

Smart Cities Strategic Roadmap Update

Community Tech & Telecom Commission
June 14, 2017



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2. **Definition of Smart Cities**
3. **Maturing our Capabilities**
4. **Assessing Opportunities**
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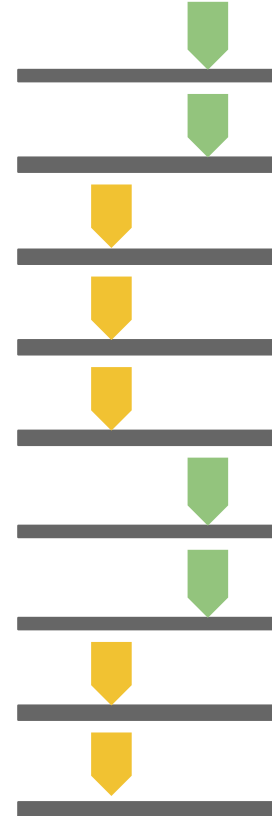
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Resolution Items

Goals

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



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Common, Austin-Centered Definition of Smart Cities




International Standards Organization (ISO) Smart City Definition

A city that dramatically increases the pace at which it improves its sustainability and resilience by fundamentally improving:

- (i) how it engages society,
- (ii) how it applies collaborative leadership methods,
- (iii) how it works across disciplines and city systems, and
- (iv) how it uses data and integrated technologies

in order to transform services and quality of life to those in and involved with the city (residents, business, visitors)



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.

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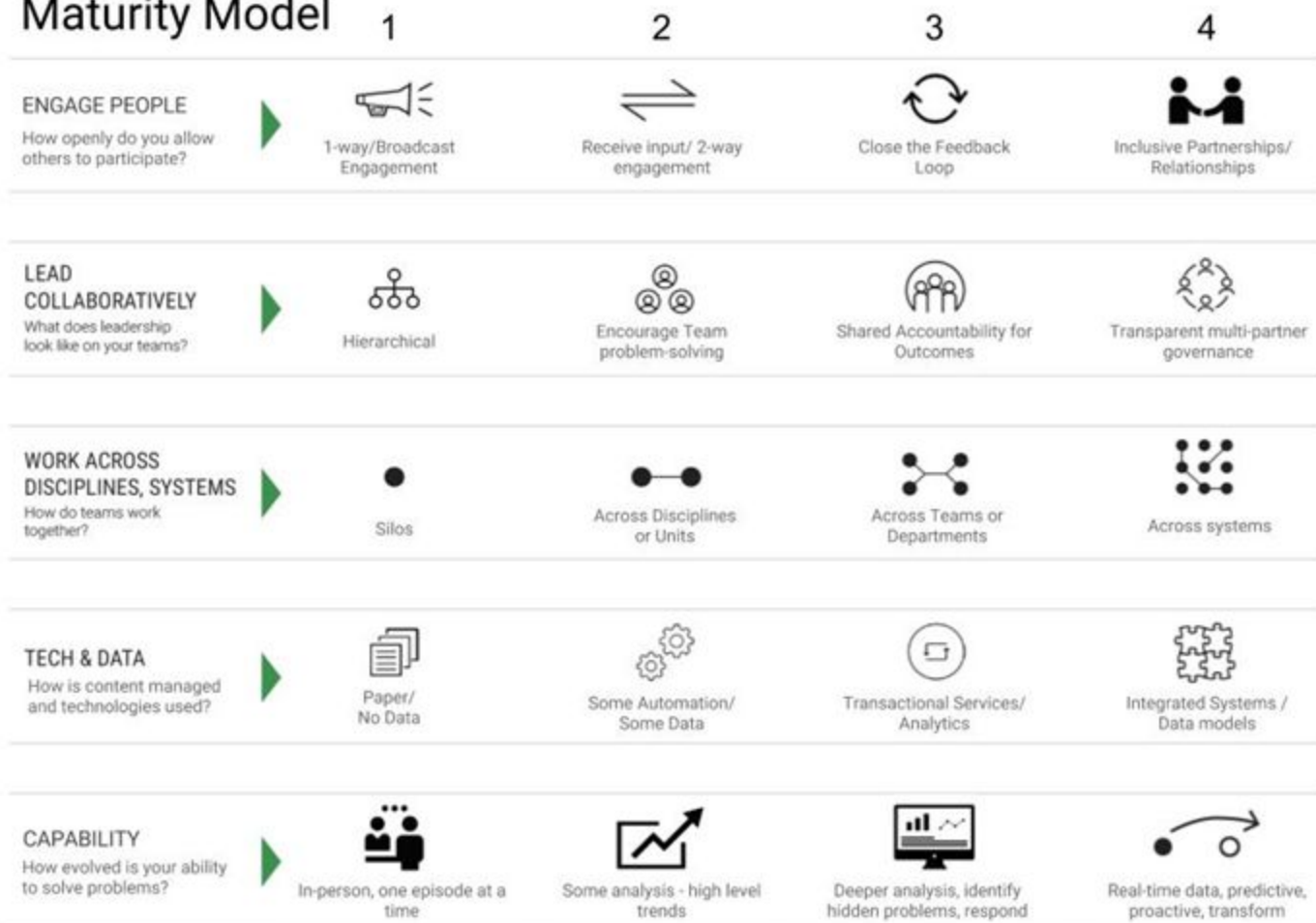
Maturing our Capabilities

“I haven’t seen a smart city, yet.”

