

Bellevue Smart City Strategy

Bellevue City Council | September 26, 2016



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Today's Presentation Overview

- Recap Smart City Effort
- Accomplishments to Date
- Smart City Maturity Model
- Smart City Vision and Goals
- Next Steps
- Council Action: Informational and Discussion
 - Understand context for budget
 - Ask questions
 - Provide feedback

Recap: City Council Vision Establishes Smart City

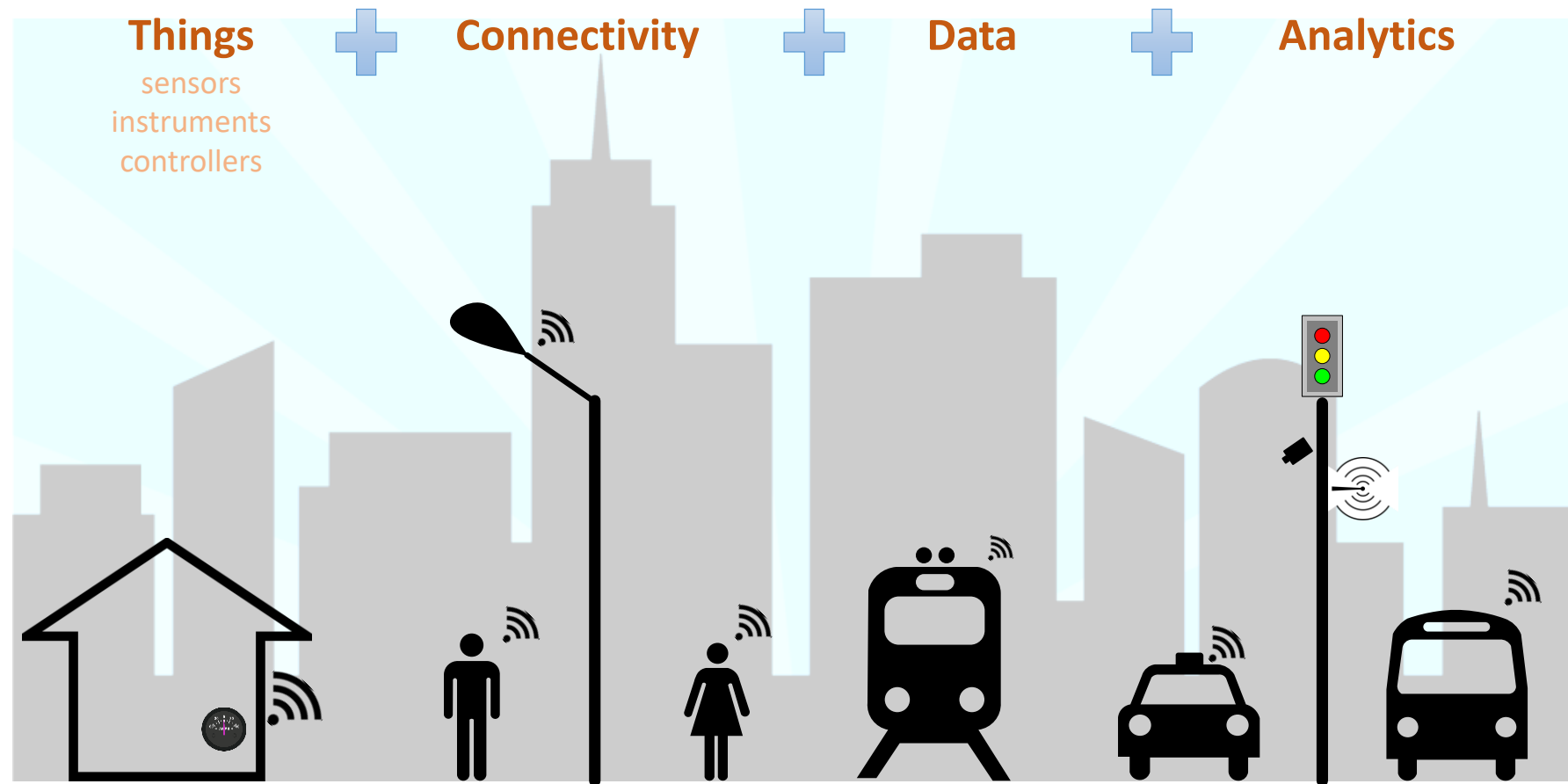
Council Vision Statements:

