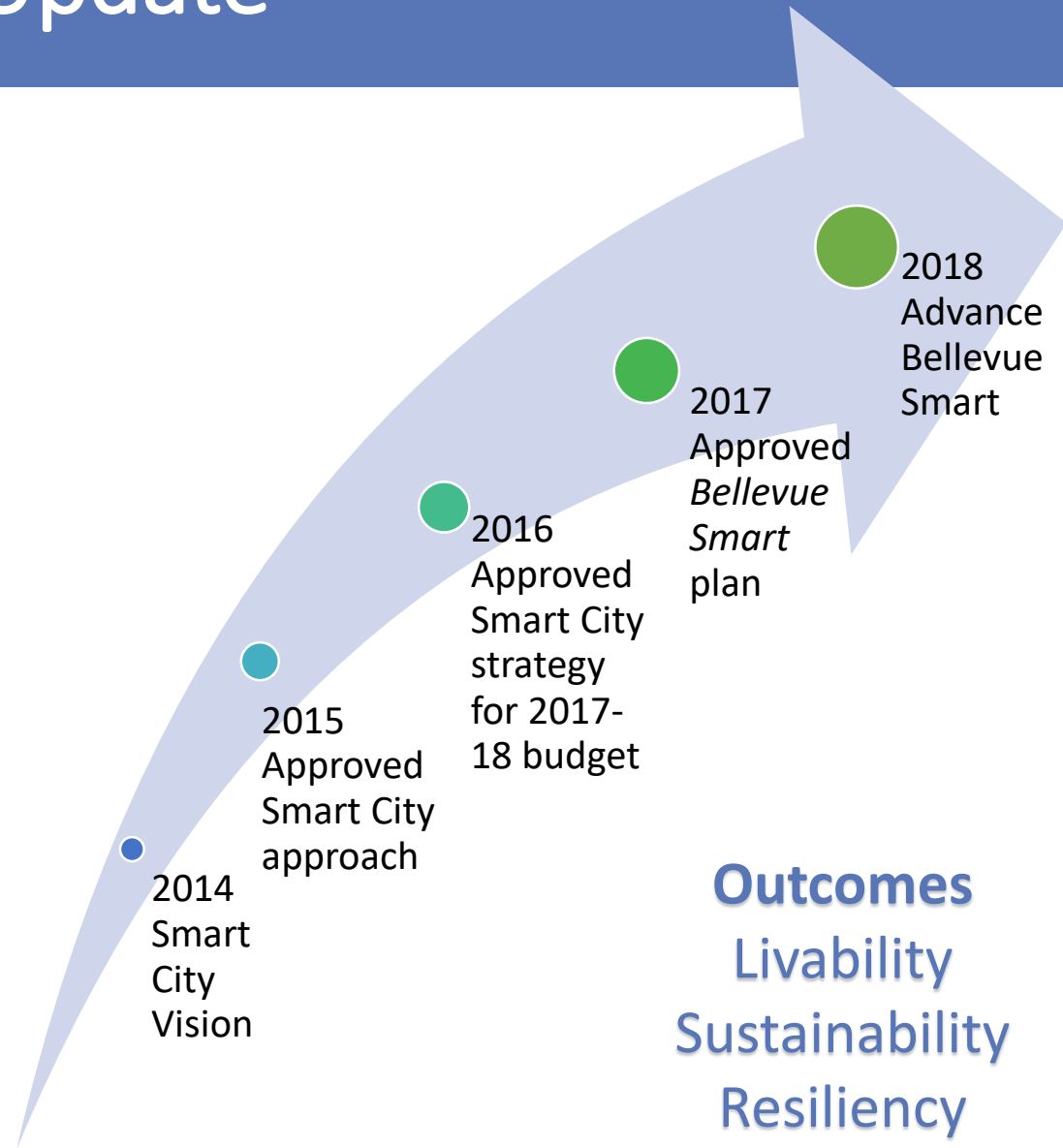# Planning for a Smarter City

Update to Bellevue City Council

July 9, 2018

Bellevue Smart Update
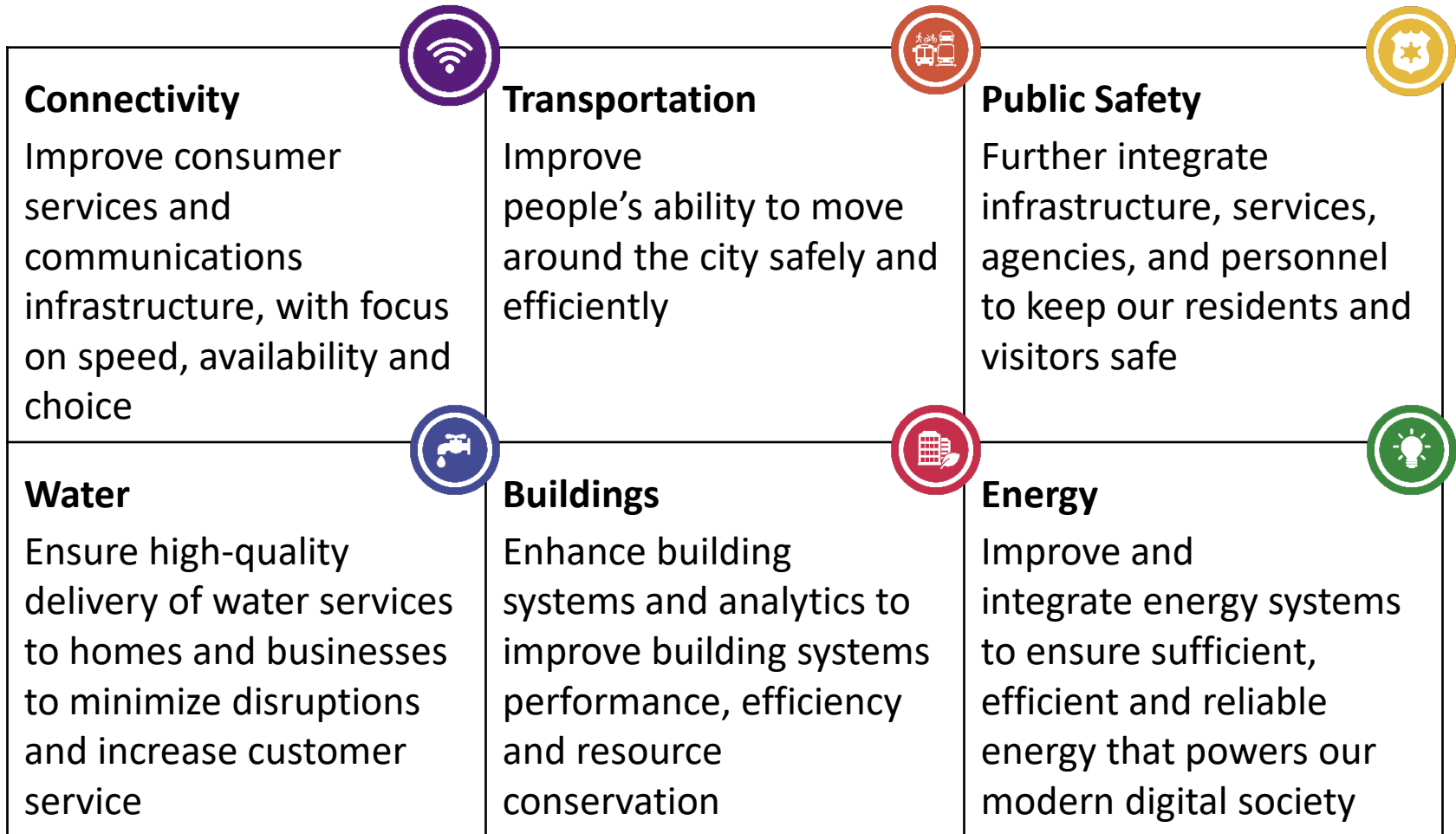
Council Vision

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.

2018 Advance Bellevue Smart

2017 Approved *Bellevue Smart* plan

2016 Approved Smart City strategy for 2017-18 budget

2015 Approved Smart City approach

2014 Smart City Vision

Outcomes
Livability
Sustainability
Resiliency

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Smart City Element Goals

Projects are embedded across multiple departments, workplans and initiatives.

