

SMART CITY ROADMAP UPDATE (d) 1.

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February 7, 2019

TODAY'S KEY OBJECTIVES

1. Understand the purpose of the roadmap
 - Promote Collaboration
 - Understand needs
 - Manage for success
2. Understand, agree and commit to the high priority big rock projects and process and projects for small wonders
3. Understand, agree and commit to future status reporting for Civic Innovation and Smart Cities and Service Improvements Committee

AGENDA

1. Key Objectives

2. Smart City Roadmap 2.0:

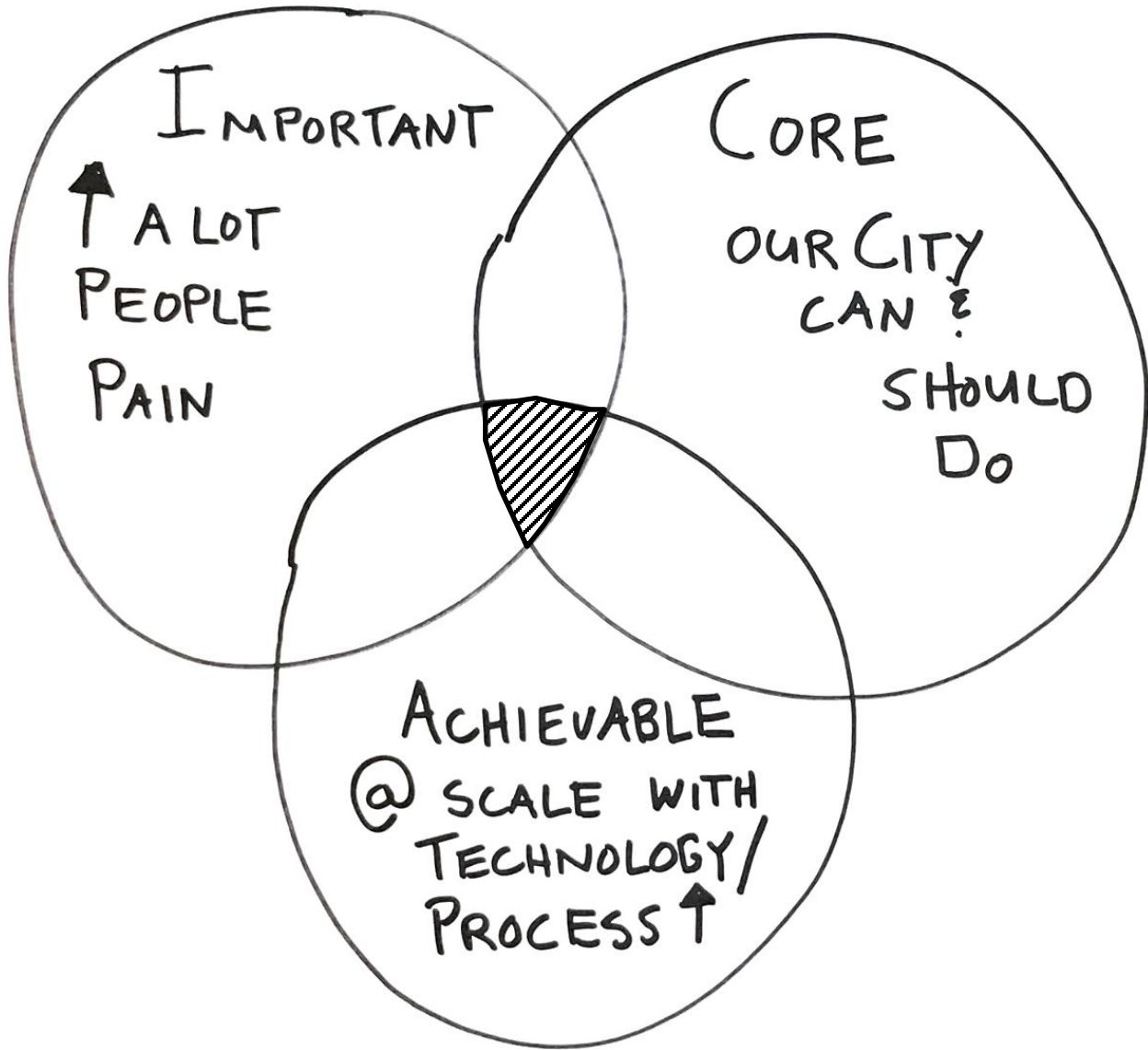
- Smart City Roadmap 2.0 Background
- IT Roadmap Recap
- Update on High Priority Big Rocks Projects
- Update on Small Wonders Pipeline and Projects

3. Build Capacity – Powered by People

4. Project Reporting

SMART CITY ROADMAP 2.0 BACKGROUND

WHAT WE WORK ON

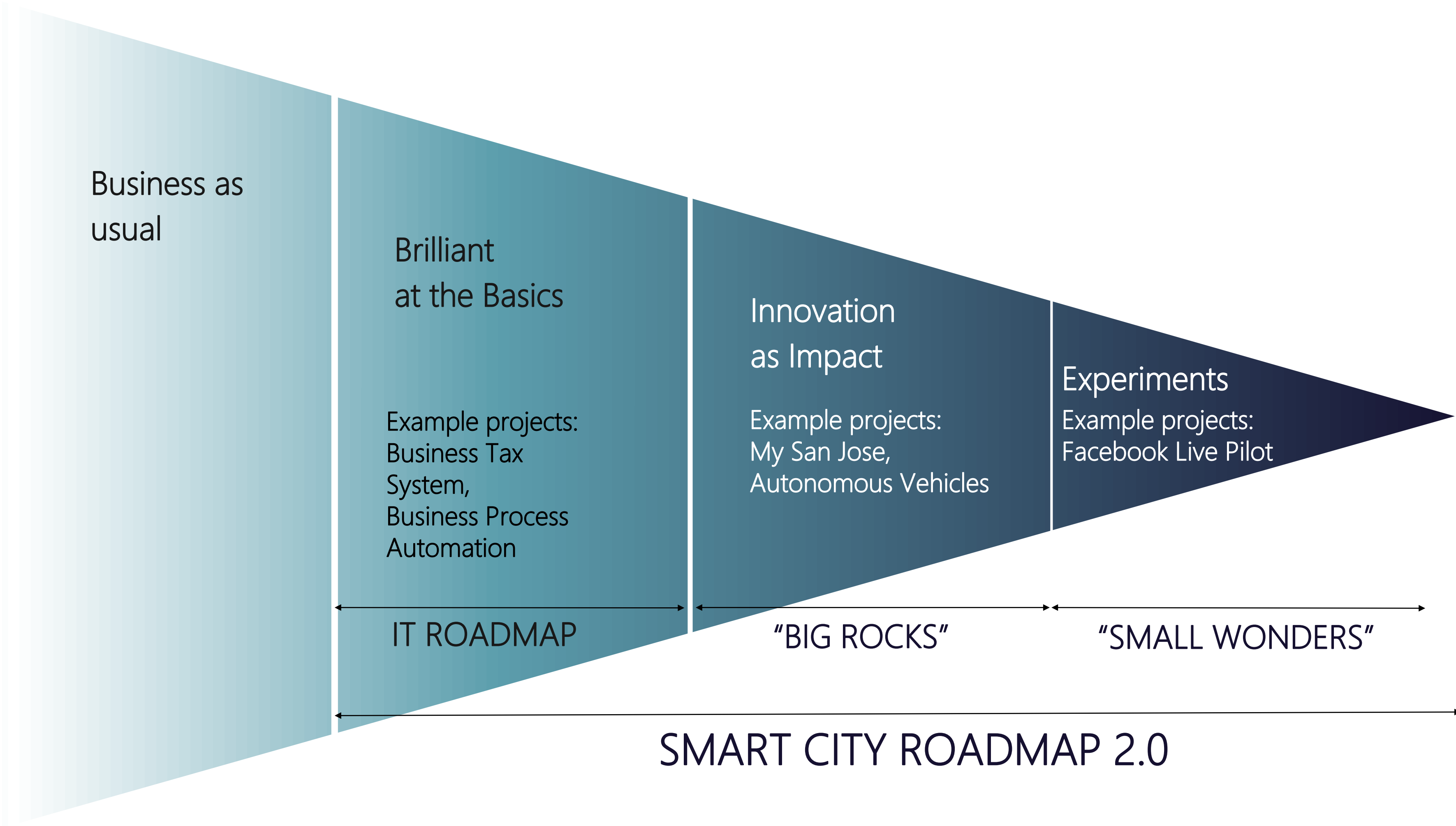


INNOVATION ROADMAP 1.0 (2017)

Process Improvement	Talent Recruitment Initiative	Development Services			
Digital Front Door	My San Jose	Website Redesign			
Smart City Infrastructure	Digital Inclusion & Broadband Strategy	LED streetlights/ anyCOMM pilot	IoT Strategy		
Demo Projects	Facebook Terragraph WiFi	Access Eastside	Silver Spring Networks	Demonstration Policy	
IT Brilliant at the Basics	Citywide Data Architecture	Business Process Automation	Business Tax System	Integrated Permitting System	
Transportation	Autonomous Vehicle RFI	Transportation Events Tracking	Radar Sensor Module Strategy	Vehicle Fleet Telematics	
Safe City	Safe City Strategy	Emergency Mgmt Tech/Data			
Innovation Support	Innovators Network				
PRIORITIZATION	Non-Negotiable Citywide Implementation	Highly Desirable Strategic Investments	Desirable Dept Investments	Demonstration Projects	Emerging Projects

