

# Smart Cities Strategic Roadmap Update

✓ Council Work Session, November 7, 2017



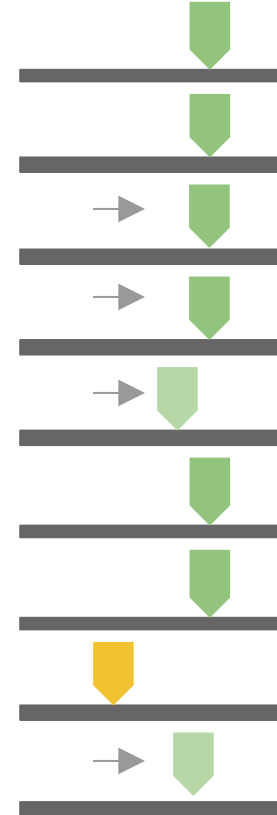
# Contents

1. Quick recap
2. Current list of projects
3. Unpack how we got here; how we'll get there
4. Recommended projects
5. Discussion

# Deliverables

# Progress

- A common, Austin-centered definition of Smart Cities
- A statement of vision about Austin's Smart Cities future
- Challenges on which we should focus and prioritize
- Potential opportunities to address those challenges
- Key goals & outcomes operationally for the City and for residents' equitable quality of life
- An inventory of practices to consider
- Core needs, gaps, and capabilities to deliver
- Potential resources and means for partnering and financing initiatives
- A prioritized list of projects to pursue



# **| Project Highlights**



### Economic Opportunity and Affordability

## Austin Energy Smart Grid and Digital Meters

Connectivity from power plants through transmission and distribution systems to achieve quicker outage restoration, easier billing, personal control over energy usage, and improved efficiency



### Economic Opportunity and Affordability

## Digital Inclusion PC Loan Pilot

Program ensures that all residents have access to the skills and devices necessary to engage in our digital society -- including our PC loan pilot



### Mobility

## Smart Mobility Roadmap

Analyzes impact of shared, electric and autonomous mobility vehicles on equity, affordability, safety, land use, infrastructure, and resources



### Economic Opportunity and Affordability

## Tech Hire

Identify data related to employer needs, innovative hiring practices, opportunities to connect students to internships, jobs; identify strategies for scaling up



### Cultural and Learning Opportunities

## Central Library & Video Conferencing

150 self-check portable devices and a technology petting zoo with virtual reality, 3D printing; video conferencing in progress for all branches to help residents communicate with Council



### Cultural and Learning Opportunities

## WiFi in Austin Parks

Provide free, consistent, and reliable public WiFi within parks at no cost to the City



## Health

### Food Environment Maps

Map Travis County food retail store survey data into a food environment map understand food access in Austin to help prioritize initiatives



## Safety

### Improvements to ATX Floods

Improve how we provide information about the status of roadway closures to the public and emergency services, with real timestamped data, imagery and context region-wide



## Safety

### Security Operations Center

A virtual security operations center to organize and centralize information security staff for enhanced security monitoring



## Health

### Resource Recovery Smart Fleet

Get to more sustainable outcomes with Integrated data, GPS, radio-frequency identification in vehicles to reduce risk, improve customer service, and increase operational efficiencies



## Safety

### Pedestrian Lighting Pilot

Integrate sensor-activated pedestrian lighting in safety study in West Campus. Partnering with Vision Zero for better illumination to increase visibility and interactive contrast lighting to reduce nighttime crashes



## Safety

### City of Austin Continuity of Operations Program

Digitizing the City's Continuity of Operations Plan management system, including pilot focused on the Combined Technology, Emergency, Communications Center facility



**Government that  
Works for All of Us**

## **Leak Detection of Austin Water's existing infrastructure**

Detecting water leaks by analyzing spectral images from satellites



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Works for All of Us**

## **Human Capital Management**

Provide an automated self-service system for time, attendance and scheduling capabilities to replace the current paper time-keeping and scheduling processes



**Government that  
Works for All of Us**

## **Austin.gov Goes Paperless**

Identify and prioritize services that need transformation from paper to digital on new austin.gov platform to reduce transaction cost, save time, increase accessibility, open data



