grant

- Places fiber optics along the corridor



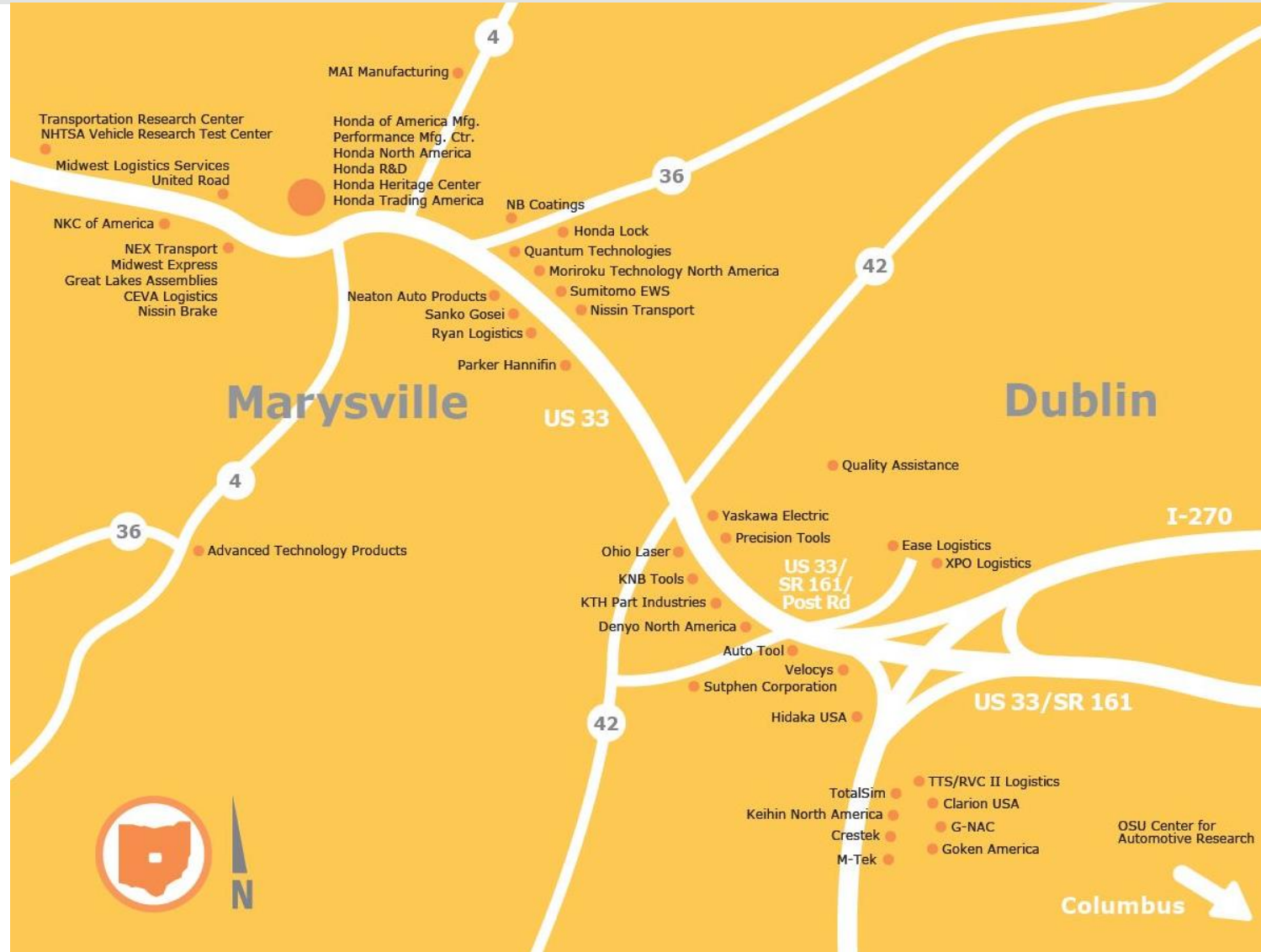
U.S. Department  
of Transportation



OHIO, USA



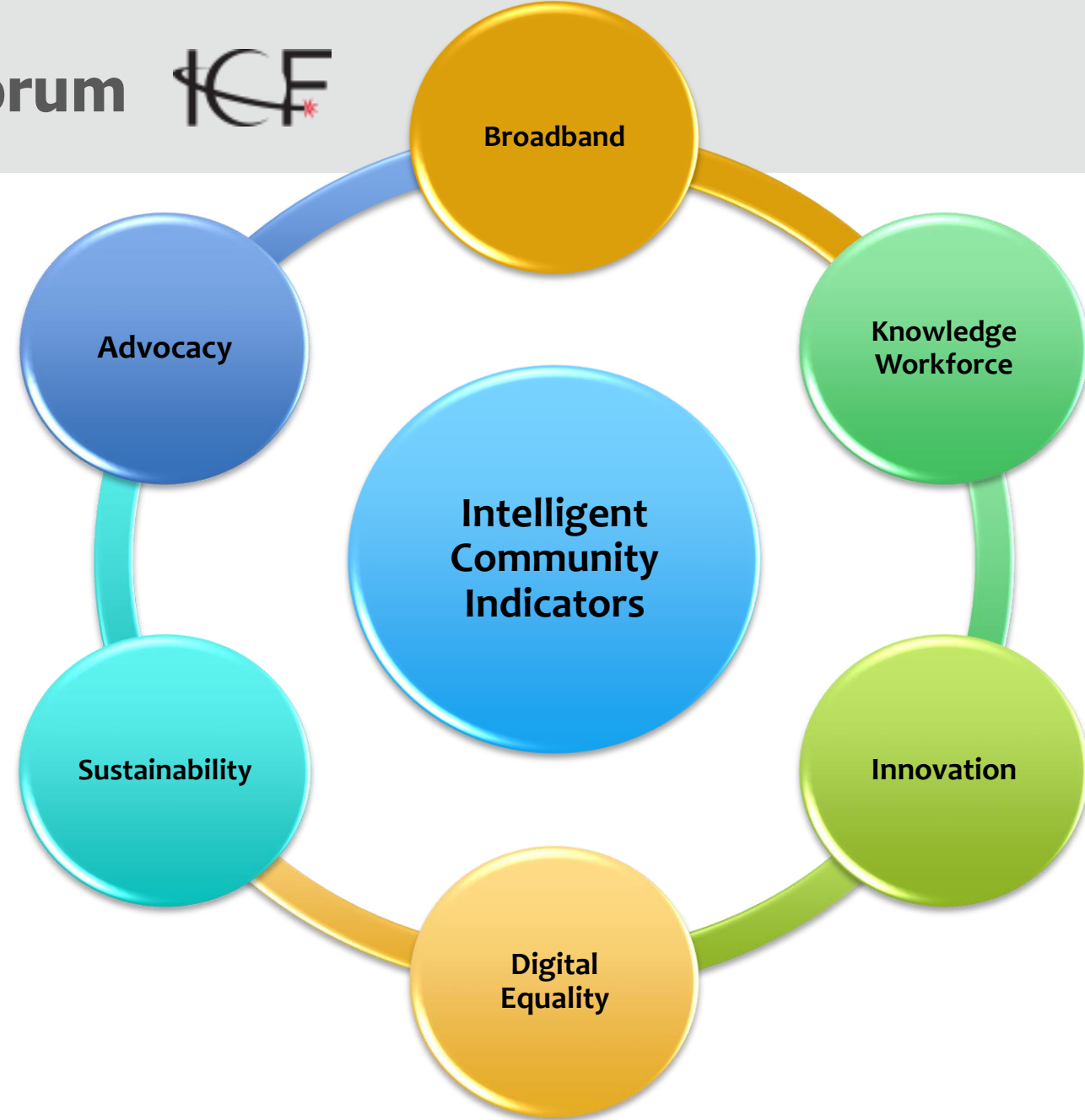
# US 33 AUTOMOTIVE CLUSTER



“Intelligent Communities are those which have – whether through crisis or foresight – come to understand the enormous challenges of the Broadband Economy, and have taken conscious steps to create an economy capable of prospering in it.”