SMART CITY ROADMAP 2.0 BACKGROUND

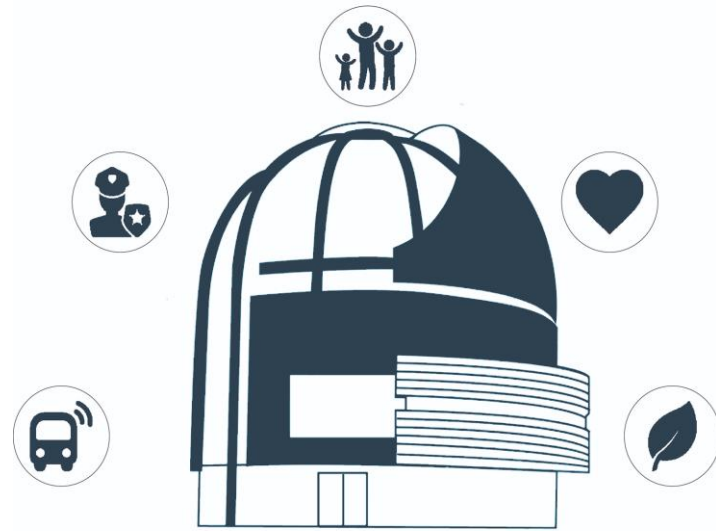
Evolving from innovation roadmap 1.0 to smart city roadmap 2.0



SMART CITY ROADMAP 2.0 BACKGROUND

Connecting the Vision to Implementation

Smart City Vision (2016)



- Safe
- Inclusive
- User-Friendly
- Sustainable
- Demonstration

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Themes for Smart City Roadmap Implementation (2018 - 2020)

SMART
INFRASTRUCTURE

USER-FRIENDLY
GOVERNMENT

SMART
MOBILITY

EQUITY

SAFE CITY

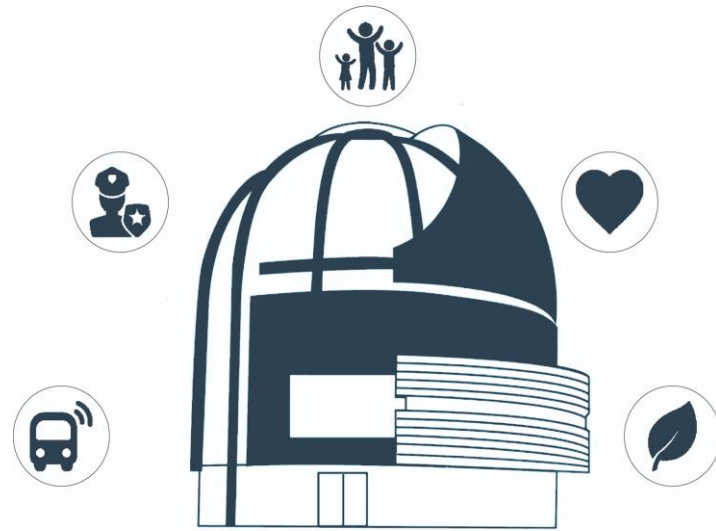
CLIMATE SMART

IT ROADMAP

SMART CITY ROADMAP 2.0 BACKGROUND

Connecting the Vision to Implementation

Smart City Vision (2016)



- Safe
- Inclusive
- User-Friendly
- Sustainable
- Demonstration

Strategies Key:

Developed

In Process

Future

Themes and Strategies for Smart City Roadmap Implementation (2018 - 2020)

SMART INFRASTRUCTURE	USER-FRIENDLY GOVERNMENT	SMART MOBILITY	EQUITY
Broadband Strategy IoT Strategy Unmanned Aerial Vehicle and Systems (UAV/UAS) and Robotics Strategy	Open Data Environment strategy Digital Service Strategy Privacy Strategy Data Strategy Procurement Strategy	Autonomous Vehicles Strategy Emerging Mobility Strategy	Digital Inclusion Strategy Community Wi-Fi strategy Incubator Strategy Homelessness
SAFE CITY	CLIMATE SMART	IT ROADMAP	
Emergency Management Roadmap Safe City Strategy	Climate Smart Plan My San Jose 2.0 EV strategy	Rebuild IT Team Secure City Re-platform to Modern Execute and Sustain Special Priority Initiatives	