- ***Bellevue is a “Smart City” with a clean, high-quality environment and excellent and reliable infrastructure that supports our vibrant and growing city, including high-tech connectivity***
 - Infrastructure is ample and in excellent condition, including roads, rails, high-speed data, reliable electricity, and clean water
 - A state-of-the-art, intelligent transportation system moves people through the city with a minimum of wait times and frustration
 - Our institutes of higher learning are connected physically and digitally
 - Our residents live in a safe, clean city that promotes healthy living
 - We have superb infrastructure to support growing businesses and desirable residential opportunities

Two Year Priorities:

- Bring a Smart City strategy to the Council for its consideration for inclusion in the 2017/2018 budget
- Identify and implement technologies that improve customer service

Recap: What is a Smart City?



Using information and communications technology
to enhance livability, sustainability and resiliency

SMARTcity

BELLEVEUE



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Recap: Smart City Elements



Transportation



Connectivity



Energy



Public Safety



Water



Buildings

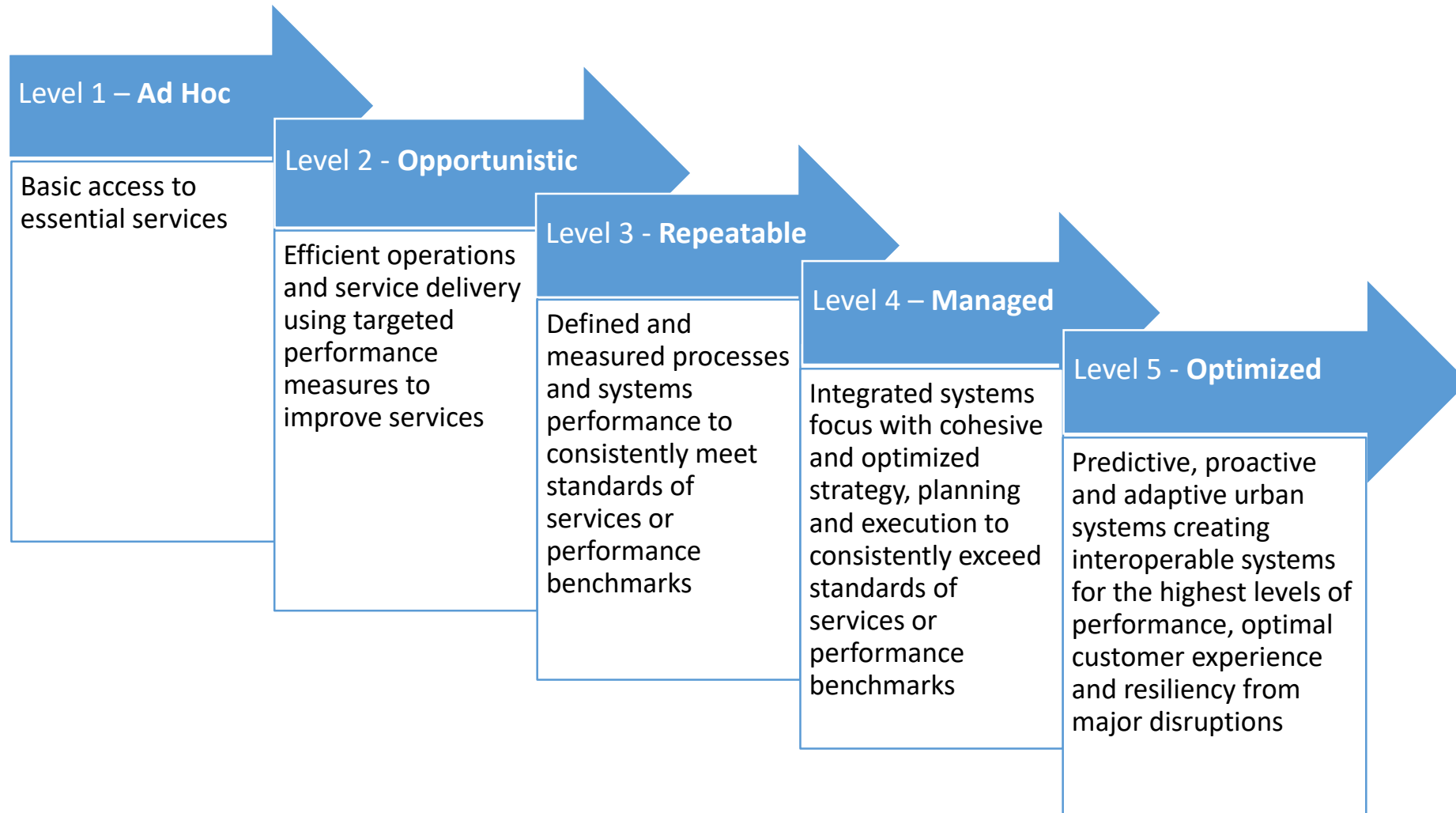
Accomplishments to Date

- Held Regional Smart City Workshop in partnership with Redmond, Microsoft and Verizon involving over 40 public, private and non-profit organizations
- Hired UW Evans School student consulting program to perform Smart City maturity assessment
- Launched Urban Smart Bellevue with PSE
- Won a National Institute of Standards and Technology grant for a Smart City Dashboard
- Won a Department of Energy grant for analyzing drivers of change for greenhouse gas emissions







Smart City Maturity Assessment

What is a Maturity Model?

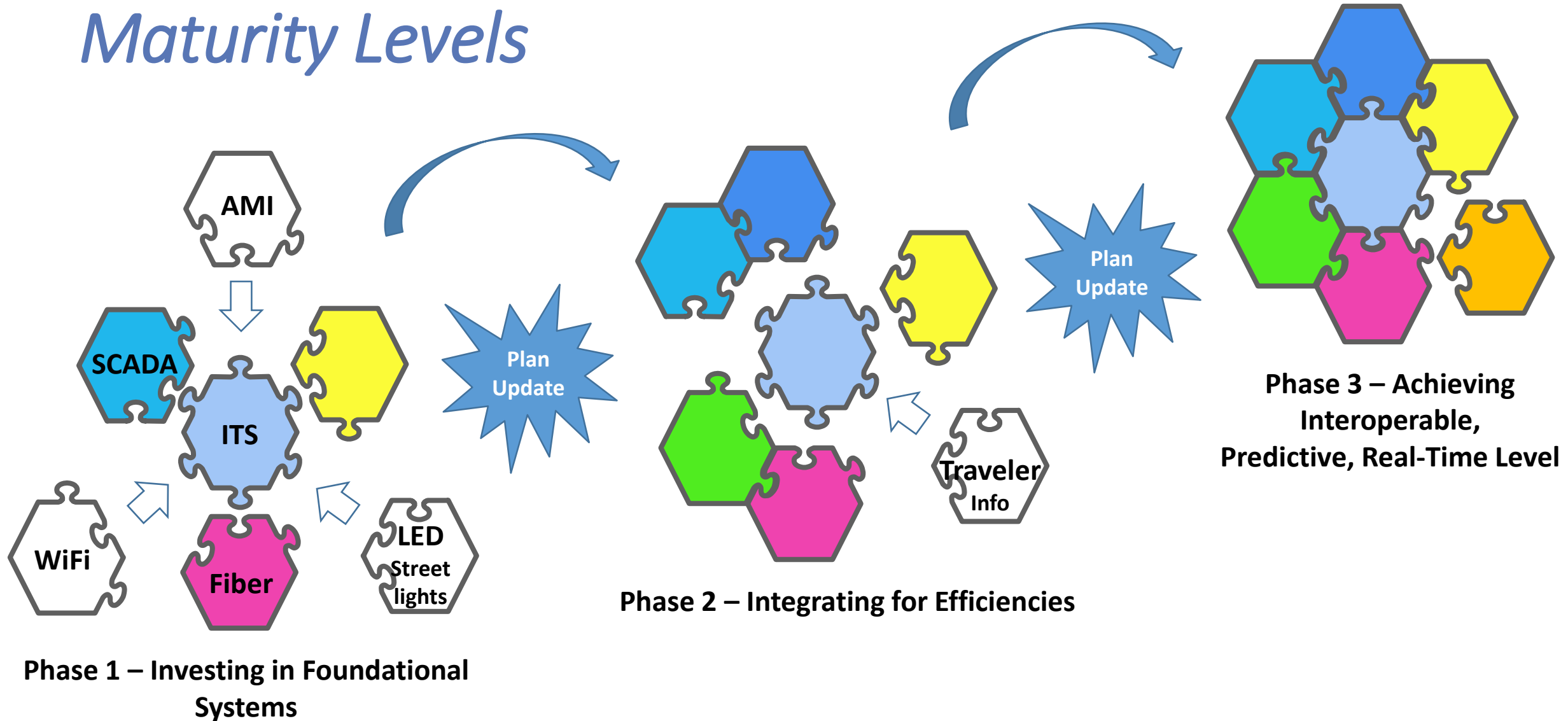
A Maturity Model framework is used to understand the current state of deployment and capabilities of systems or processes, ranging from Level 1 (most basic) to Level 5 (highly optimized)