Smart City projects **make cities work better**

Intelligent Communities **make better cities**



## Vision

An Intelligent Ohio

## What We Do

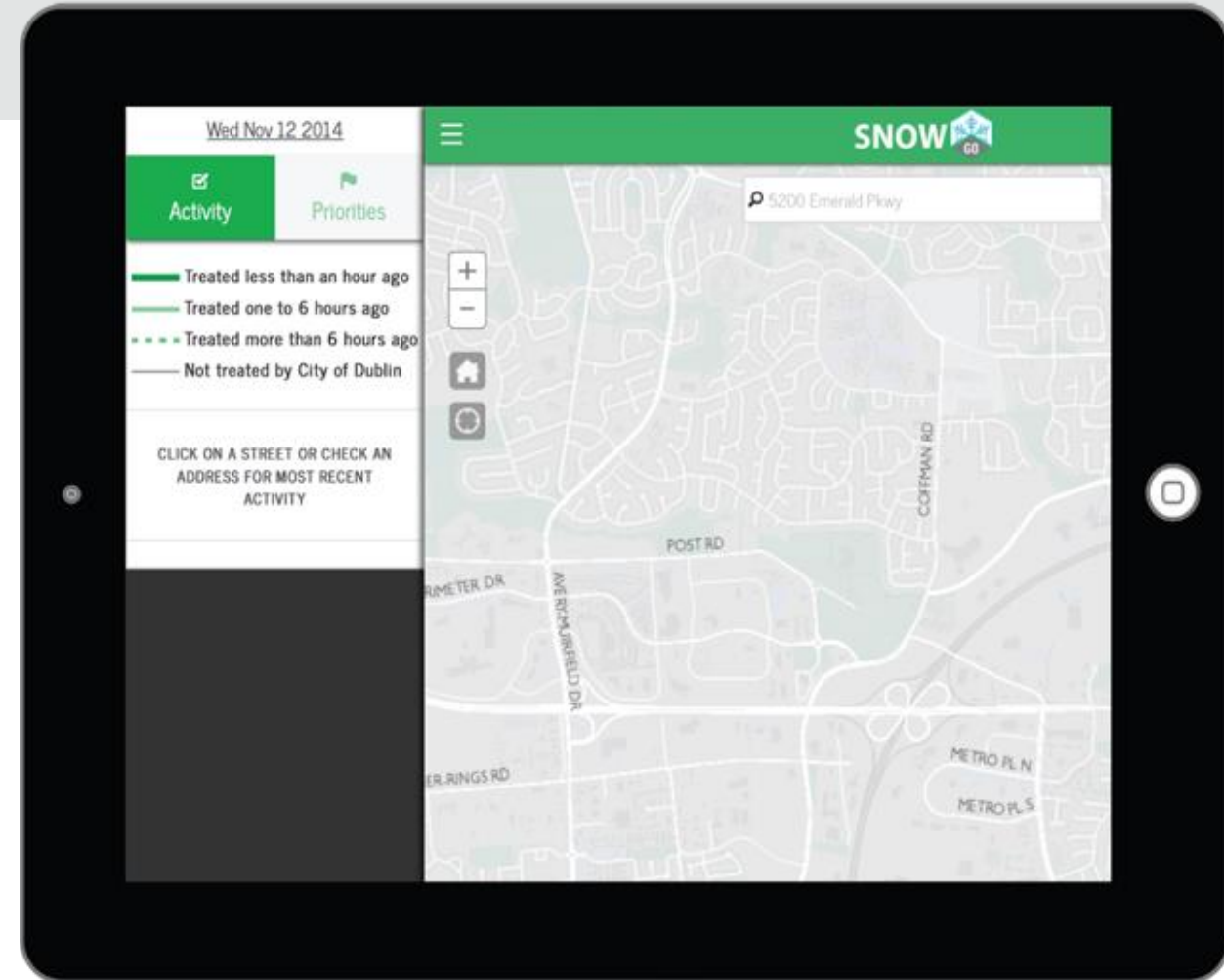
- Workshops, regional roadshows
- Resources
- Consultation
- Connections

## What Works in Communities

- Diverse Community Teams/Task Forces
- Leverage assets, address challenges
- Tell your story – loudly!



- GPS-based vehicle tracking
- Allows residents to view:
  - Vehicle/snow plow locations
  - When a street was last treated
- Capable of:
  - Texting – “your street has been treated” and specific treatment
  - Can track other services – chipping, leaf collection, etc.