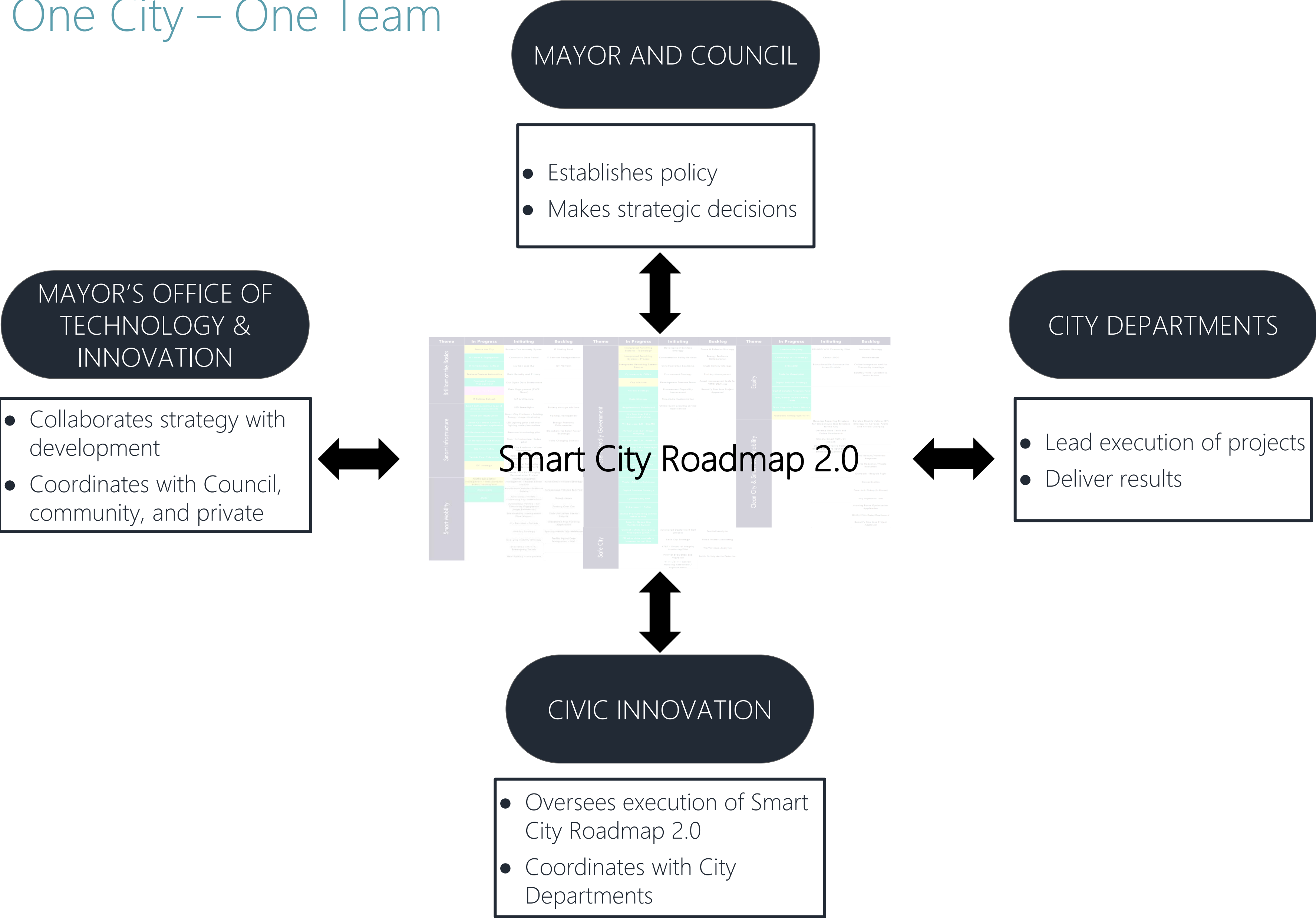
SMART CITY ROADMAP 2.0 BACKGROUND

Theme	In Progress	Initiating	Backlog	Theme	In Progress	Initiating	Backlog	Theme	In Progress	Initiating	Backlog
Brilliant at the Basics	Secure the City	Business Tax Amnesty System	IT Sinking Fund	User-Friendly Government	Integrated Permitting Systems - Technology	Development Services Strategy	Drone & Robotics Strategy	Equity	Landlord Registry	ESUHS WiFi Community Pilot	Incubator Strategy
	IT Talent & Engagement	Community Data Portal	IT Services Reorganization		Integrated Permitting Systems - Process	Demonstration Policy Revision	Energy Resiliency Collaboration		Community Wi-Fi strategy	Census 2020	Homelessness
	IT Infrastructure Refresh	My San Jose 2.0	IoT Platform		Integrated Permitting System - People	Civic Innovation Bootcamp	Engie Battery Storage		STEM pilot	Educational Performance for Access Eastside	Online Interpreter tool for Community Meetings
	Business Process Automation	Data Security and Privacy			Cybersecurity Office	Procurement Strategy	Parking Management		Tech for Good pilot		ESUHS WiFi - Overfelt & Yerba Buena
	Products/Projects Management	City Open Data Environment			City Website	Development Services Team	Asset management tools for PRNS O&M use		Digital Inclusion Strategy		
	Business Tax System	Data Engagement (SVCF Grant)			Privacy Strategy	Procurement Capability Improvement	Beautify San Jose Project Approval		Digital Inclusion Program Fund		
	IT Policies Refresh	IoT Architecture			Data Strategy	Timedocks Modernization			Joint/School Issued Library Cards		
					Neighborhood Dashboard	Online Event planning service ticket service			Data Migration Tool - Library		
Smart Infrastructure	Small Cell permitting team & process improvements	LED Streetlights	Battery storage solutions		My San Jose 2.0 - Abandoned Vehicle			Clean City & Smart Sustainability	Facebook TerraGraph Wi-Fi		
	Small cell deployment	Smart City Platform - Building Energy Usage Monitoring	Parking Management		My San Jose 2.0 - Graffiti					Develop Reporting Structure for Greenhouse Gas Emissions for the City	Develop Electric Vehicle (EV) Strategy to Advance Public and Private Charging
	Small Cell street furniture asset management application	LED Lighting pilot and smart lighting nodes/controllers	Energy Resiliency Collaboration		My San Jose 2.0 - Illegal Dumping					Develop Data Tools and Online Dashboard	
	LED Replacement in Downtown	Structural Monitoring pilot	Blockchain for Solar Power Exchange		My San Jose 2.0 - Pothole					Climate Smart Pathway Model	
	IoT Reference Architecture	Smart Infrastructure Nodes pilot	Volta Charging Stations		My San Jose 2.0 - Streetlight Outage					Develop Innovative Policies and Programs to Spur Energy Efficiency in Commercial	
	Dig Once Policy	Smart City Platform - Water Management			My San Jose 2.0 - General Request						Food Rescue/Homeless Response
	Vehicle Fleet Telematics	Vision Zero Intersection Monitoring Services Pilot			Facebook Live and Analytics						Source Reduction/Waste Reduction
	EV strategy	Vehicle Fleet Telematics - Verizon Connect/AWS			Smart City Analytics						Outreach - Recycle Right
Smart Mobility		Sender Yard EV Charging Demonstration Project		Safe City	My San Jose 2.0 - Address Change						Contamination
	Traffic Congestion Management - Transportation Events Tracking and	Traffic Congestion Management - Radar Sensor Module	Autonomous Vehicles Strategy		Digital Services Strategy						Free Junk Pickup (In House)
	UrbanLogiq	Autonomous Vehicle - Network Safety	Autonomous Vehicles Bus/Ped		Cybersecurity RFP						Fog Inspection Tool
	CVEP	Autonomous Vehicle - Connecting key destinations	Smart Moves		Cybersecurity Policy						Mowing Route Optimization Application
		Autonomous Vehicle - AV Community Engagement (Knight Foundation)	Parking Cash Out		Online Event planning service ticket service						GHG/IWM Data/Dashboard
		Sustainability Management Plan (Airport)	Curb Utilization Sensor Insights		Security Queue Line Monitoring System						Beautify San Jose Project Approval
		My San Jose - Pothole	Integrated Trip Planning Application								
		Mobility Strategy	Spading Needs Trip Assistance		Central Vehicle Emergency Preemption (CVEP)	Automated Deployment Call process	Footfall Analytics			In Progress: On schedule, on-budget	Initiating
		Emerging Mobility Strategy	Traffic Signal Data Integration - Intel		FD using data analysis to improve turnout time	Safe City Strategy	Flood Water Monitoring			In-Progress: Minor Schedule or Budget Delay	Backlog
		Sinewaves with VTA - Preempting Transit				AT&T - Structural Integrity Monitoring Pilot	Traffic video Analytics				
		New Parking Management				FirstNet Evaluation and Migration	Public Safety Audio Detection			In-Progress: Major Schedule or Budget Delay	
						9-1-1 / 3-1-1 Contact Handling Assessment / Improvements					

- There is a lot of innovation already happening in the City!
- Prioritize projects
- Execute for success

SMART CITY ROADMAP 2.0 BACKGROUND

One City – One Team



QUESTIONS OR FEEDBACK?

AGENDA

1. Key Objectives

2. Smart City Roadmap 2.0:

- Smart City Roadmap 2.0 Background
- **IT Roadmap Recap**
- Update on High Priority Big Rocks Projects
- Update on Small Wonders Pipeline and Projects

3. Build Capacity – Powered by People

4. Project Reporting

IT ROADMAP - RECAP

REBUILD | SECURE | MODERNIZE | EXECUTE & SUSTAIN | SPECIAL INITIATIVES

Final Year of 2017-2019 Innovation and Technology Strategic Plan

ACTIVE PRIORITIES

- Cybersecurity Work Plan
- Business Process Platform and Solutions
- IT Infrastructure Refresh
- City Data Environment and Data Engagement
- My San Jose 1.x to 2.x
- Financials System Upgrade
- Business Tax Amnesty and then Business Tax System
- Audit Resolutions

IT PORTFOLIO MAP 2017-2019

(Updated: 12/2018)

	Active				Done				
Innovation Roadmap	Business Tax System	Integ Permit System	Open Data Environment	Business Tax Amnesty			IT Strategic Plan	My San Jose 1.X	Access Eastside 1
	Facebook Terragraph	My San Jose 2.X	Data Portal and Stories	IoT Architecture			Transportat Data Story	IT Advisory Board	Open Data Architecture
Team	Skills Plans				ERP Staffing	Proj Success 5% ↑ 79%	Engagement 8%ile ↑ 29%ile	Vacancy 36% ↑ 10%	Cust Sat 74% ↑ 96%
Secure / Reliable	Privacy, Data, and Use	Cybersecurity Policy		Emergency Mgmt Tech	Security Scanning	Cybersecur Team	Secondary Data Center	PCI Compliance	Cyber Intel Alliance
	Cybersecurity RFP	Security Training	Availability 99.1% ↗ 99.6%	New Emerg Ops Center		City Hall Wireless	Incident Response	Cloud Apps Architecture	Secure Processing
Modernize & Execute	Bus Process Automation	Financials Upgrade	Infrastructure Modernization	Identity Management	eSig Policy & Ordin	Prod-Project Management	HR Mgmt Upgrade	Talent Mgmt System	Payroll Upgrade
	Enterprise Content Mgmt	City Website Integrations	Smart Irrigation	Reprographic Management	Virtual PCs	Budget System	Treasury System	Revenue Mgmt System	Work Comp Sys/Vendor
				Modernization Fund	Mobile Collaborat	Microsoft Licensing	Utility Billing System	3-1-1/CRM System	Business Tax Registration
Audits	Technology Deployments	Mobile Devices	General Controls	External Financials					Call Handling Audit

IT STRATEGIC PLAN STATUS UPDATE IN MARCH 2019

IT ROADMAP RECAP



Brilliant at
the Basics

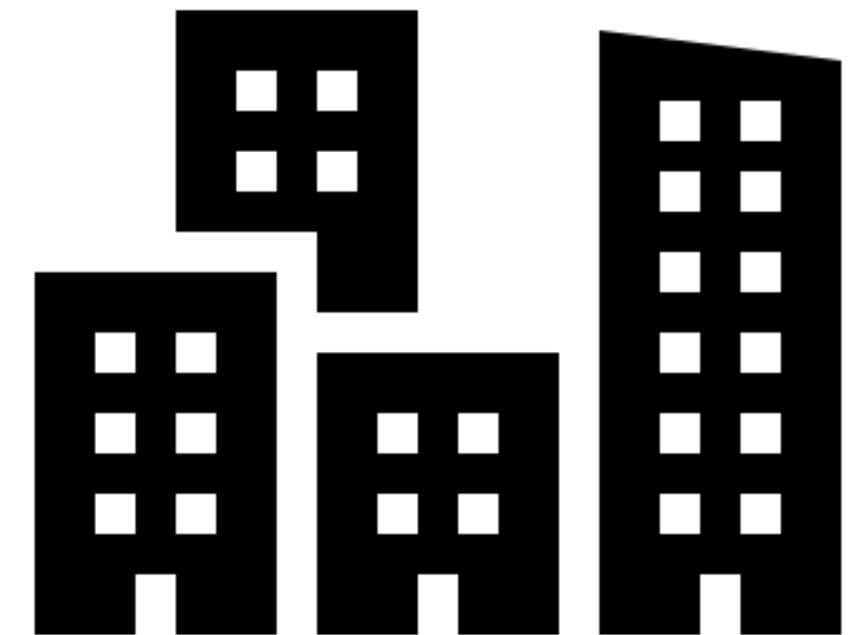


Win Our
Races



Change
the Game

=



City as a
Platform

ELIMINATE TECH DEBT.
ENABLE THE DEPARTMENTS AND TEAMS.

QUESTIONS OR FEEDBACK?