Connectivity
Improve consumer services and communications infrastructure, with focus on speed, availability and choice

Transportation
Improve people's ability to move around the city safely and efficiently

Public Safety
Further integrate infrastructure, services, agencies, and personnel to keep our residents and visitors safe

Water
Ensure high-quality delivery of water services to homes and businesses to minimize disruptions and increase customer service

Buildings
Enhance building systems and analytics to improve building systems performance, efficiency and resource conservation

Energy
Improve and integrate energy systems to ensure sufficient, efficient and reliable energy that powers our modern digital society

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Principle Strategies

1. Focus on proactive and adaptive

2. Drive with data

3. Pursue partnerships

4. Leverage regional relationships
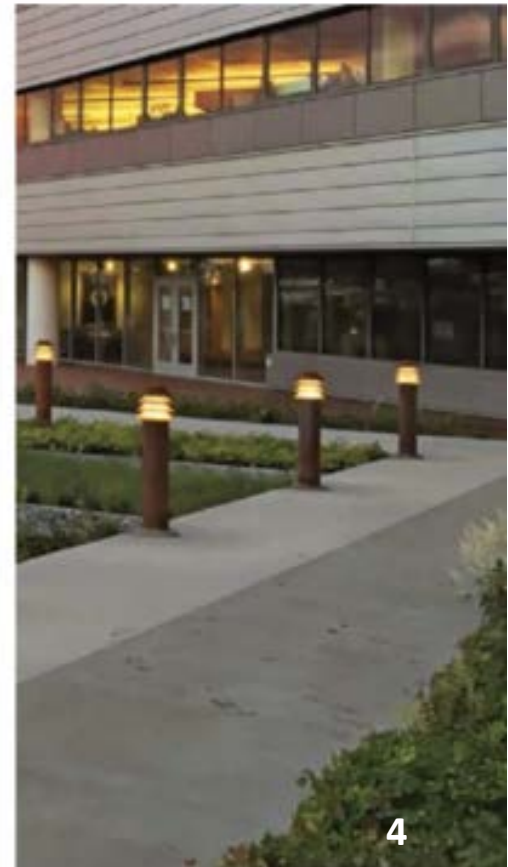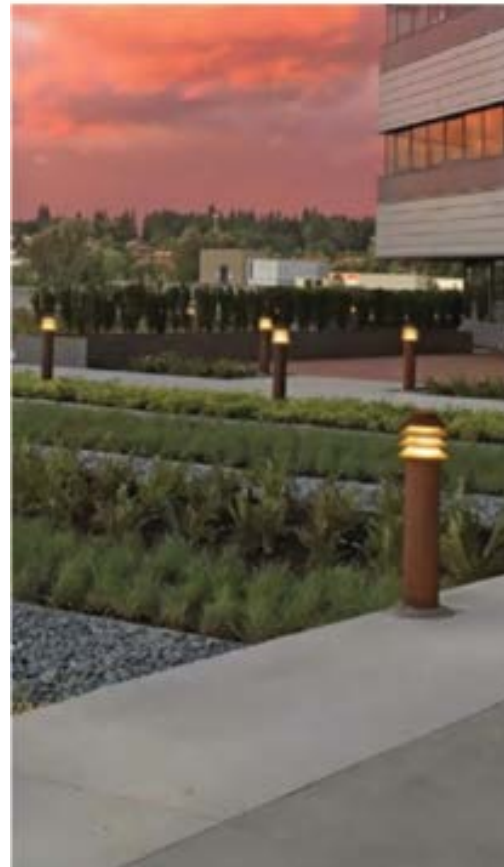
How's our progress?