- ***Anthony Foxx, former U.S. Secretary of Transportation, during the 2016 USDOT Smart City Challenge***

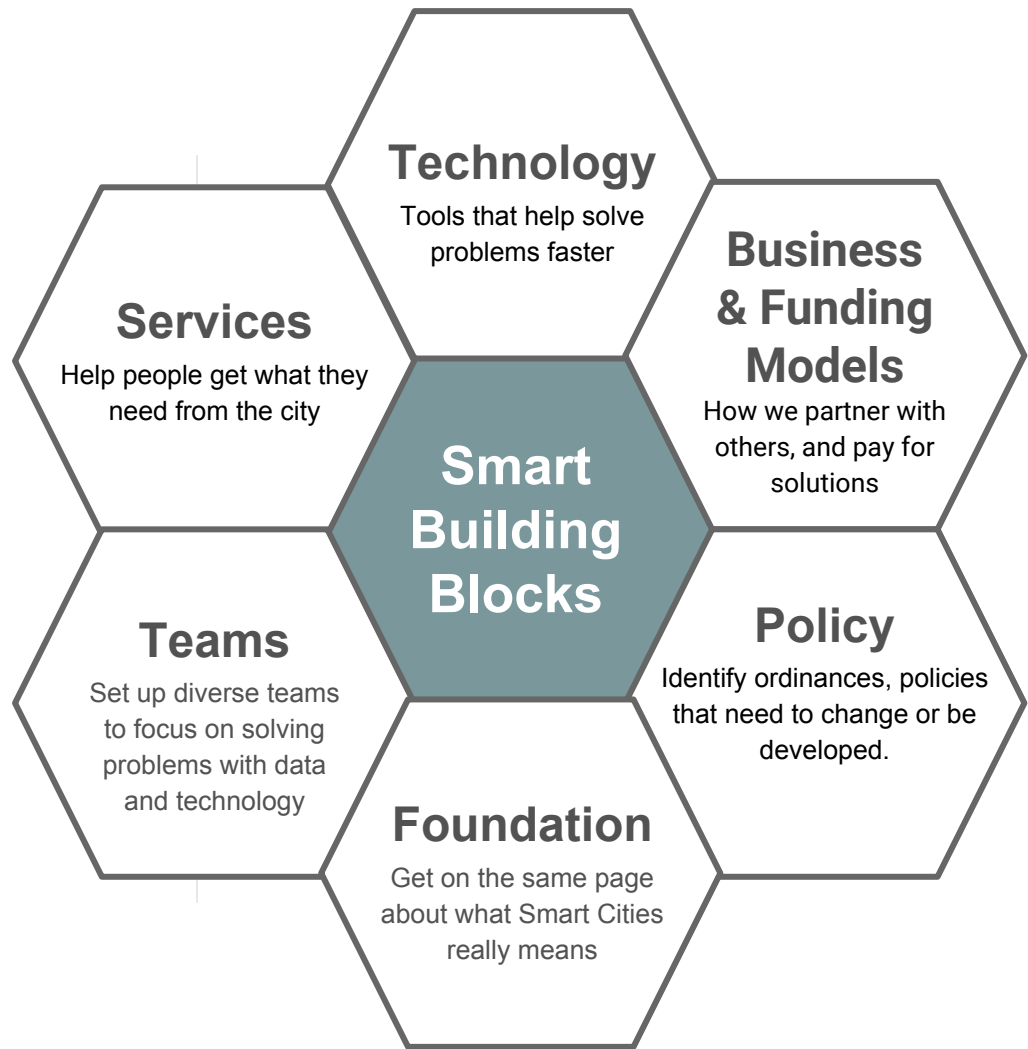
| Smart Cities Maturity Model

Smart Cities Maturity Model



Building Blocks

Core needs, gaps, and capabilities to deliver



“For every technology advance or item, multiple issues need to be addressed that go beyond the technology itself. We must look into policies, relationships, and intended and unintended consequences.”

- City of Austin colleague

Example: Kiosks

Are kiosks a help to citizens or an advertising blight?

Will our sign ordinance and community standards allow for kiosks with advertising?

How much should the public weigh in on kiosks?

How and where would we best use kiosks to benefit the people who need them the most?