**Government that  
Works for All of Us**

## **Open & Smart Project Tracking**

Provide a smart and open project tracking tool to help following along on open government and smart city projects across City departments

**| Let's unpack how we got here, how we'll get there.**



Discovery Phase

**We are here**



Roadmap definition,  
maturity model

Standardize, refine  
inventory

Align Key Goals, Measures from  
Strategic Plan

Prioritize Resources &  
Means

Project  
Tracking Site



WHERE  
IT  
LEADERS  
CONNECT

SmartCitiesCouncil®

Livability  
Workability  
Sustainability



# **Think of our roadmap as a strategic conversation**

Our first draft unifies our vision.

Next steps - we refine the vision and course of action.



# Austin's Smart City Definition

We are a city that becomes **increasingly efficient** in **solving real problems** for **real people** by:

- (i) engaging stakeholders and users,
  - (ii) leading collaboratively,
  - (iii) working across disciplines, departments, and city systems; and
  - (iv) using data and integrated technologies
- to transform services and improve quality of life with and for ***all* Austinites**, businesses, and visitors.

# In this definition, Open Government + Smart Overlap

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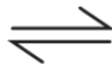
**| With this definition, we know how to grow...**

1



1-way/Broadcast  
Engagement

2



Receive input/ 2-way  
engagement

3



Close the Feedback  
Loop

4



Inclusive Partnerships/  
Relationships

## ENGAGE PEOPLE

How openly do you allow  
others to participate?

## LEAD COLLABORATIVE

What does leadership look  
like on your teams?



Hierarchical



Encourage Team  
problem-solving



Shared Accountability for  
Outcomes



Transparent multi-partner  
governance

## WORK ACROSS DISCIPLINES, SYSTEMS

How do teams work  
together?



Silos



Across Disciplines  
or Units



Across Teams or  
Departments



Across systems

## TECH & DATA

How is content managed?  
How are services delivered?



Paper/  
No Data



Some Automation/  
Some Data



Transactional Services/  
Analytics



Integrated Systems  
Data models

## CAPABILITY

How evolved is your ability to  
solve problems?