On track with plan

Bellevue Smart Plan update targeted for 2019

BELLEVUE SMART TIMELINE

Category	Task Name	2017	2018	2019	2020	Complete
Connectivity	Complete regional fiber optic ring	project				✓
	Connect GIX to fiber ring	milestone				✓
	Expand public Wi-Fi	project				✓
	Increase access to gigabit internet		project			✓
	Improve consumer broadband partnership, leases	project				✓
	Integrate smart city networks			project		
Transportation	Complete ITS Master Plan Update	milestone				✓
	Complete streetlight management system pilot	milestone				✓
	Issue performance monitoring system RFP	milestone				
	Traffic network communication backbone upgrade		project			✓
	Integrate enhanced traveler information dissemination	milestone				✓
	Advanced video analytics pilot for ped-bike-auto	project				✓
	Deploy next-gen TSP			milestone		
	Start transit data-sharing system development			milestone		
	Complete LED streetlight upgrades (tbd)					
	Complete GPS emergency vehicle preemption upgrade (tbd)					
	Partner on emerging transportation technologies (tbd)					
Public Safety	Expand analytics and CompStat for policing efficiencies	milestone				
	Develop interactive map for emergency/disaster response	project				
	Integrate electronic patient care records	milestone				✓
	Increase interoperability with FirstNet (tbd)					
	Public Safety Emergency Radio Network replacement (tbd)					
Water	Detect potential pipe breaks using acoustic technology					
	Complete Smart City Dashboard – water module	project				✓
	Release AMI RFP					✓
	Select AMI vendor	milestone				✓
	Implement AMI		project			
	SCADA Master Plan		project			
	Integrate IT systems for field response			milestone		
	Real-time customer access to water use/leak data			milestone		
	Implement predictive operations pilot at stormwater ponds			project		✓
	Implement self-healing water system (tbd)					
Buildings	Urban Smart Bellevue Pilot with PSE	project				✓
	Quarterly municipal buildings energy benchmarking	milestone (recurring)				✓
	Georgetown Energy Prize Awarded	milestone				✓
	Complete Downtown Sustainability Assessment		milestone			
	Develop commercial buildings benchmarking program (tbd)					
	Integrate security/fire alarm systems/emergency response (tbd)					
	Integrate Net Zero energy/water in buildings (tbd)					
Energy	Analyze greenhouse gas emissions	project				
	PSE upgrades Smart Grid systems	project				
	PSE improves electrical reliability	project				
	Upgrade and expand EV charging station network			milestone		
	PSE customer access to real-time energy usage data	project				
	PSE demand response programs available (tbd)	project				

Legend: ▬ project   ◆ milestone   ✓ complete

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Progress: Expanded Public Wi-Fi

Connectivity

- Outdoor Wi-Fi in Parks:
    - Completed – Crossroads Park, Highland Park, Lewis Creek, Kelsey Creek, Downtown Park
    - In progress - Botanical Garden
- Affordable Housing Properties:
    - Spiritwood Apartments (148th Ave) - *Completed*
    - Highland Village (NE 8th St) – *in design*
    - Somerset Gardens (NE 29th Pl) – *initial discussions*

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Progress: Intelligent Transportation System

- Traffic signal performance monitoring
- Streetlight management
- Parking management