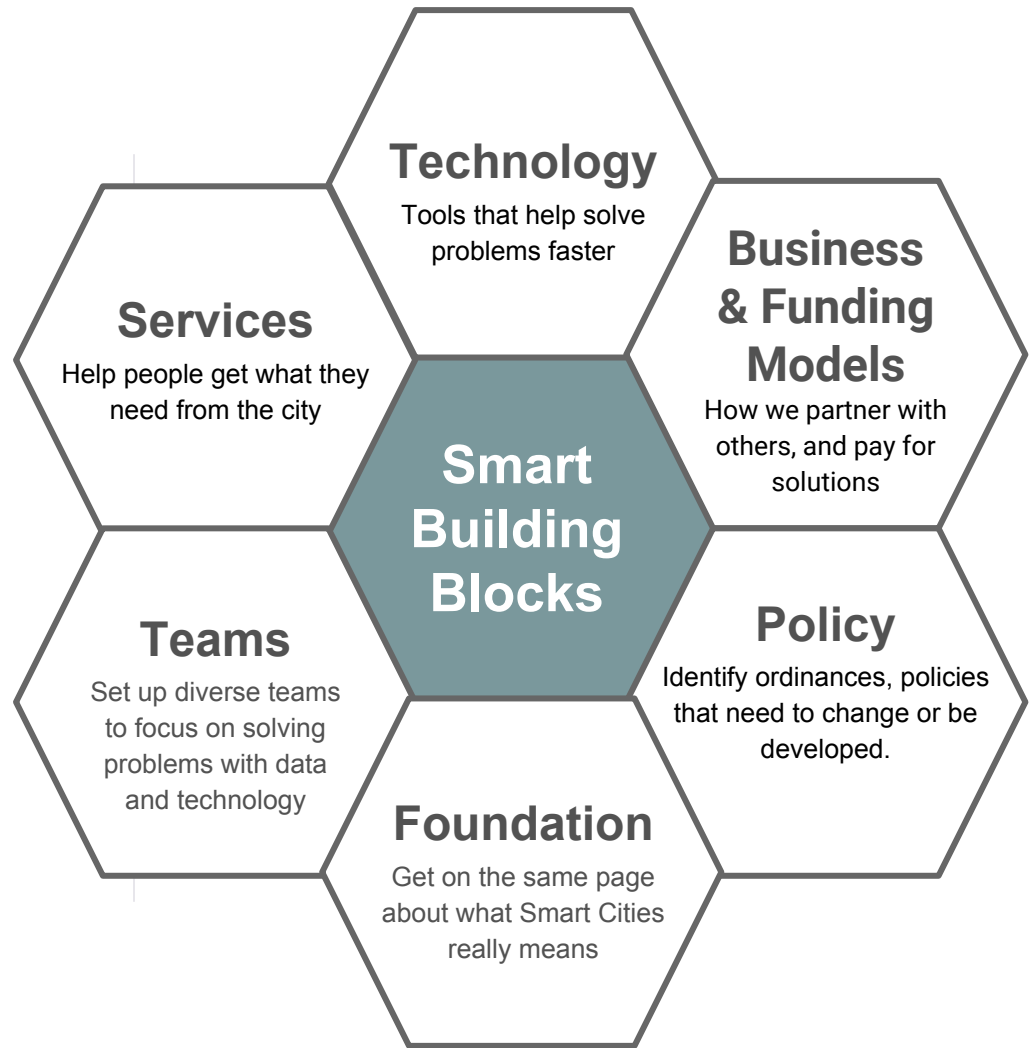


How do we work across jurisdictional lines (like Capital Metro) to assure a partnership approach?

Does the City need to issue an RFP if a company will provide equipment and services free to the City?

Can or should the city erect kiosks if it has to absorb the costs?

Core needs, gaps, capabilities to deliver



Council Strategic Priorities

Council Strategic Priorities



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Assessing Opportunities

Assessment worksheet

Council Priorities

☐

Government
That Works

☐

Mobility

☐

Health

☐

Safety

☐

Economic Opportunity
& Affordability

☐

Cultural & Learning
Opportunities

Building Blocks

☐

Policy

☐

Teams

☐

Services

☐

Services

☐

Business & Funding
Models

☐

Technology

Community Outcomes

☐

Equity

☐

Sustainability

☐

Resilience

Principles to consider

☐

Privacy

☐

Security

☐

Accessibility

Maturity Level

Engagement	1	2	3	4
Leadership	1	2	3	4
Collaboration	1	2	3	4
Digital Services	1	2	3	4
Data	1	2	3	4
Capability	1	2	3	4

**City of Austin Traffic Signal Division
Signal Trouble Ticket**

Location <u>71 @ CENTRAL OF THE HILL</u>	
Intersect # <u>430</u>	APD Case #
Date <u>2-1-17</u>	Weather <u>SUNNY</u>
Source <u>213</u>	
Work Location: <u>SG</u>	Work Type: <u>PM</u>