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STATUS UPDATE ON HIGH PRIORITY BIG ROCKS PROJECTS

Three criteria used for prioritization

IMPACT	RISK	DIFFICULTY/EASE TO IMPLEMENT
<ul style="list-style-type: none">• Community benefit• Operations improvement• Efficiency/effectiveness	<ul style="list-style-type: none">• Opportunity cost• Scalability	<ul style="list-style-type: none">• Complexity• Trailblazers
HIGH MEDIUM LOW	HIGH MEDIUM LOW	HIGH MEDIUM LOW

- A high rating on all three resulted in an overall High project rating
- High overall rating = projects prioritized for reporting to committee

HIGH PRIORITY BIG ROCKS PROJECTS

IT Roadmap			User-Friendly Government			Equity		
Theme	In Progress	Initiating	Theme	In Progress	Initiating	Theme	In Progress	Initiating
	IT Staff Skill-Up & Engagement			Integrated Permitting Systems	Development Services Transformation		Community Wi-Fi Strategy	Dahlia (Affordable Housing Availability)
	Products Management-Projects Execution			Digital Services Strategy	Procurement Capability Improvement		Digital Inclusion Strategy	AT&T Tech for Good Pilot (Digital Literacy/Seniors)
	Advanced Cybersecurity Products and Services RFP			My San Jose 2.0	Procurement Strategy		Digital Inclusion Program Fund	Verizon STEM (Digital Literacy/Students)
	Cybersecurity Policy			City Website			Rent Registry (Apartment Rent Ordinance)	
	Cybersecurity Work Plan			Master Address Database Integration (Phase 2)			Data Migration Tool - Library	
	IT Infrastructure Modernization			Data Strategy			Joint/School Issued Library Cards	
	Community Engagement through Data			Start up in Residence (STIR) program				
	City Open Data Environment			Privacy Strategy				
	Business Tax System							
	Business Tax Amnesty Solution							

HIGH PRIORITY BIG ROCKS PROJECTS – CONTINUED

Theme			Theme			Theme		
In Progress			In Progress			In Progress		
Initiating			Initiating			Initiating		
Smart Infrastructure	Small Cell Permitting and Process Improvements	Smart City Platform - Building Energy Usage Monitoring	Safe City	Fire Department Business Intelligence	Safe City Strategy	Climate Smart	Develop Reporting Structure for Greenhouse Gas Emissions for the City	
	Small cell Deployment	Irrigation Sensor Connectivity - CalSense		Fire Station Alerting System	Dual Network Connectivity of Fire Apparatus(Coverage)		Develop Data Tools and Online Dashboard - Phase 1	
	Facebook Terragraph Wi-Fi	Smart Digital Infrastructure Nodes pilot		Silicon Valley Regional Communication System (SVRCS)	Police Department Business Intelligence		Roadmap to Eliminate Natural Gas in Residential Housing (Bloomberg)	
	IoT Reference Architecture	Vehicle Fleet Telematics - Verizon Connect - Phase 2		FirstNet Evaluation and Migration	Smart Digital Infrastructure Nodes - ATT pilot		EV strategy	
		AT&T Community Wifi at Community Centers with Parks			Fusion/Data Collection Center			
		Macro Towers Deployment			Text to 911 (Sub Project to Next Gen 911)			
Smart Mobility	Transportation Events Tracking and Management (E-tracker)	Verizon Traffic Data Service Pilot			EOC Damage Assessment GIS tools and capabilities			
		Autonomous Vehicle - Connecting Key Destinations			Vision Zero Intersection Safety Analytics Pilot			
		Emerging Mobility Strategy						

QUESTIONS OR FEEDBACK?

ANY PROJECTS NEED TO BE ADDED/REMOVED
FROM FUTURE REPORTING?

AGENDA

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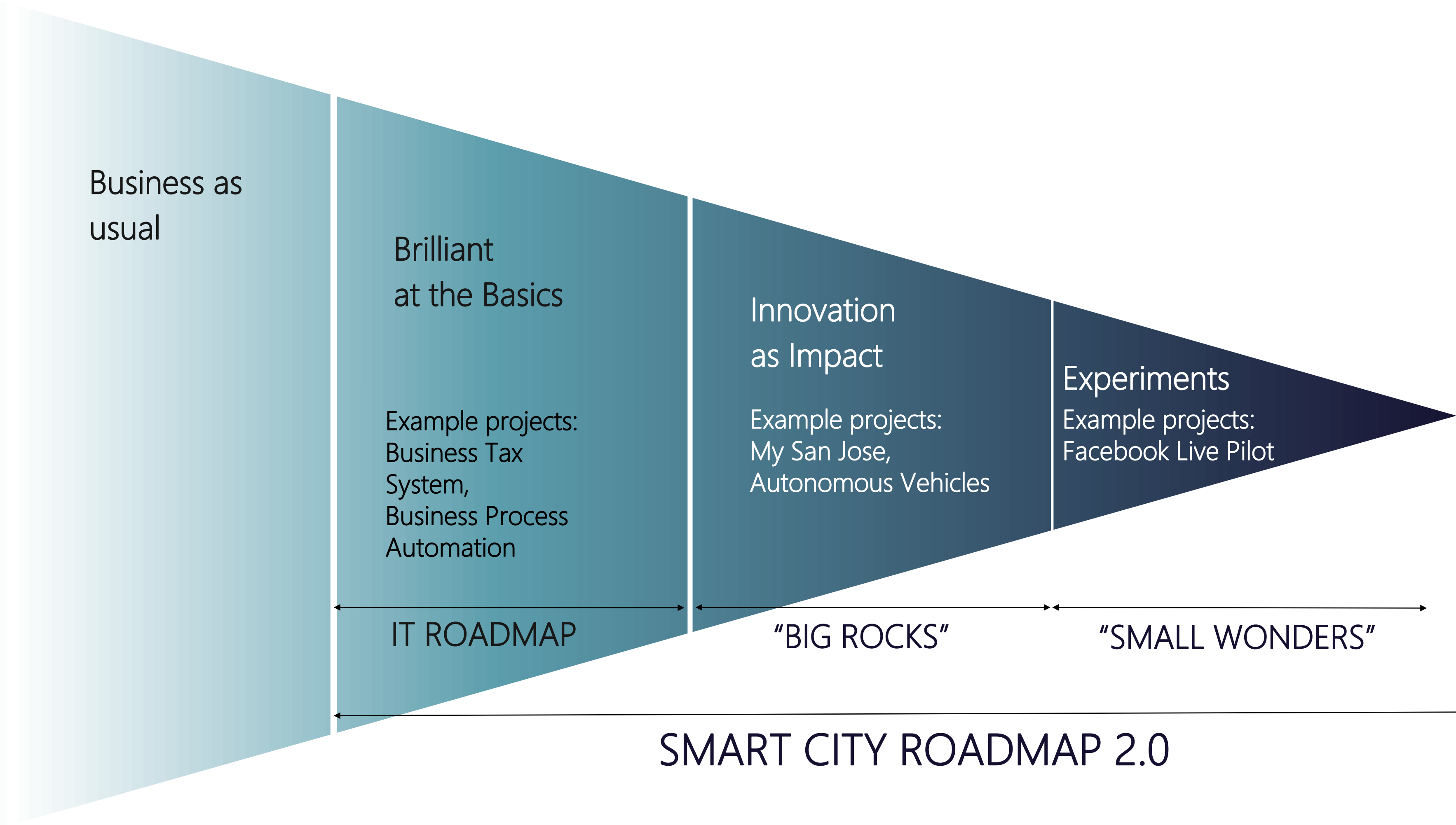
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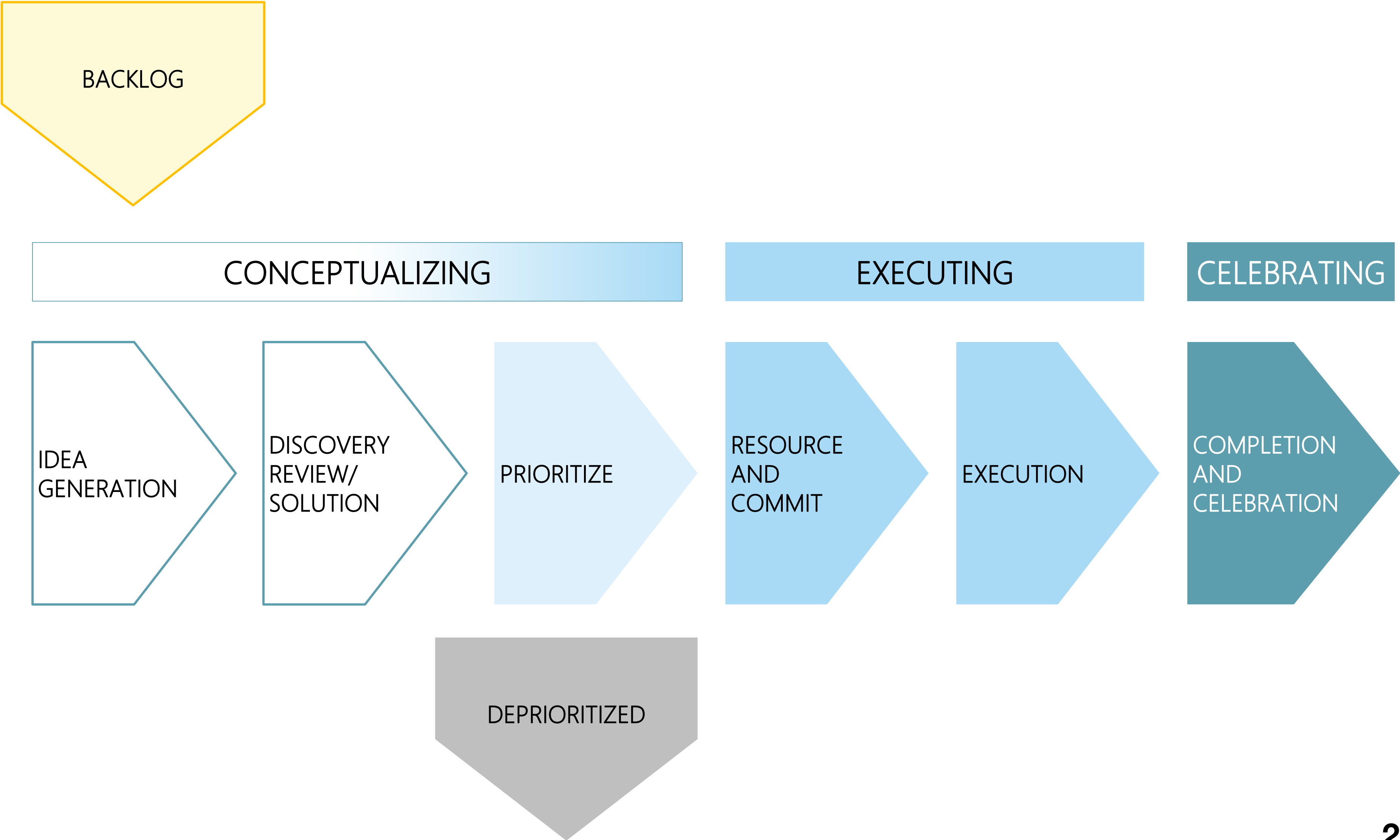
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UPDATE ON SMALL WONDERS PIPELINE AND PROJECTS