In-person, one episode at  
a time



Some analysis - high level  
trends

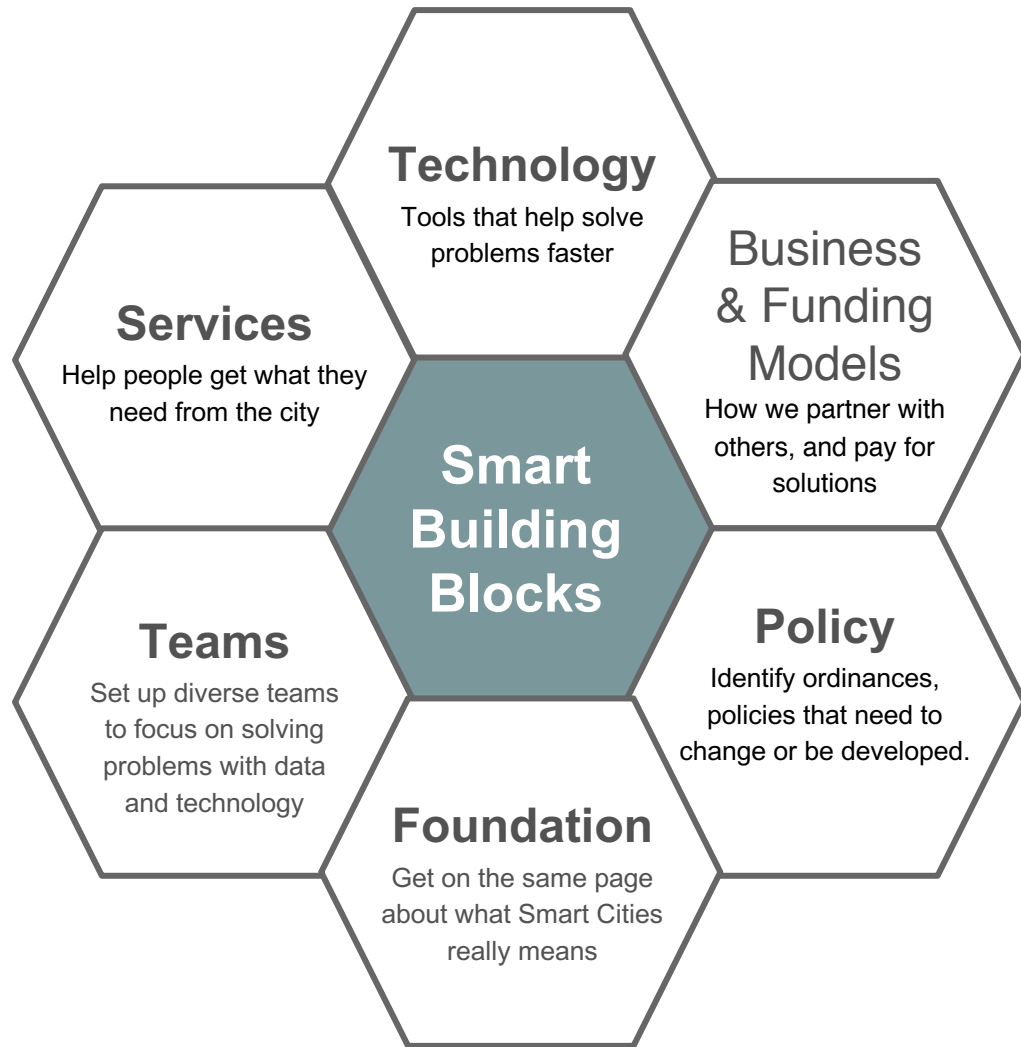



Deeper analysis, identify  
hidden problems, respond



Real-time data, predictive,  
proactive, transform

# From roadblocks to building blocks





**With the definition and building blocks, we can align and prioritize projects, which will then help define means for partnering and financing**



# Align with Strategic Outcomes, then Prioritize



## **Economic Opportunity and Affordability**

Having economic opportunities and resources that enable us to thrive in our community.



## **Mobility**

Getting us where we want to go, when we want to get there, safely and cost-effectively.



## **Health**

Enjoying a sustainable environment and a healthy life, physically and mentally.



## **Government that Works for All of Us**

Believing that city government works effectively and collaboratively for all of us—that it is equitable, ethical and innovative.



## **Safety**

Being safe in our home, at work, and in our community.



## **Cultural and Learning Opportunities**

Being enriched by Austin's unique civic, cultural, ethnic, and learning opportunities.

## **Draft prioritization formula**

- ✓ **Real People:**  
Resident population served
- ✓ **Real Problems:**  
Resident value
- ✓ **Equity**
- ✓ **Sustainability**
- ✓ **Total Cost of Ownership**  
**Shared tools lowers costs**

# Resources and means for partnering and financing

Progress



# Platform for Advanced Wireless Research (5G)

## Feedback on \$25 million grant application

### Strengths:

Effort brings together diverse skillsets and organizations across the state, including communities that already work well together

Strong connections to academic wireless research (local and foreign)

Effort includes the development of verticals such as public safety, health, energy and transport

### Weaknesses:

Lack of a coherent coordination plan among the various local/regional and vertical communities

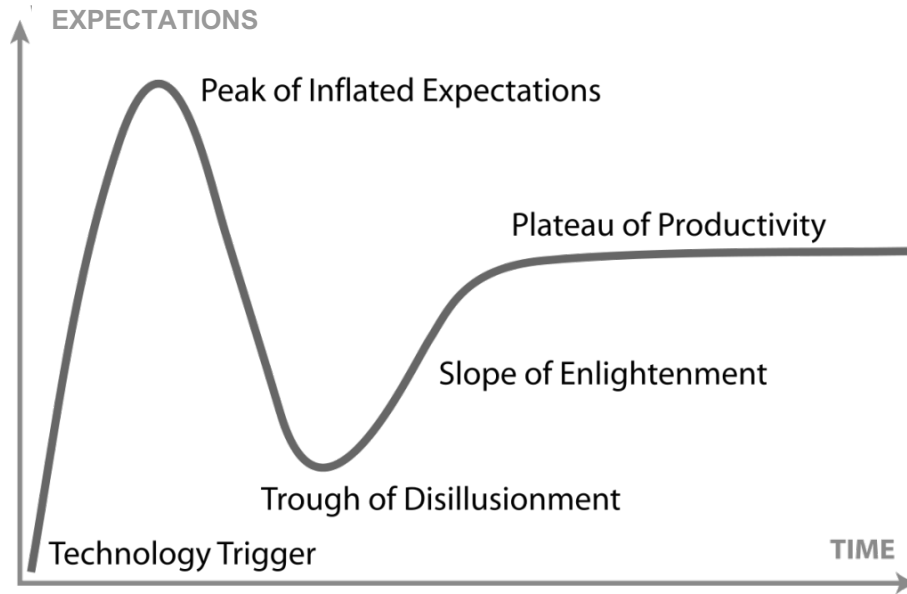
Lack of details on engagement plans and governance