Maturity Model and Gap Analysis Results - Now

	Maturity Level	1 - Ad Hoc	2 - Opportunistic	3- Repeatable	4 - Managed	5 - Optimized
	Connectivity					
	Transportation					
	Public Safety					
	Water					
	Buildings					
	Energy					
Note: Current Maturity scores are shown in blue boxes.						

A Long-Term Framework for Achieving Higher Maturity Levels

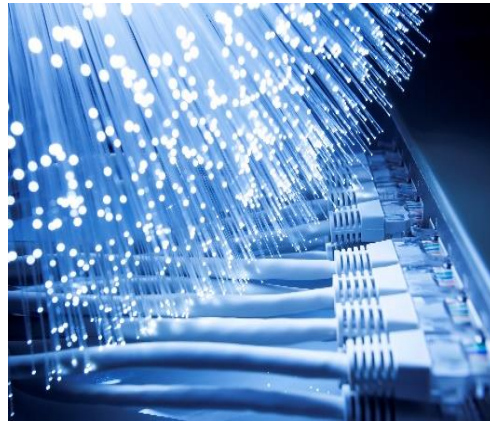


Smart City Elements

Vision and Goals



Expanded Wi-Fi



Digital Economy



**Consumer
Broadband
Services**

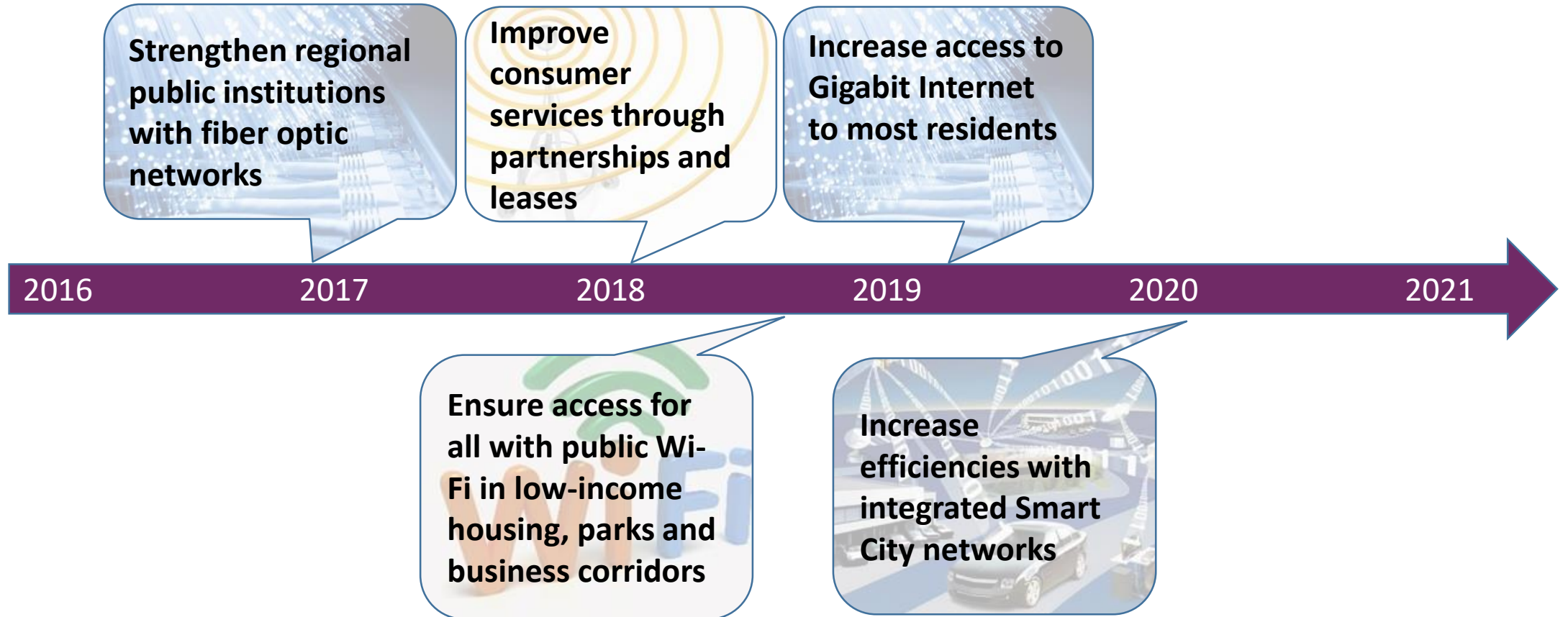


Smart Networks



Goals

SMARTconnectivity
BELLEVUE





Future Vision

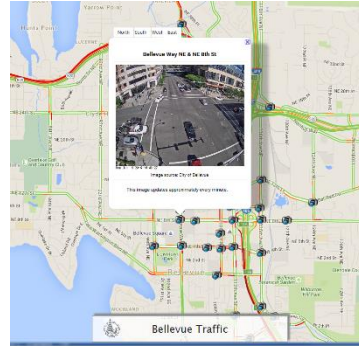
SMARTtransportation
BELLEVUE



Connected Vehicles



Smart Streetlights



**Informed
Travelers**



Transit Integration



**Pedestrian/
Bicyclist Safety**



Goals

SMARTtransportation
BELLEVUE

Complete ITS Master Plan Update

Deploy Next Generation TSP and Transit Data Sharing

2016

2017