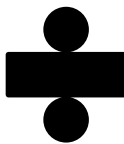
PROCESS UPDATE ON SMALL WONDERS PIPELINE



PROCESS UPDATE ON SMALL WONDERS PIPELINE

PRIORITY	QUESTIONS
Important to our community +	For the community, is there a penalty or adverse consequences if we delay? How many residents will the project impact? How much change the project will create to each resident? How will this new technology improve quality of life for future residents?
Core to what the City does +	For the City, is there a penalty or adverse consequences if we delay? Is there a fixed deadline for the City? Are there other critical projects that may be impacted by this project? How much resource (fund, staff capacity) is needed? Is there redundancy?
Achievable at Scale +	Is the problem solvable at scale using technology or process improvements? How scalable is the project?
Get ready for the future +	Is there additional value we will get out of this project? Is there value in the information we will receive? Does this reduce the risk of this project or future projects? Will this project open up other opportunities? Will this help the City be forward thinking for the future? Why should the City have it?

COST OF
DELAY



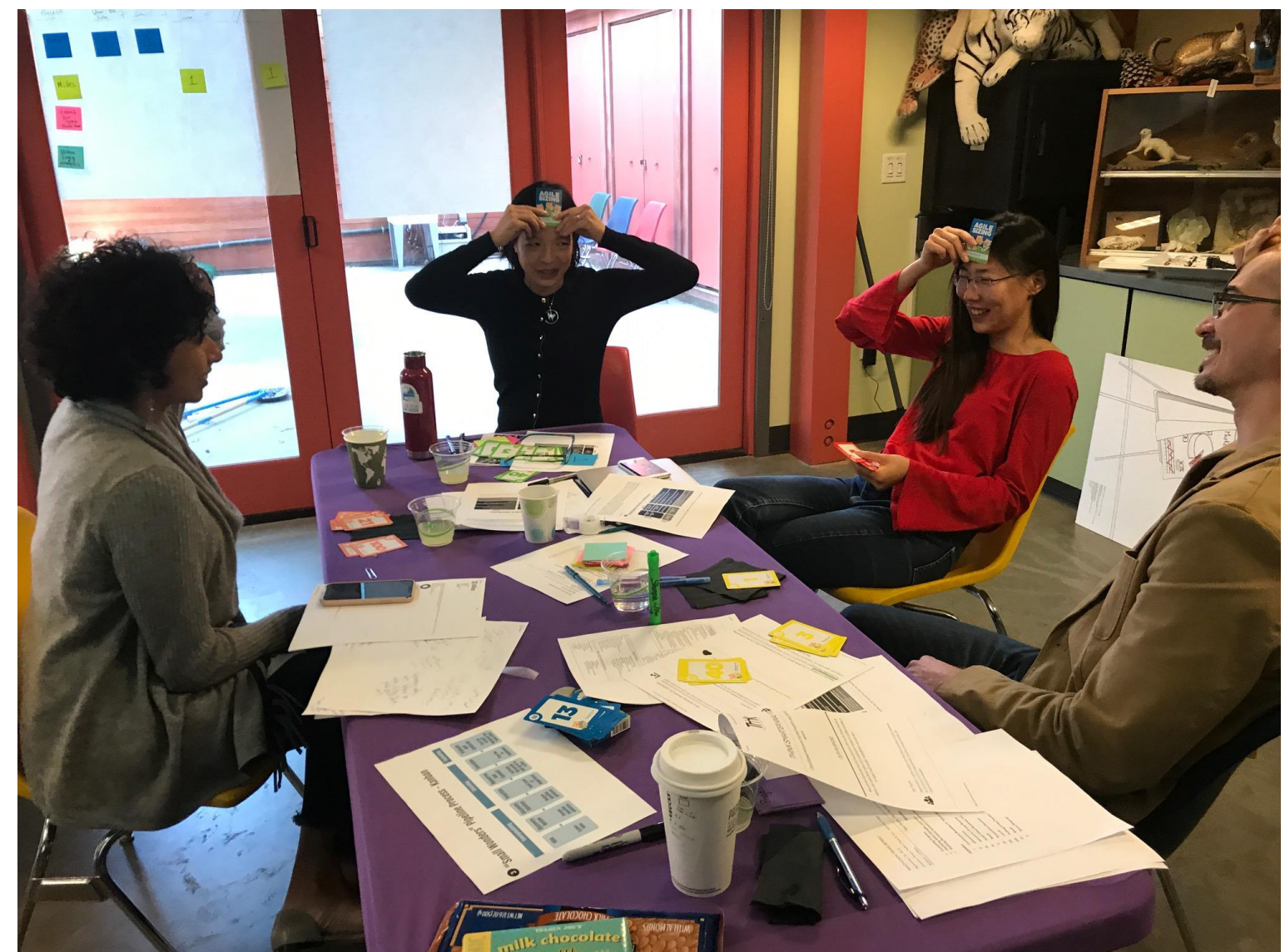
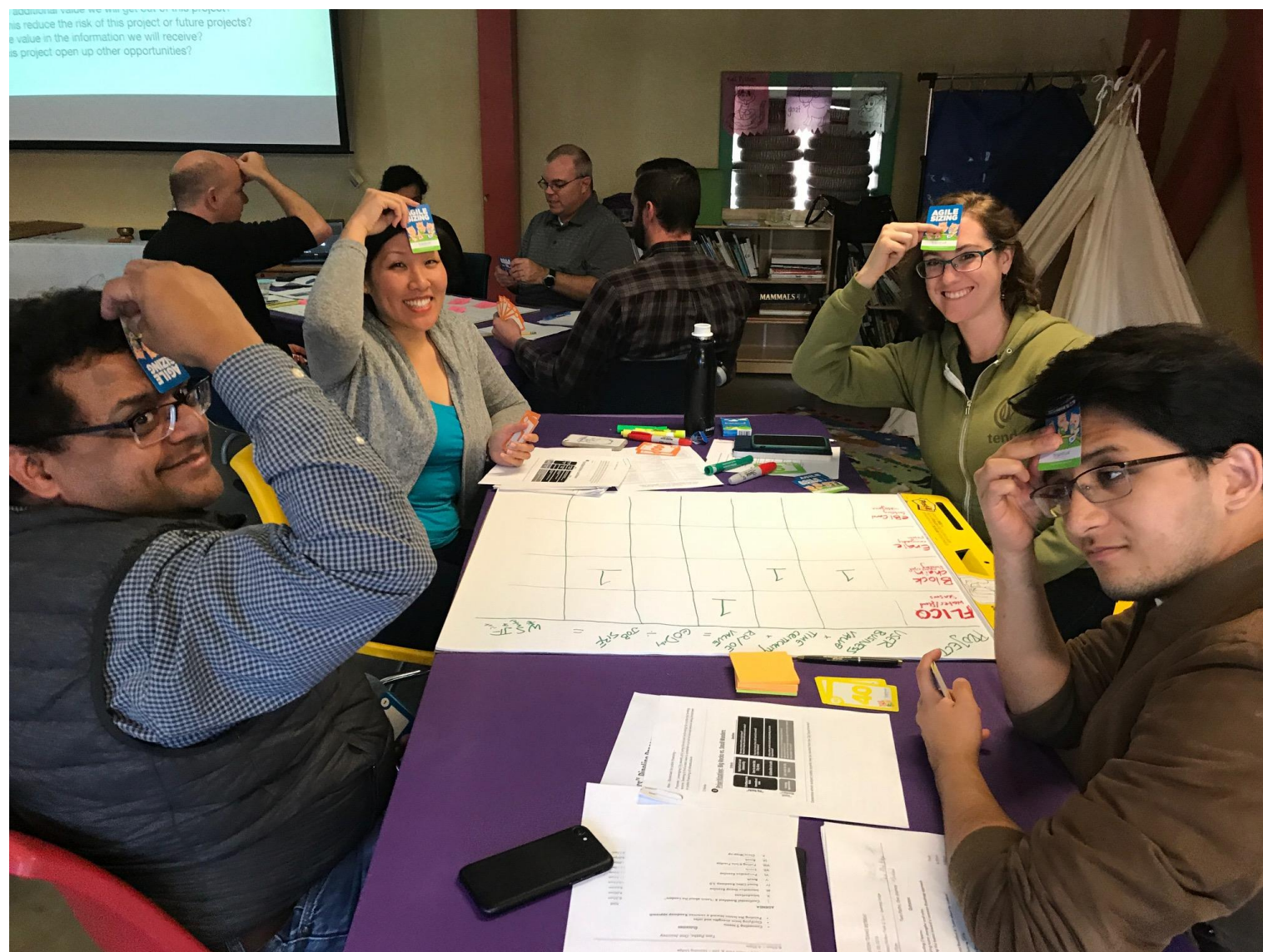
JOB
DURATION