**SNOW** 





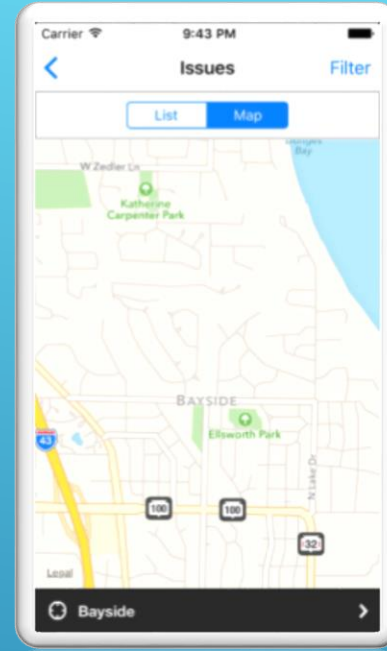
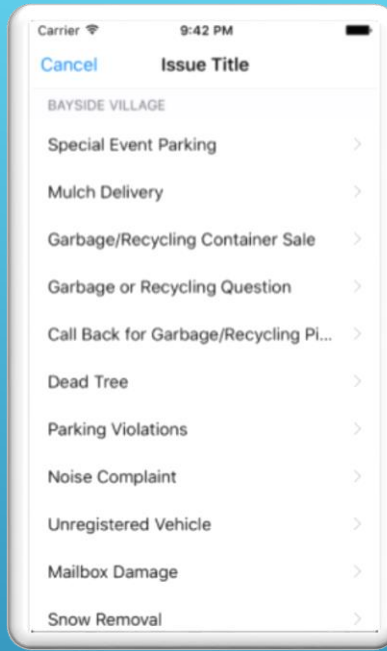
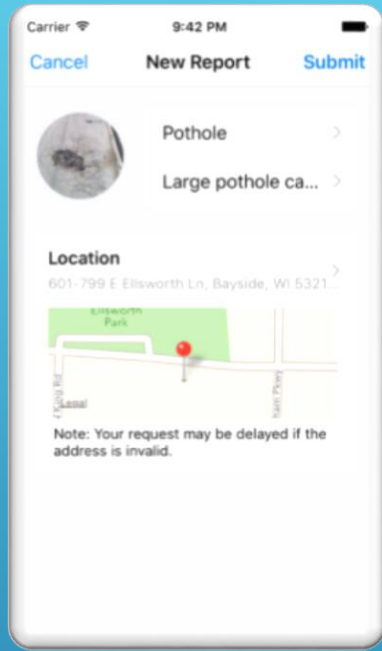
# SMALL COMMUNITIES CAN BE SMART TOO

INCORP. 1953

Village of

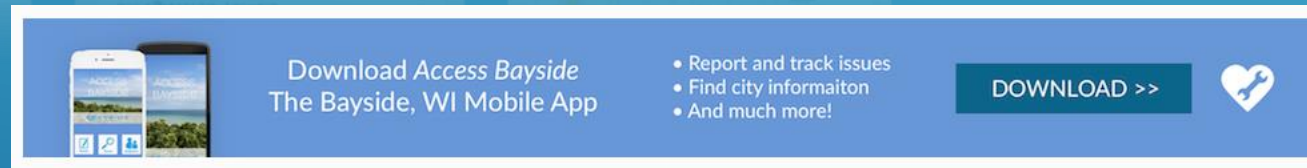
**BAYSIDE**

Wisconsin




# MOBILE APP

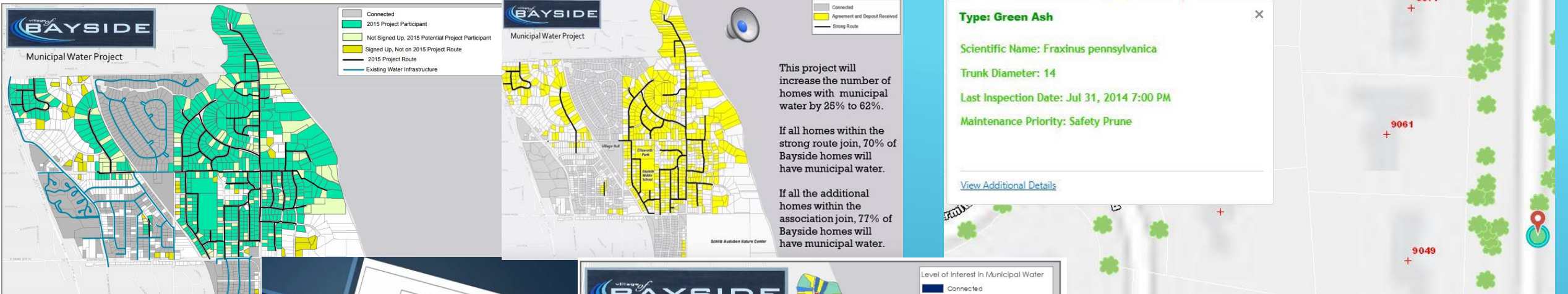
- Residents report a concern
- Can easily include picture and location using phone
- Automatically assigned to the correct staff person



Download *Access Bayside*  
The Bayside, WI Mobile App

- Report and track issues
- Find city information
- And much more!