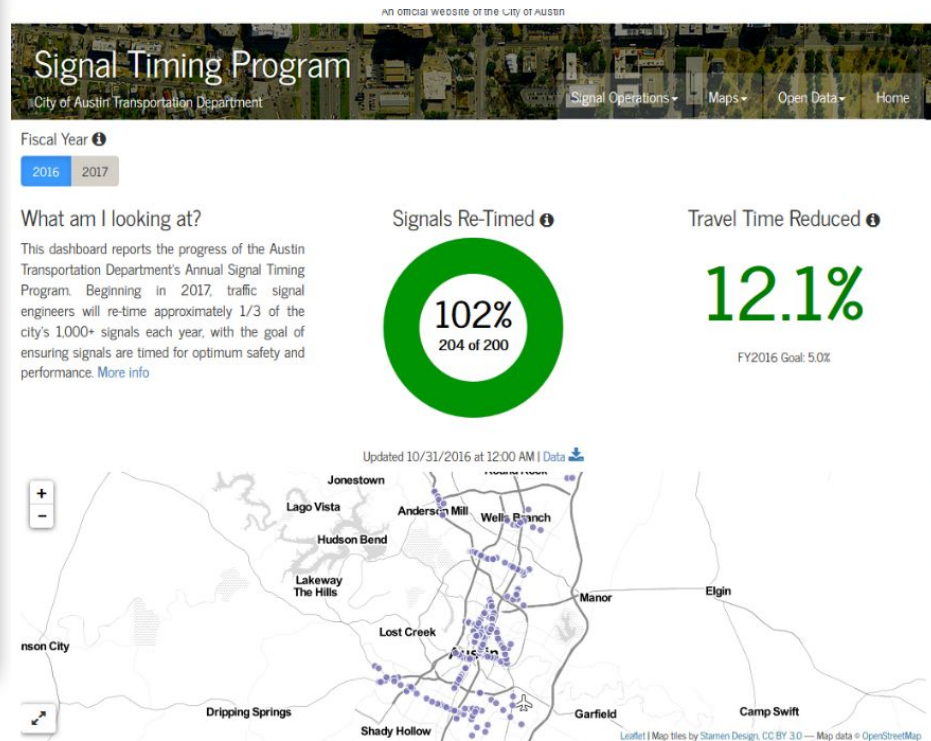
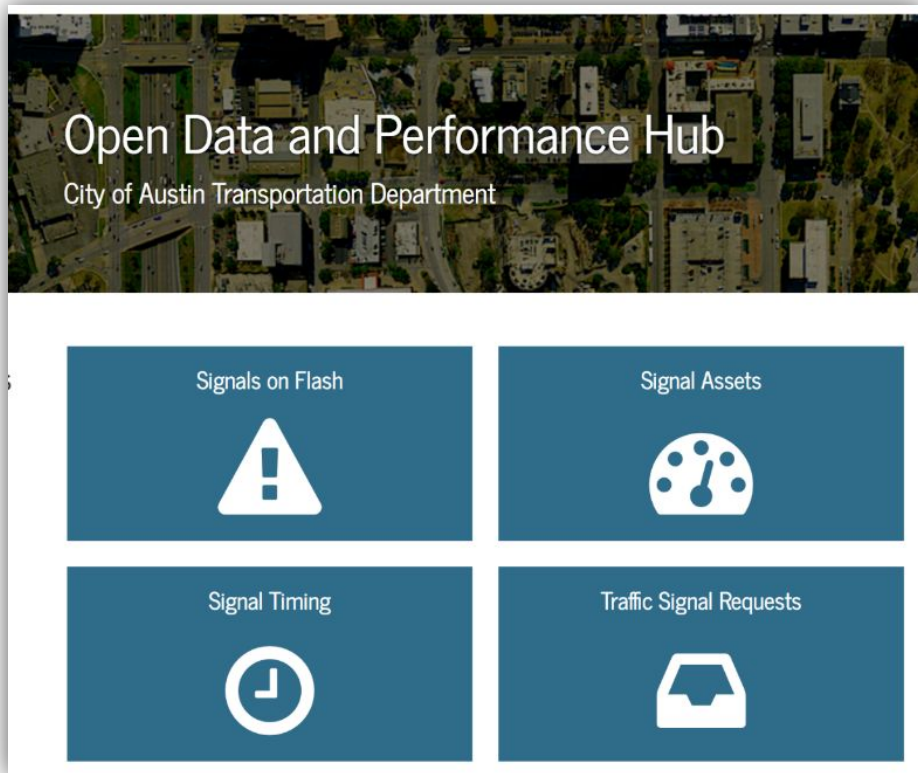
Time Received
Time Arrived @ Loc. <u>9:00</u>
Time Departed Loc. <u>12:00</u>
Time Back @ Shop
Time Back @ Home

Task Order # 2423257000

CSR # no

Trouble Reported / Work Assigned: <u>PM TXDOT</u>	Storm:	Y	N	
	Replace Controller:	Y	N	
	Controller Ver.:	1.4X	1.7X	
	Controller Brand:			
	Loops:	Y	N	
Problem Found: <u>EB AMBER OUT, WB 5 SEC MESA FOR</u> <u>Q3 & Q4 BAD LEAD-IN CABLE</u> <u>EB Q2 SET BACK LOOP PULL BOX -</u> <u>PB COVER DAMAGED</u> <u>WB SIGNAL CABLE HANGING DOWN</u>	Video:	Y	N	
	CMU Fault:			
	UPS Status:	N/A	Y	N
	Pre-empt Working:	N/A	Y	N
	QTY	Materials Used		

transportation.austintexas.io



Assessment: Transportation Data

Council Priorities

<input checked="" type="checkbox"/> Government That Works	<input checked="" type="checkbox"/> Mobility
<input type="checkbox"/> Health	<input type="checkbox"/> Safety
<input checked="" type="checkbox"/> Economic Opportunity & Affordability	<input type="checkbox"/> Cultural & Learning Opportunities

Building Blocks

<input type="checkbox"/> Policy	<input checked="" type="checkbox"/> Teams
<input type="checkbox"/> Services	<input type="checkbox"/> Services
<input checked="" type="checkbox"/> Business & Funding Models	<input checked="" type="checkbox"/> Technology

Community Outcomes

<input type="checkbox"/> Equity	<input checked="" type="checkbox"/> Sustainability	<input type="checkbox"/> Resilience
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Principles to consider

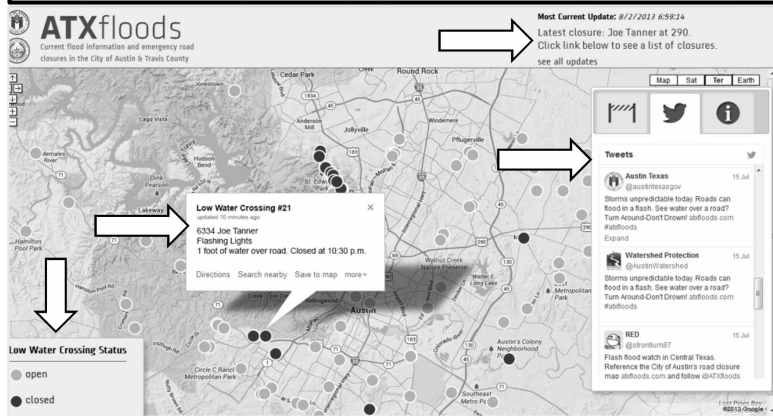
<input type="checkbox"/> Privacy	<input type="checkbox"/> Security	<input checked="" type="checkbox"/> Accessibility
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Maturity Level

Engagement		2		
Leadership			3	
Collaboration		2	3	
Digital Services	1	2	3	
Data	1	2	3	
Capability		2		