WEIGHTED
SHORTEST
JOB FIRST
(WSJF)

PROCESS UPDATE ON SMALL WONDERS PIPELINE

- ONE TEAM!



STATUS UPDATE ON SMALL WONDERS PROJECT

CONCEPTUALIZING	EXECUTING	CELEBRATING
Urban Leap Project Management Tool	Footfall Analytics - Think Smarter Analytics	Unleash your Geek 1.0 - Graffiti removal
Citymart - Digital Platform for Procurement Needs	Battery Storage Solutions	Unleash you Geek 2.0 - Flood detection
Unleash Your Geek #3 - Blockchain	2020 Census -Technology Conversation	Box Analytics
	Educational Performance for Access Eastside	Facebook Live
	FB Live/Box or You Tube	Neighborhood Dashboard
	Cloud based event planning tracking system (Office of Economic Development Department)	
	STiR – Disaster Relief (Housing Department)	
	STiR – Asset Management for affordable housing (Housing Department)	
	STiR – Contractor Compliance tools (Public Works Department)	
	STiR – Online street banner asset management and booking system (Office of Economic Development Department)	

STATUS UPDATE ON SMALL WONDERS PROJECT

BACKLOG

SJ 5G AV Connectivity Testbed - This project will test specialized 5G connectivity features provide by AT&T to test Ford's autonomous vehicles in a 'connectivity test bed' within San Jose.

Better Cities – Engie (Energy effective method, smart cities/IoT connectivity and platform, safety and cybersecurity)

Ericsson Connect Urban Transportation - Advanced traffic management system that will help make better operational decisions based on the most relevant and up-to-date information

Siradel – Wide range of services from modeling in 3D, to our Urban planning simulation technology for a wide range of use cases and Connectivity (public Wi-Fi, 5G, IoT) design Siradel work with cities, universities and telecommunication on environmental, mobility solutions

Nvidia – Intel and Video Analytics – Platform used for deep learning by turning raw video data into actionable insight using GPU-based inference in real time.

Aclima.io – Environmental Intelligence. Aclima delivers hyperlocal air pollution and climate emissions data and insights to improve human and planetary health

Dish Network – 5G Narrowband IoT network

Corning – Wireless communication devices for Dedicated Short Range Communications (DSRC) 24/7 tracking. supports cellular service enhancements and other building applications, including Wi-Fi, video surveillance, building automation, and more.

LG – Connected Mobility platform security with advanced encryption and key/certificate management

Motorola Smart Public Safety - Smart Public Safety Solutions transform data sources into a force multiplier enabling fast, accurate emergency response and crime prevention

Manhole Wireless Antennas – Leverage manhole covers to improve connectivity

Autonomous Vehicles HD Maps – Sanborn will partner with City to create HD maps to attract more autonomous vehicle testing in San Jose.

STATUS UPDATE ON SMALL WONDERS PROJECTS

DEPRIORITIZED

Block chain for public financing	eBicard – Building Infrastructure Card Technology – Web-based solution that facilitates the process of entering critical building information and provides tools for viewing, reporting and mapping
Miles – A rewards program for individuals using different modes of ground based transportation through the use of the application.	Balcony Io – An application that connects people at the scene for answers in real time.
Cloud Parc – A smart city platform for parking solutions that uses machine vision, artificial intelligence, cloud computing and smart phone capabilities	
Clever Citi – Sensor technology for on street parking detection and management	
Flicq – Use of smart sensors to monitor conditions in real time for Flood Water Monitoring	

QUESTIONS OR FEEDBACK?

HOW DO WE PLAN TO DO IT?