Transportation

Progress: Integrated Electronic Patient Care

- Mobile patient information sharing with hospitals

- End-to-end data collection between EMS, doctors and follow up care

- Integrated data analysis allows early awareness of community health trends

Progress: Water Operations

Water

- Smart Water Meters contract procurement in progress

- Implementing predictive operations at storm water ponds

- Predictive analytics on pipeline failures through machine learning

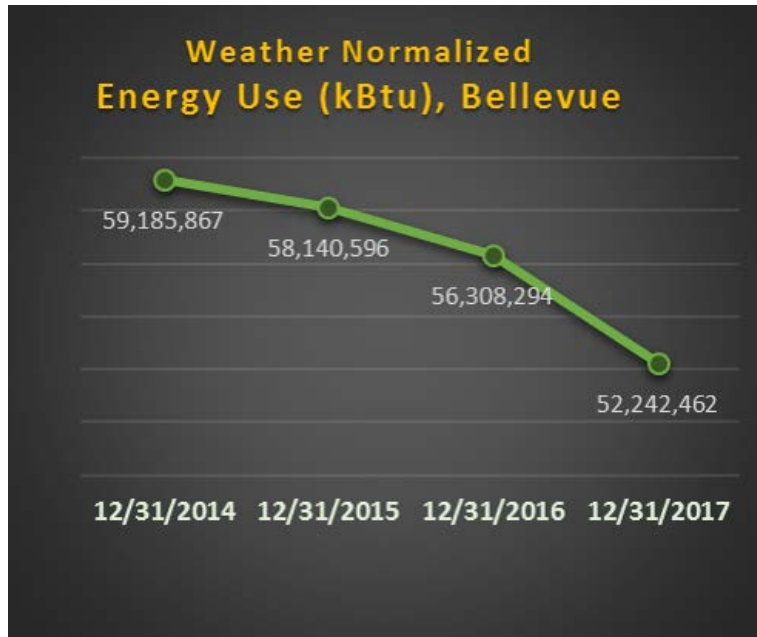- Long-term planning for real-time operational controls through SCADA
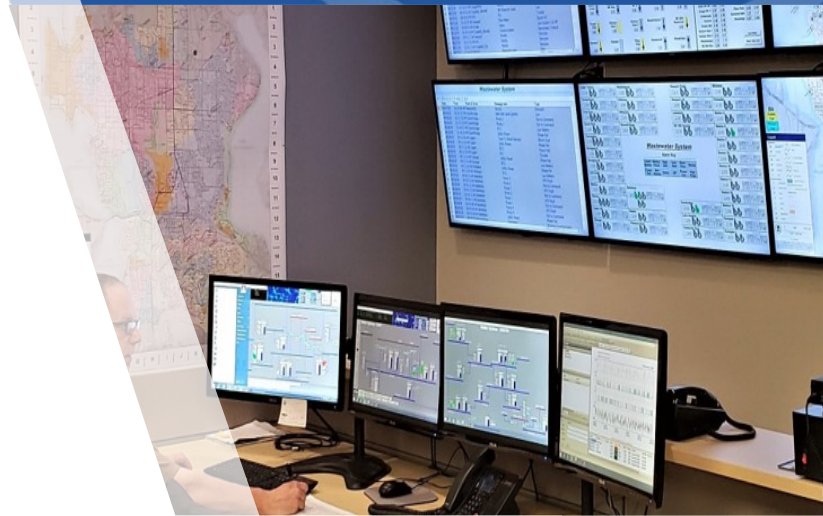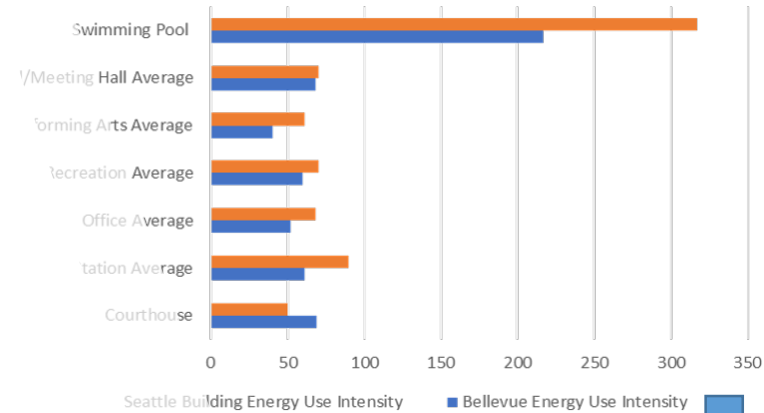
Progress: Benchmarking City Buildings

27 municipal buildings over 5,000 sq ft benchmarked for energy use intensity

Weather Normalized Energy Use (kBtu), Bellevue

59,185,867
58,140,596
56,308,294
52,242,462

12/31/2014   12/31/2015   12/31/2016   12/31/2017

Reduced energy use over time

Bellevue Municipal Buildings Compared to Peer Seattle Buildings (2017)

Swimming Pool
/Meeting Hall Average
forming Arts Average
Recreation Average
Office Average
tation Average
Courthouse

0   50   100   150   200   250   300   350

Seattle Building Energy Use Intensity   ■ Bellevue Energy Use Intensity

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Progress: Energy

- PSE electric and gas smart meter upgrades 2018-2020

- Bellevue signed up for green power for select city facilities through PSE's Green Direct program

- U.S. DOE grant to analyze drivers of change in greenhouse gas emissions near completion

Energy

Future Council Actions

- Interest Statement for Smart Mobility

- Small Cell Master License City Code Change

- Small Cell Master License Agreement

- AMI Contract

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Questions?

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