2018

2019

2020

2021

Complete Video Analytics Test for Ped-Bike-Auto Near Miss Events

Begin Connected Vehicle Data Sharing

TBD:

- **Complete LED Streetlight Upgrades**
- **Define enhanced traveler info.**
- **Improve signal system performance monitoring**
- **Deploy parking management**
- **Enhance communication network**

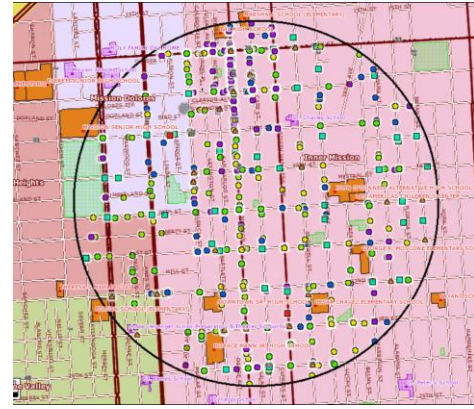


Future Vision

SMARTpublic safety
BELLEVUE



Integrated Systems



Predictive Analysis



**Resilient
Communications**



**Regional
Partnerships**



**Situational
Awareness**



Goals

SMARTpublic safety
BELLEVUE

Improve emergency management using Common Operating Pictures

Improve Public Safety Emergency Radio Network for increased reliability

2016

2017

2018

2019

2020

2021

Increase policing effectiveness and lower crime through use of predictive analytics and best practices, such as CompStat

Better emergency medical response with integrated electronic patient care records