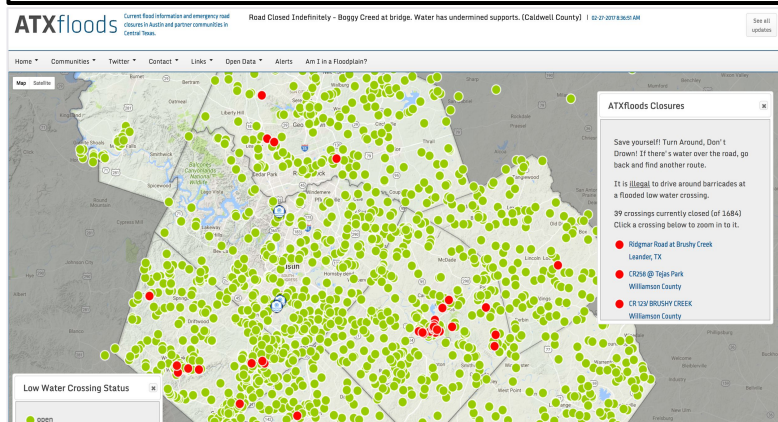
ATXfloods

2012



2012: Created w/ Code for America fellow, handful of data points

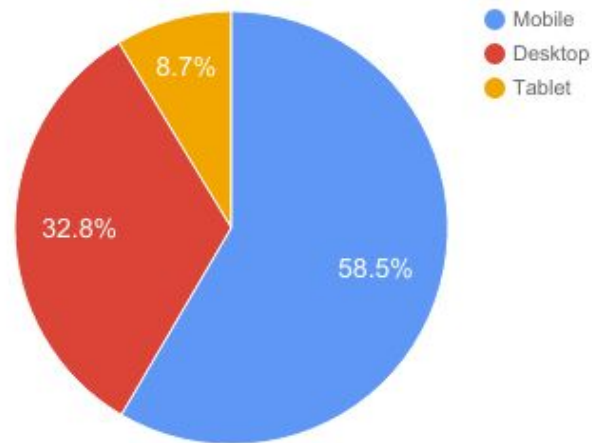
2017



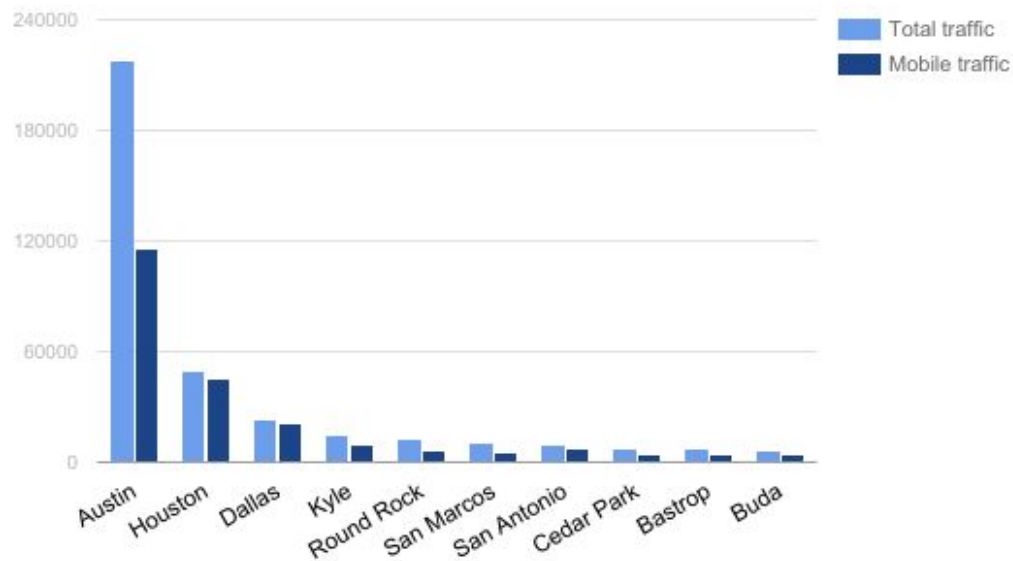
2017: 2500+ data points, growing pains!
-> Texas Water Development Board Grant
-> Design, Technology, Innovation Fellows Team looking into integration with Google Maps, WAZE, first responder tools

ATXfloods

Traffic by Device, 2016



Traffic by City, 2016



Assessment: ATXfloods

Council Priorities

☒ Government That Works

☐ Health

☐ Economic Opportunity & Affordability

☒ Mobility

☒ Safety

☐ Cultural & Learning Opportunities

Building Blocks

☐ Policy

☐ Services

☒ Business & Funding Models

☒ Teams

☐ Services

☒ Technology

Community Outcomes

☐ Equity

☐ Sustainability

☒ Resilience

Principles to consider

☐ Privacy

☐ Security

☒ Accessibility

Maturity Level

Engagement			3	
Leadership			3	
Collaboration			3	
Digital Services		2	3	4
Data			3	4
Capability		2	3	4

Austin Code

- Lack of intuitive & automated enforcement tools
- Increasing Code Enforcement demands
- Keeping pace with new enforcement demands
- Lack of real-time data for field inspectors
- Limited Code education or community collaboration tools



Assessment: Austin Code

Council Priorities

<input checked="" type="checkbox"/> Government That Works	<input type="checkbox"/> Mobility
<input checked="" type="checkbox"/> Health	<input checked="" type="checkbox"/> Safety
<input checked="" type="checkbox"/> Economic Opportunity & Affordability	<input type="checkbox"/> Cultural & Learning Opportunities

Building Blocks

<input type="checkbox"/> Policy	<input checked="" type="checkbox"/> Teams
<input type="checkbox"/> Services	<input type="checkbox"/> Services
<input checked="" type="checkbox"/> Business & Funding Models	<input checked="" type="checkbox"/> Technology