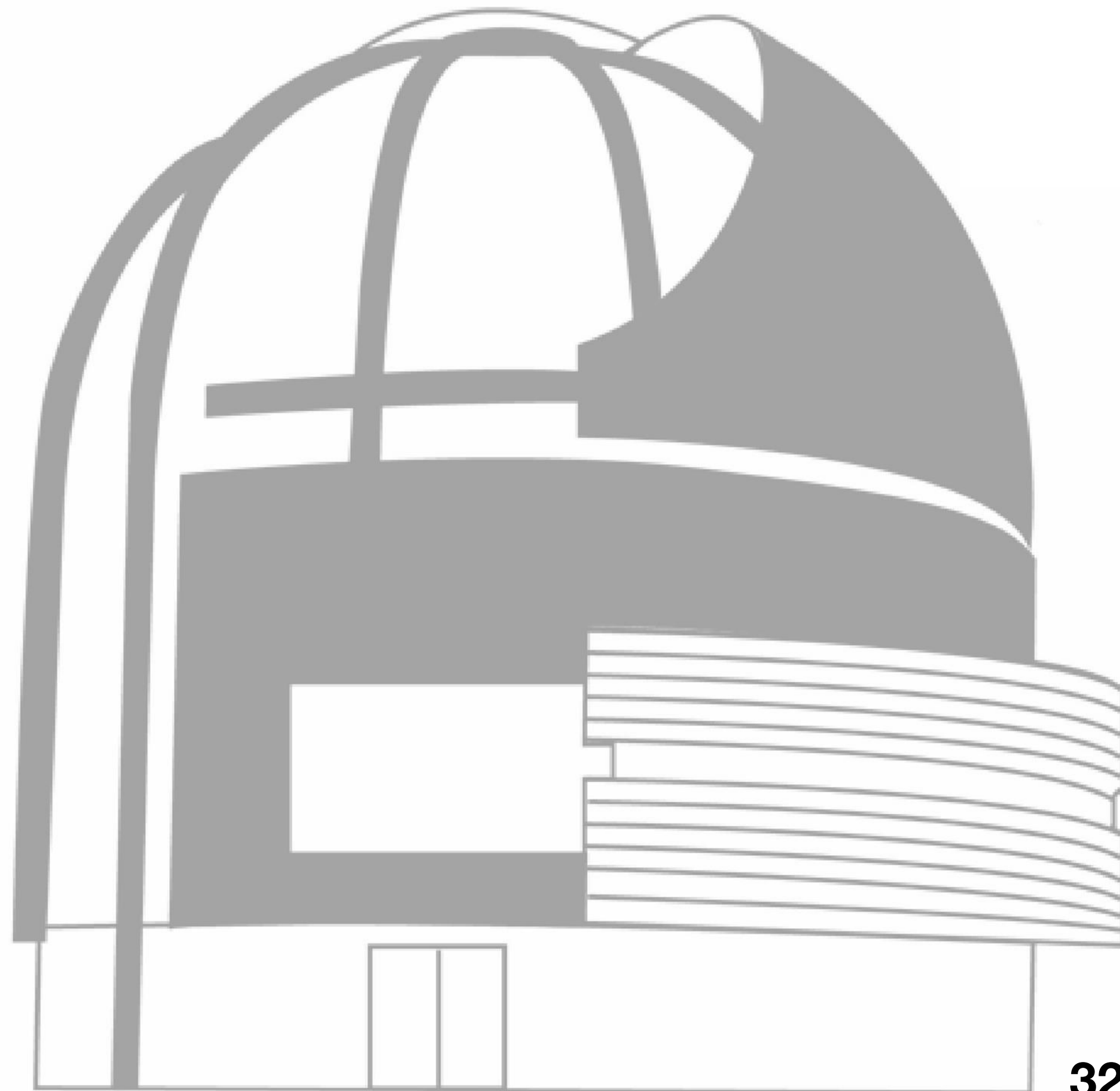
OUR INNOVATION ECOSYSTEM



Mercedes-Benz

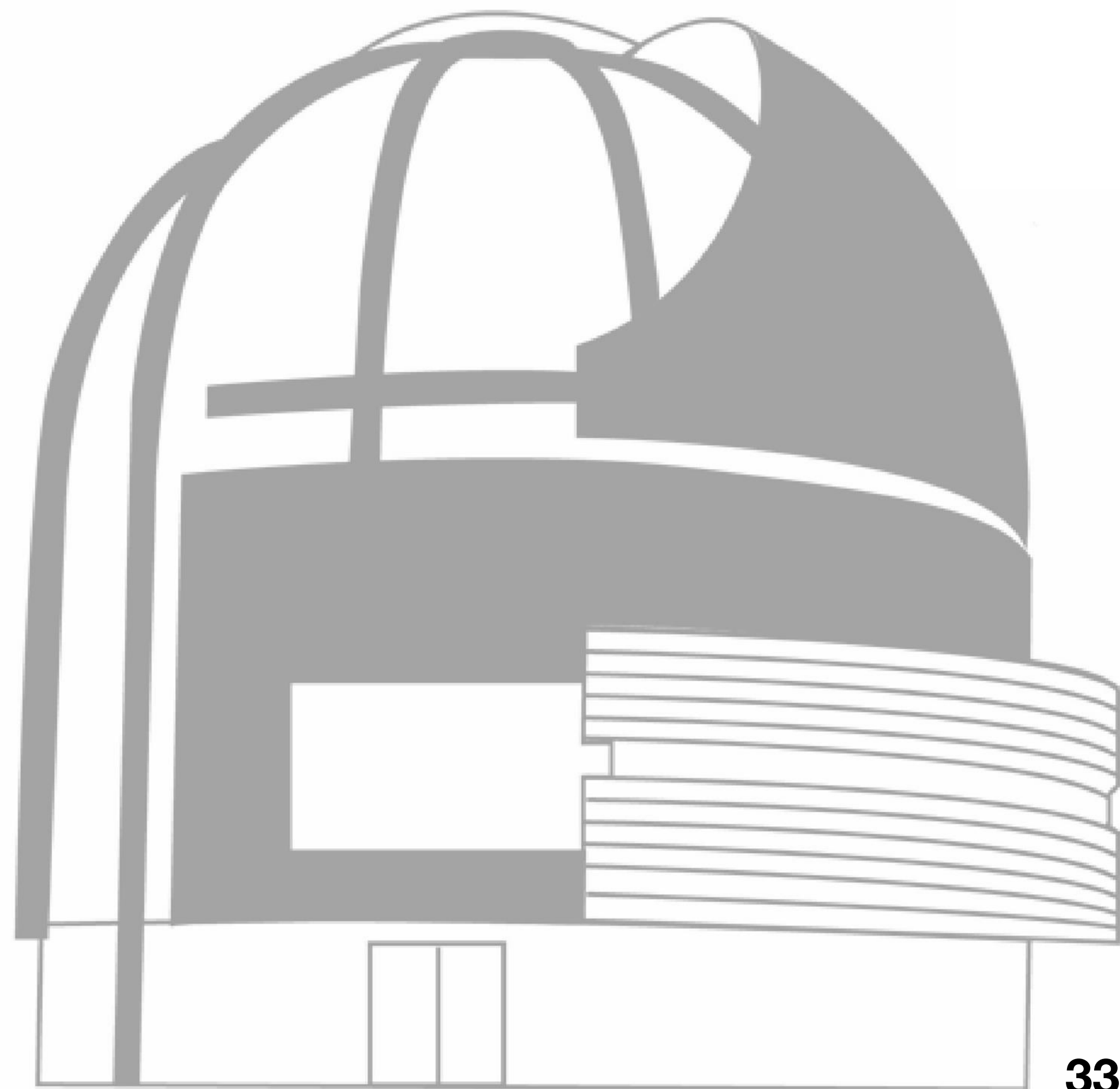


**BERKMAN
KLEIN CENTER**
FOR INTERNET & SOCIETY
AT HARVARD UNIVERSITY



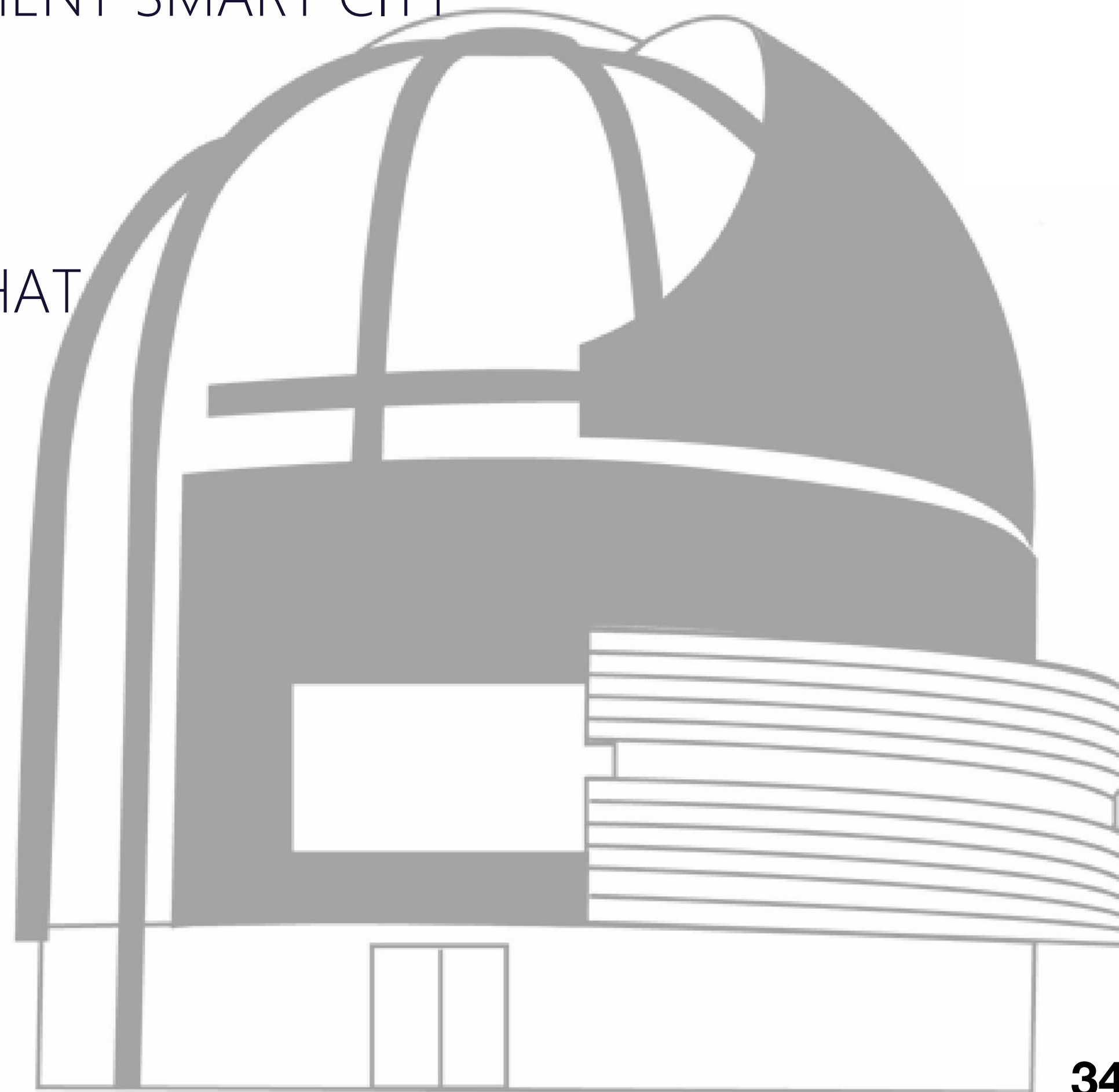
BUILDING
CAPACITY –

POWERED BY PEOPLE



GOALS OF THE INNOVATORS ACADEMY

1. **DEVELOP AND FOSTER** A NEW GENERATION OF LEADERS WITH AN INNOVATION MINDSET WITH STRONG PROJECT MANAGEMENT SKILLSET TO IMPLEMENT SMART CITY SOLUTIONS
2. **ESTABLISH** A CITY-WIDE FOCUS TO PROMOTE A CULTURAL CHANGE THAT WILL HELP EMBRACE NEW INNOVATIVE PROJECTS
3. **STRENGTHEN** CITY'S PARTNERSHIP WITH TECH INDUSTRY TO DEVELOP SMALL EXPERIMENTS WITHIN THE CITY'S URBAN ENVIRONMENT