[DOWNLOAD >>](#) 



# GIS

- Use maps to tell a story (Bayside water project)
- Use maps to track your progress (EAB tree management)
- Let staff update the maps live from the field (ipads)



## 2017 Street Resurfacing and Stormwater Project

### Sep 15 Road Resurfacing Has Begun!

Posted on September 15, 2017 at 3:23 PM by Jake Meshke

Stark Asphalt is in the Village and has begun the road resurfacing project. At this time, Seneca, Fielding, and Greenvale have been milled (old asphalt removed and taken away). There is a slight delay on King Road as final engineering is being completed. The proof roll was completed yesterday. This ensures that there will be a strong base under the freshly-paved road and alert the contractor if any sub-grading improvements need to be made before paving. All roads are set to be resurfaced and final landscape restoration efforts completed by the end of the month. If you have any questions or concerns, please call Jake at (414) 351-8812.

### Sep 15 West Ravine Lane Cross Culvert Nears Completion

Posted on September 15, 2017 at 3:22 PM by Jake Meshke

All of the work is finalized outside of patching the road where the new cross culvert pipe was installed. The Village Engineer is working closely with the contractor to have this project completed as soon as possible.

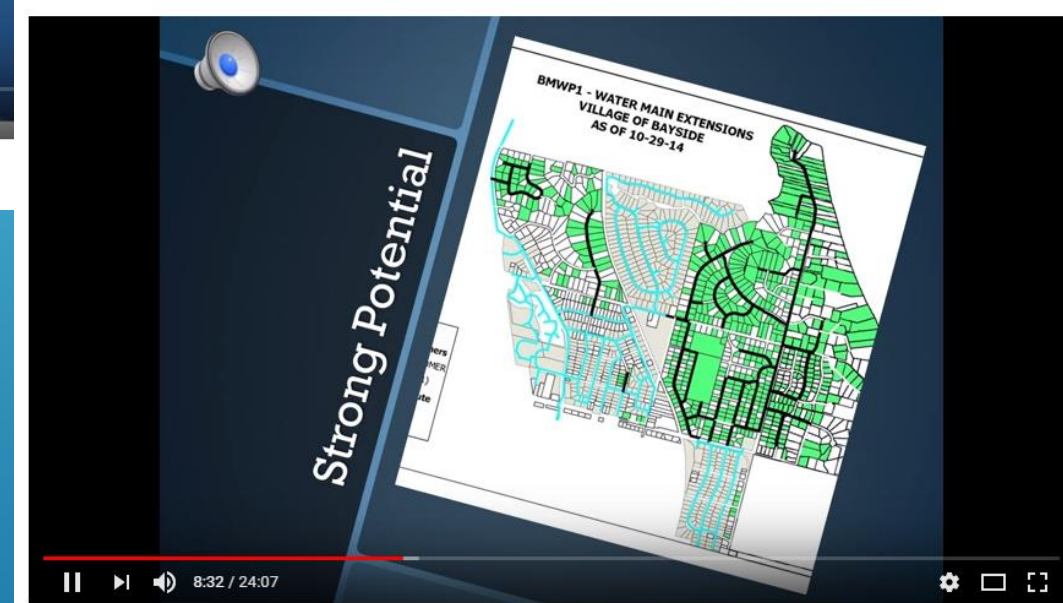
### Aug 25 West Ravine Lane Cross Culvert Update

Posted on August 25, 2017 at 3:16 PM by Jake Meshke

Ray Hintz Inc. has removed the failed 60-inch cross culvert and replaced with a new pipe. Landscape restoration has been completed as well. The project will finish next week with asphalt patching and site clean-up.



Water Presentation December 2014- Routes



Municipal Water Preliminary Engineering Presentation November 2014

# COMMUNICATE WITH TECHNOLOGY

- Blog
  - Sign up for text/e-mail alerts for projects of interest
- YouTube Public meetings
  - Pre-recorded information
  - Watch when convenient for you
  - Everyone gets the same information



**Questions?**

# Thank You!

OCTOBER 22-25  
ICMA 2017  
**SAN ANTONIO**  
103RD ANNUAL CONFERENCE • BEXAR COUNTY