Community Outcomes

<input checked="" type="checkbox"/> Equity	<input type="checkbox"/> Sustainability	<input checked="" type="checkbox"/> Resilience
--------------------------------------------	-----------------------------------------	------------------------------------------------

Principles to consider

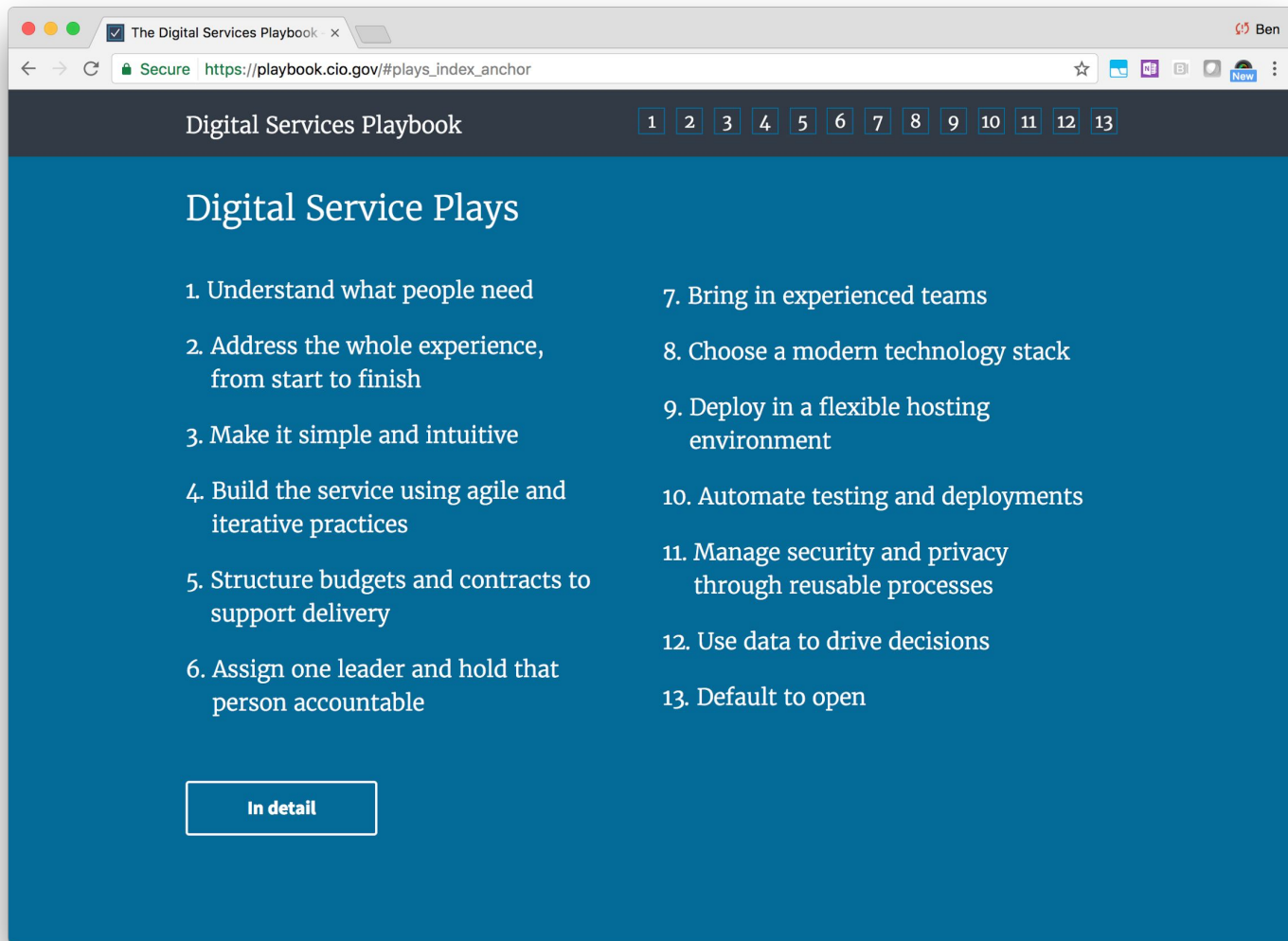
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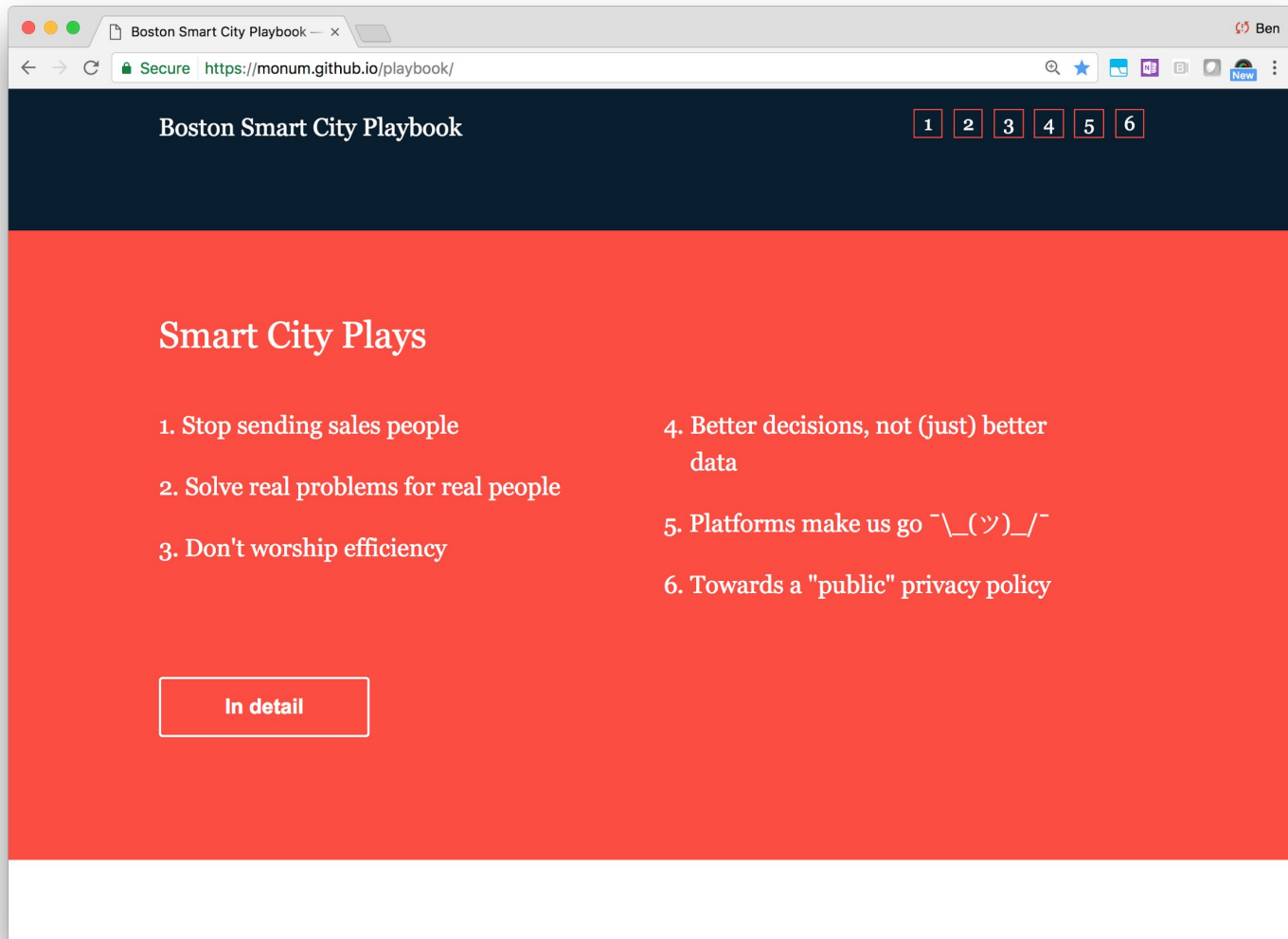
Maturity Level