INNOVATORS ACADEMY COMPRISED OF MINIMUM OF FIVE KEY ELEMENTS

LEADERSHIP DEVELOPMENT

TRAINING

COACHING FROM TECH
INDUSTRY AND CITY
EXECUTIVE LEADERSHIP

NETWORK BUILDING WITH
TECH INDUSTRY AND CIVIC
LEADERS

EXPOSURE TO
CITY AND PRIVATE SECTOR
LEADERSHIP

INNOVATORS ACADEMY- INITIAL SELECTION PROCESS

MINIMUM QUALIFICATIONS

6+ months of City
work experience

Any classification
with project
management
experience

Good standing
performance from
supervisor

PASSION FOR INNOVATION

Department and
supervisor approval

Willing to commit 4
hours per week

LEADERSHIP POTENTIAL

Growth
opportunities

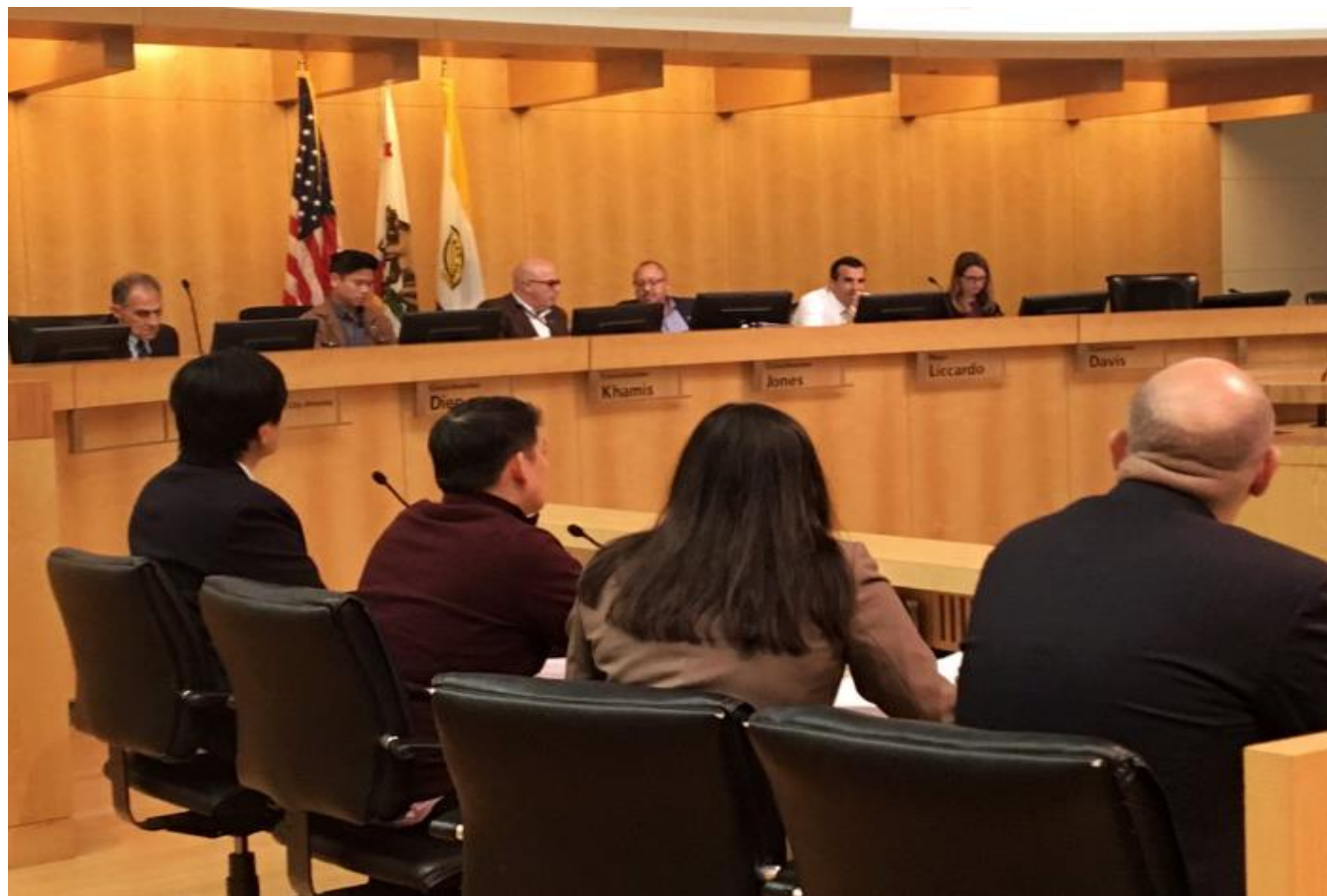
Trained



- 8-12 Innovator
Fellows per year
- 1 year term

INNOVATORS ACADEMY- GRADUATION AND NETWORK OPPORTUNITIES

PRESENT AT SMART CITIES COMMITTEE MEETINGS

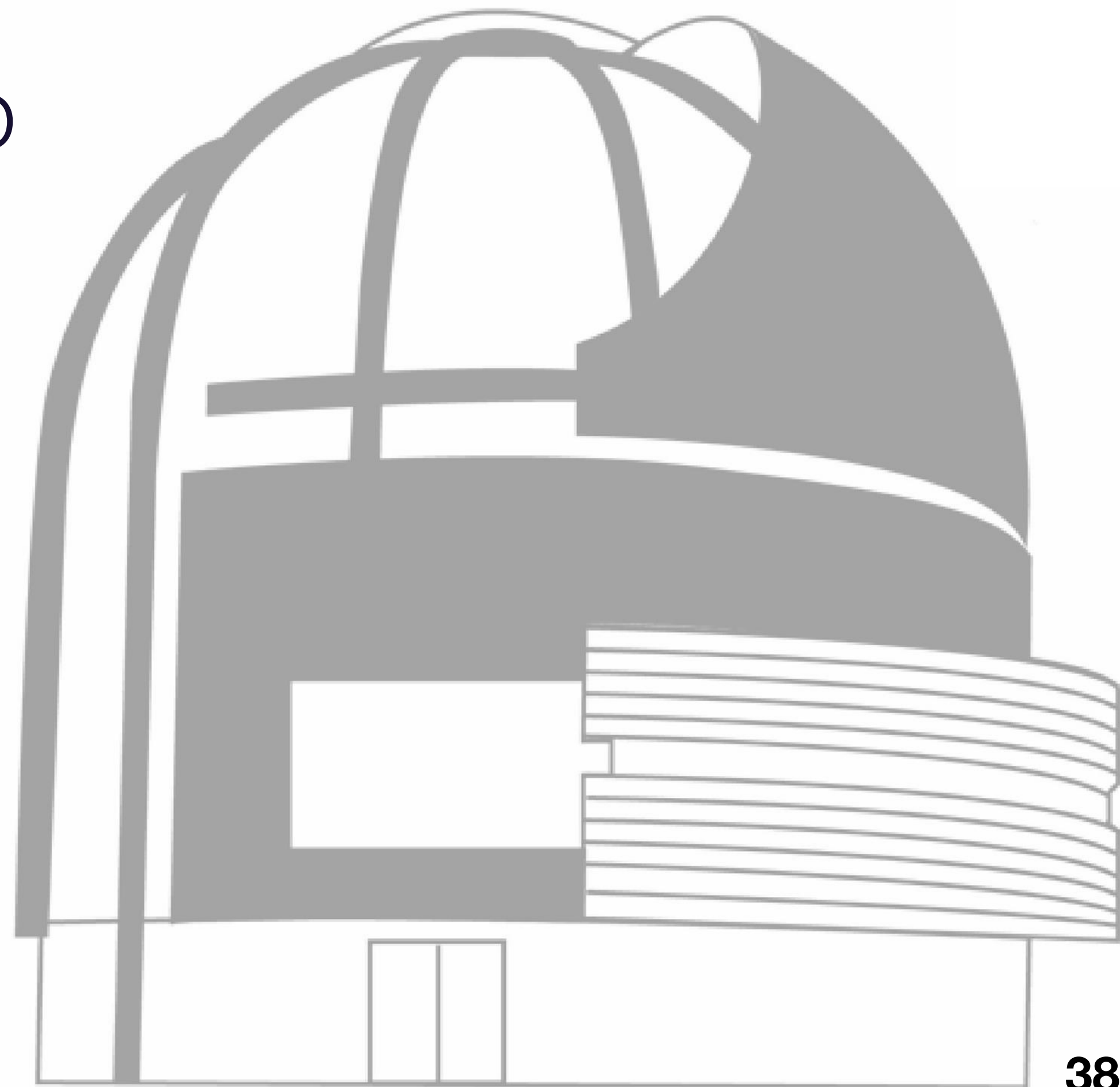


NETWORK WITH CITY LEADERS

- Join department heads, deputy city managers, city manager in key internal and external meetings
- Meet with city elected officials and learn city council processes in working with communities

INNOVATORS ACADEMY - NEXT STEPS

- COLLABORATE WITH HR AND CMO TO DEVELOP WORKPLAN - FEB/MAR 2019
- PILOT POTENTIAL COURSES TO TEST - SPRING/SUMMER 2019
- SELECT POTENTIAL CANDIDATES - AUGUST 2019
- BEGIN ACADEMY- FALL 2019



PROJECT REPORTING

Reporting Cadence	IT Roadmap	Big Rocks	Small Wonders
CMO Civic Innovation	Stoplight Status update: Monthly Detailed Status: Monthly	Stoplight Status update: Monthly Detailed Status: bi-annually/annually per project	Civic Innovation and MOTI - bi-weekly to evaluate backlog
Smart City and Service Improvements Committee	Verbal reporting: Quarterly for 1 high priority projects	Verbal reporting: Monthly for 1 high priority projects and 1 strategy	Verbal reporting: monthly updates for 1 small wonder project
Roadmap Refresh	Every 6 months	Every 6 months	Every 3 months

QUESTIONS OR FEEDBACK?