Increased interoperability with dedicated wireless network for first responders with FirstNet

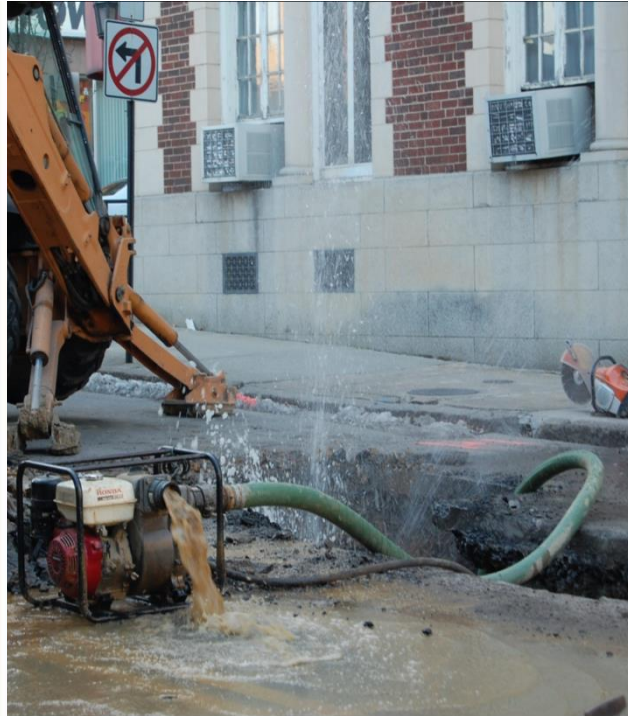


Future Vision

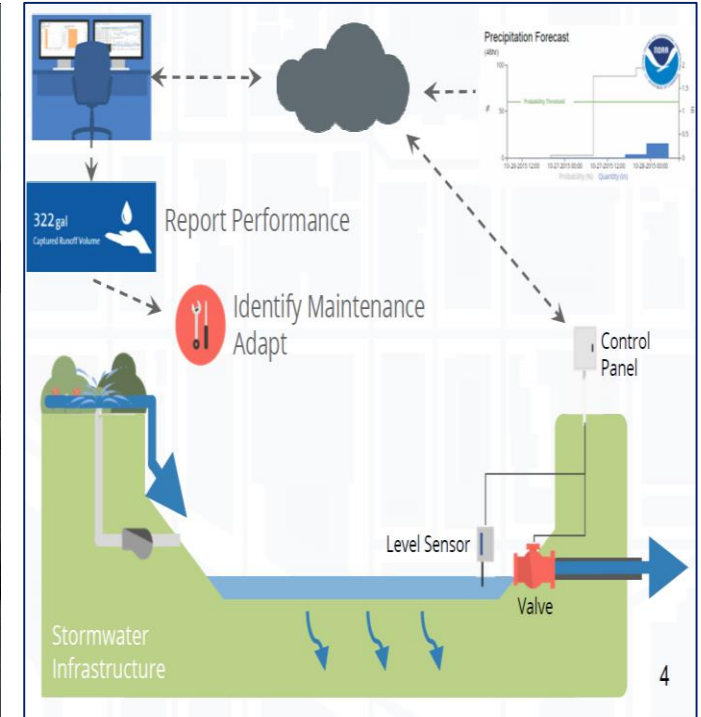
SMARTwater
BELLEVUE



Advanced Metering



Proactive Detection



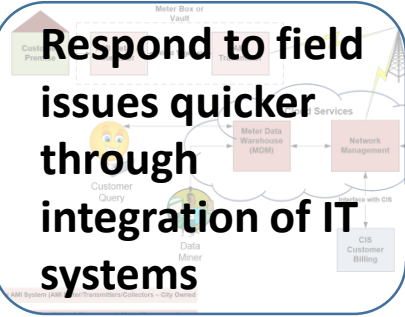
Predictive Operations



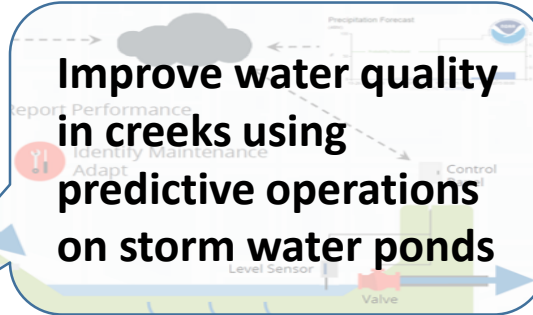
Goals

SMARTwater
BELLEVUE

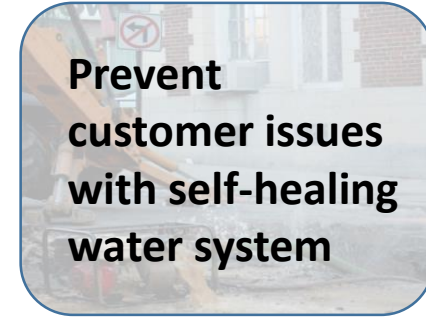
Respond to field issues quicker through integration of IT systems



Improve water quality in creeks using predictive operations on storm water ponds



Prevent customer issues with self-healing water system



2016

2017

2018

2019

2020

2021

Detect potential pipe breaks using acoustic technology



Provide customers with real-time access to water use and leak data





SMARTbuildings
B E L L E V U E



Smart Buildings



Reduce Waste



Safer Buildings



Goals

SMARTbuildings
BELLEVUE

Proactively Monitor and Reduce Greenhouse Gas and Energy Use with a Dashboard

Improve emergency response times by integrating security and fire systems with 911

2016

2017

2018

2019

2020

2021

Make downtown smarter, more efficient, and reduce waste by 16 million kWh by partnering with PSE

Benchmark energy use of commercial buildings

Integrate Net Zero energy and water in buildings

energy • waste • water



SMARTenergy