Lack of risk mitigation and analysis plans

Not enough transformative and innovative research elements and sufficient details to be convincing. The value-added remains incremental and small.

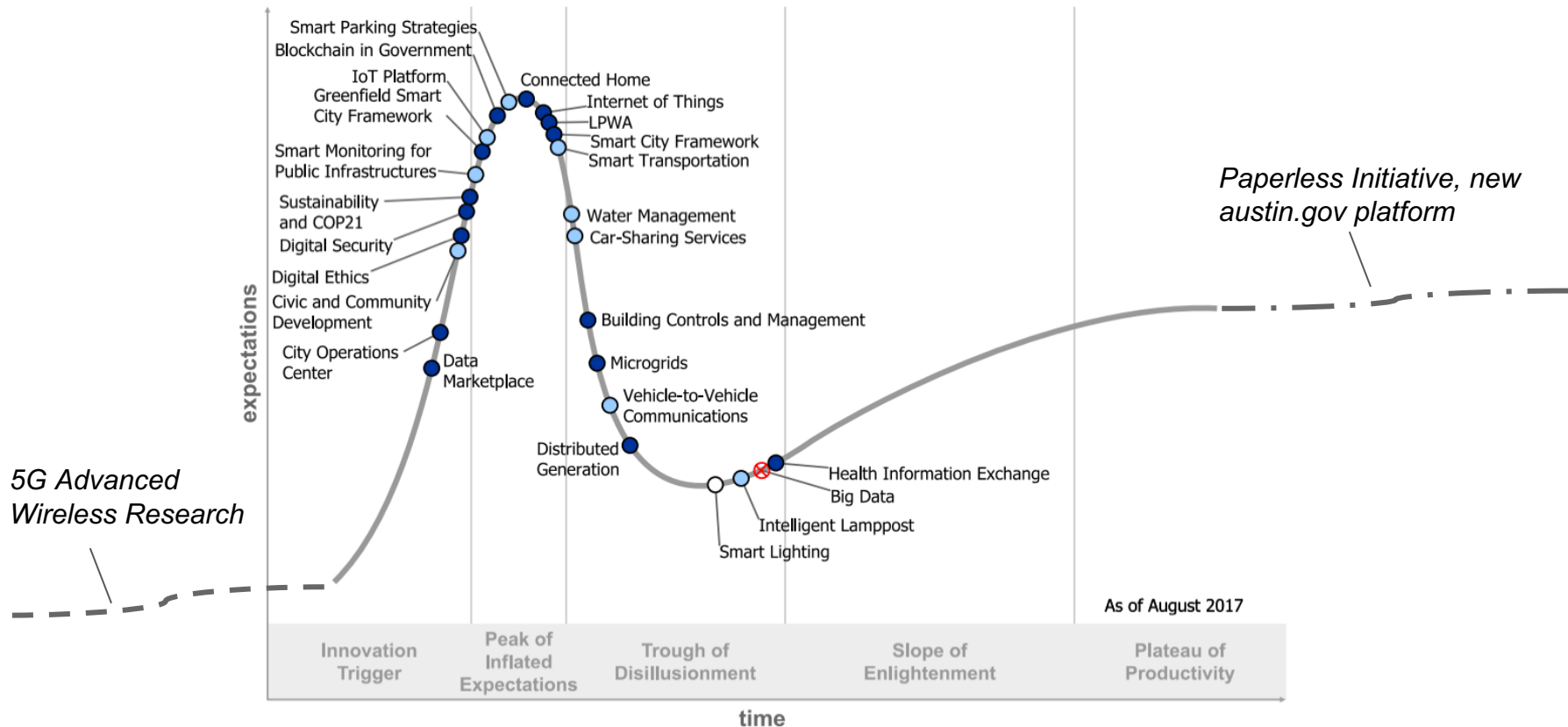
# **| Why the Maturity Model is important**