Engagement		2	3	
Leadership	Not yet assessed			
Collaboration	Not yet assessed			
Digital Services	1	2	3	4
Data	1	2	3	4
Capability		2	3	4

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Next steps





Austin's Playbook

1. Align to Council priorities
2. Budget for discovery to understand user needs
3. Budget for technology
4. Build or buy technology

Digital Services Playbook

1 2 3 4 5 6 7 8 9 10 11 12 13

Digital Service Plays

1. Understand what people need
2. Address the whole experience, from start to finish
3. Make it simple and intuitive
4. Build the service using agile and iterative practices
5. Structure budgets and contracts to support delivery
6. Assign one leader and hold that person accountable
7. Bring in experienced teams
8. Choose a modern technology stack
9. Deploy in a flexible hosting environment
10. Automate testing and deployments
11. Manage security and privacy through reusable processes
12. Use data to drive decisions
13. Default to open










[In detail](#)

Inventory (in progress)

Austin Open and Smart Project Inventory (s...					?	32	
Project Inventory					SHARE		
Spreadsheet view							
Initiative/Project Name							
Council priorities							
Stage							
Project needs							
1	2016 Mobility Bond	Mobility	(1) Intake				
2	ACM Dashboards	Gov that works	(1) Intake	Facilitate collaboration	Funding	Expertise/advice	
3	Agenda Management Software	Gov that works	(1) Intake	Facilitate collaboration	Navigate governance	Expertise/advice	
4	Asian American QOL	Gov that works	Cultural & learning opport	(3) Design	Facilitate collaboration	Expertise/advice	Funding
5	AT&T/CoA/UT Bluetooth Insights Traffic Project	Mobility	(3) Design	Expertise/advice	Authorization/decisions	Funding	
6	Austin Data Exchange and Rodeo	Gov that works	(3) Design	Facilitate collaboration	Expertise/advice	Authorization/decisions	
7	Bloomberg i-teams grant	Gov that works	Economic opportunity & a	(1) Intake	Navigate governance	Authorization/decisions	
8	City Council Agenda Commenting Tool	Gov that works	(3) Design	Funding	Expertise/advice	Navigate governance	
9	CityUP partnership	Gov that works	(3) Design	Facilitate collaboration	Authorization/decisions		
10	Co-creation of an Equity Assessment Tool	Economic opportunity & affordability	Cult	(2) Discovery	Facilitate collaboration	Expertise/advice	Funding
11	Digital Inclusion	Economic opportunity & affordability	Gov	(4) Implement	Facilitate collaboration	Navigate governance	Authorization/decisic
12	Extensible city subscription service (incl. Community Registry)	Gov that works	(1) Intake	Facilitate collaboration	Expertise/advice	Funding	Authorization/
13	FY2015_BNS - Community Digital Services -- ALIS Project 682 & 578 & ...	Economic opportunity & affordability	Gov	(4) Implement	Facilitate collaboration		
14	General Citizen Communication via Videoconferencing	Gov that works	(3) Design	Expertise/advice	Authorization/decisions	Navigate governance	
15	Homelessness Outreach Street Team (HOST)	Safety	Health	Economic opportunity &	(3) Design	Expertise/advice	Facilitate collaboration
16	Idea Accelerator	Gov that works	(3) Design	Facilitate collaboration	Authorization/decisions	Funding	

Goals

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	

Questions?