BELLEVUE



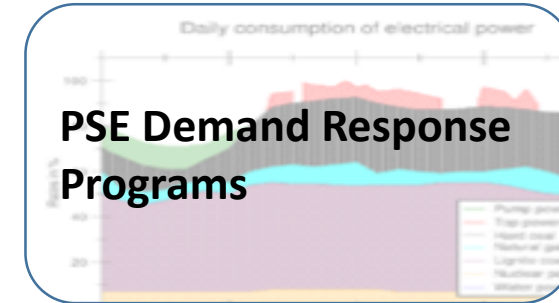
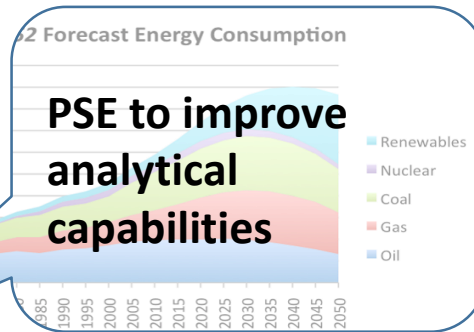
Optimized Grid



**Conservation and
Renewables**



Advanced Metering



2016

2017

2018

2019

2020

2021

Reduce Greenhouse Gases (GHGs) by more refined citywide GHG emissions analysis and reduction target

Upgrade and expand EV Charging Station network

Increase customer access to real-time energy usage data

PSE to Procure Additional Renewable Resources

Maturity Model and Gap Analysis Results - Future



Maturity Level	1 - Ad Hoc	2 - Opportunistic	3- Repeatable	4 - Managed	5 - Optimized
Connectivity					
Transportation					
Public Safety					
Water					
Buildings					
Energy					
Note: Current Maturity scores are shown in blue boxes. Target Maturity scores are shown in arrows.					

Supporting Efforts

- Security
 - Focusing on critical infrastructure protection for IT Security Program
- Privacy
 - Establishing privacy policies and practices
 - Monitoring emerging privacy legislation
- Data Transparency and Analytics
 - Open Data Portal to share data sets
 - Smart City Dashboard to visualize Smart City data streams
 - Pilot projects on data analysis

Next Steps

- Strategy Approval
- Budget Approval
- Projects Execution
- 2018 - Update Smart City Strategy for 2019-20 Budget

Council Action: Informational and Discussion

- Questions?
- Feedback?