# Introduction to the Hype Cycle



*We tend to overestimate  
the effect of a technology  
in the short run and  
underestimate the effect in  
the long run.*

# Smart Cities Hype Cycle (plus future and past)



Plateau will be reached:

- less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ more than 10 years
- ⊗ obsolete before plateau

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Gartner**

# What can happen between the peak and the trough

SMART CITY

## The 4 IoT products a smart city needs in 2017

Connected IoT devices are part of the key elements of a smart city. Here are some of the most interesting and useful products for smart cities in 2017.

By Teena Maddox | December 26, 2016, 4:00 AM PST

### 4. Smart streetlights

Connected LED streetlights are the easiest way for a city to add smart tech. One benefit is reduced crime, because the lights automatically brighten when there are multiple people in the area, and dim when no one is around.



The ROI is a no-brainer, with the LED lights saving more on energy costs within a few years than it costs to purchase and install them. In Los Angeles, the city saves nearly \$9 million annually on utility costs as a result of its decision to spend \$57 million to convert nearly 80% of its 215,000 old sodium-vapor streetlights to LED versions.

<http://www.techrepublic.com/article/the-5-iot-products-a-smart-city-needs-in-2017/>

## LED Streetlights Are Giving Neighborhoods the Blues

Early adopters of LED street lighting are struggling with glare and light pollution



<http://spectrum.ieee.org/green-tech/conservation/led-streetlights-are-giving-neighborhoods-the-blues>



## The 4 IoT products a smart city needs in 2017

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### 3. Digital kiosks

A digital kiosk gives information about restaurants, retail stores, and events in the immediate area. It also provides mapping for visitors, and can sync with a mobile phone to give additional data as needed.



<http://www.techrepublic.com/article/the-5-iot-products-a-smart-city-needs-in-2017/>

### OPINION

## The shuttering of those internet kiosks is another tale of two cities


By Nicole Gelinias

September 18, 2016 | 7:45pm



<http://nypost.com/2016/09/18/the-shuttering-of-those-internet-kiosks-is-another-tale-of-two-cities/>





**It's not about stopping progress.  
Methodically researching and  
testing in a human-centered way  
can mitigate these risks.**

# Six Inconvenient Truths about Smart Cities

The Urban Technologist, former IBM UK Executive  
Architect for Smarter Cities

1. The “Smart City” isn’t a technology concept; it’s the political challenge of adapting one of the most powerful economic and social forces of our time to the needs of the places where most of us live and work
2. Cities won’t get smart if their leaders aren’t involved
3. We can’t leave Smart Cities to the market, we need the courage to shape the market
4. Smart cities aren’t top down or bottom up. They’re both.
5. We need to tell honest stories
6. No-one will do this for us – we have to act for ourselves



# How Austin brought the human touch to smart city planning

By Jenny McGrath — Posted on July 31, 2017 3:00 am

<https://www.digitaltrends.com/home/austin-texas-smart-city-technology/>

# Orient to the future, play catch-up, flatten the curve



4

# New Recommended Projects

# Next steps - strategic initiatives, projects

## **Research & Testing Lab for Smart City Initiatives**

A collaborative space where city staff, residents, and technology community can test new technologies

## **Smart & Open Advisory Network**

Networking the technology community with Commissions and the City Manager's Open & Smart Advisory Committee in permanent open dialogue on smart cities

## **Smart Kiosks**

Testing and experimenting with kiosks for wayfinding and other uses in a controlled environment

5

# Discussion