Appendix

| Hype Cycle - Open Data example

The hype cycle

Open Data in San Francisco:

Institutionalizing an Initiative

Phase 1:



The
Executive
Edict

This period is usually characterized by the creation of an Open Data Policy. Some groups are excited, some are skeptical. Most don't know how to start.

Phase 2:



The
Publishing
Scramble

During the publishing scramble a few or even many datasets are released with great fanfare. Some are high value and make a splash. Metadata needs and data quality may not be addressed.

Phase 3:



The
Period of
Stagnation

After the publishing scramble, low hanging fruit is hard to find. Tough issues, like timely data publishing arise. Some may recognize that those initial datasets have problems.

Phase 4:



The
Resource
Reckoning

New challenges emerge and the initiative lacks a clear path forward. Some recognize that no one "owns" the program and the need to dedicate resources emerges.

Phase 5:

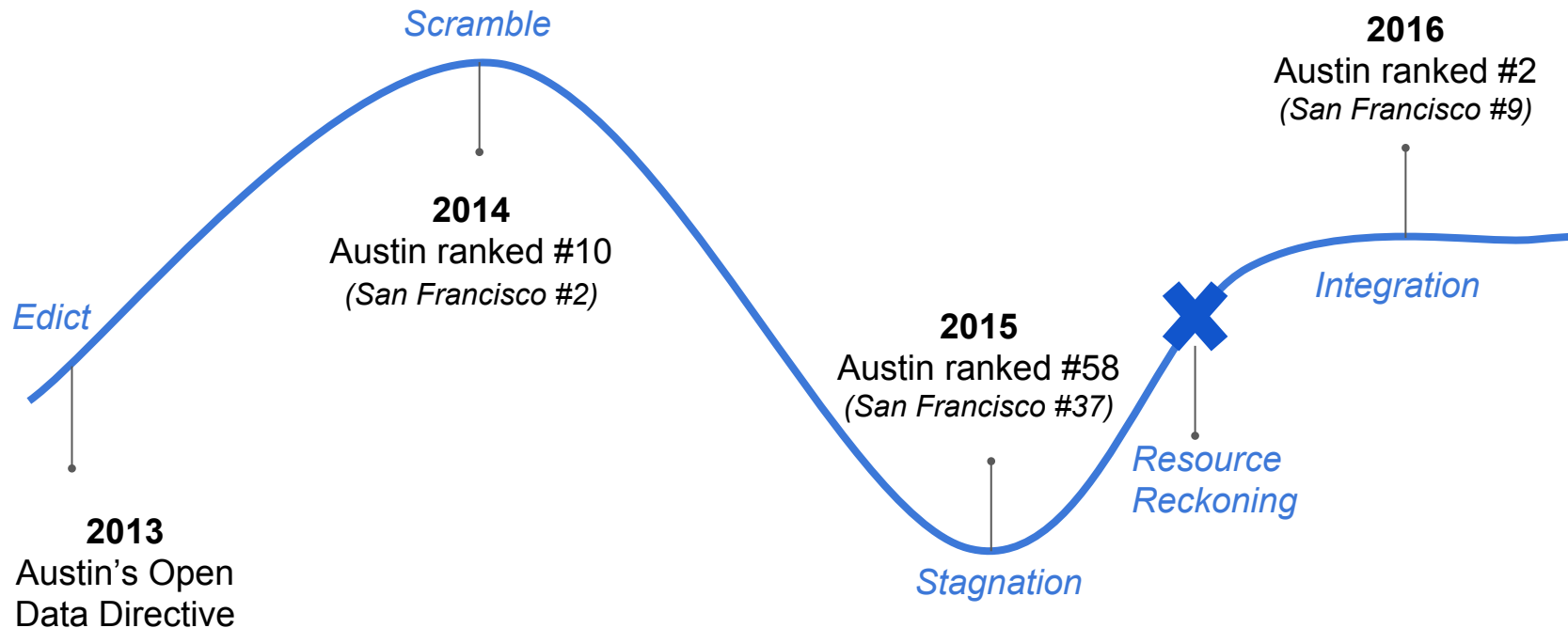


The
Integration of
the Initiative

Open data is a part of doing business. Resources are allocated and data governance, roles and responsibilities, and standards are created and in practice.

Open Data Census - Austin ranking

Benefits of learning from those who went before



| Challenging areas

Challenging terrain

- **Data has power**
 - Massive amounts of data will be collected and used to create value - reward those who contribute if they generate value
 - Do no harm: minimize data collection, and maximize specified purpose for collection
- **Platforms can centralize power**
 - The more people on a platform, the more useful it becomes for each individual user
 - Solve for: exclusion, conflict of interest, interoperability, avoiding vendor lock-in
- **Algorithms can reinforce human prejudice**
 - Be very selective when using predictive algorithms, and attend to unconscious bias.

Smart Foundation

Principles

Defining concepts related to smart cities:

- privacy
- security
- sustainability
- resilience
- accessibility
- equity
- efficiency

Values

How the community prioritizes key principles in terms of desirability, and worth, preparing for inevitable trade-offs:

- privacy – efficiency
- security – accessibility
- efficiency – accessibility

Norms

How the community expresses its values. What we choose as norms are critically important.

- For example, privacy opt-in or opt-out policies