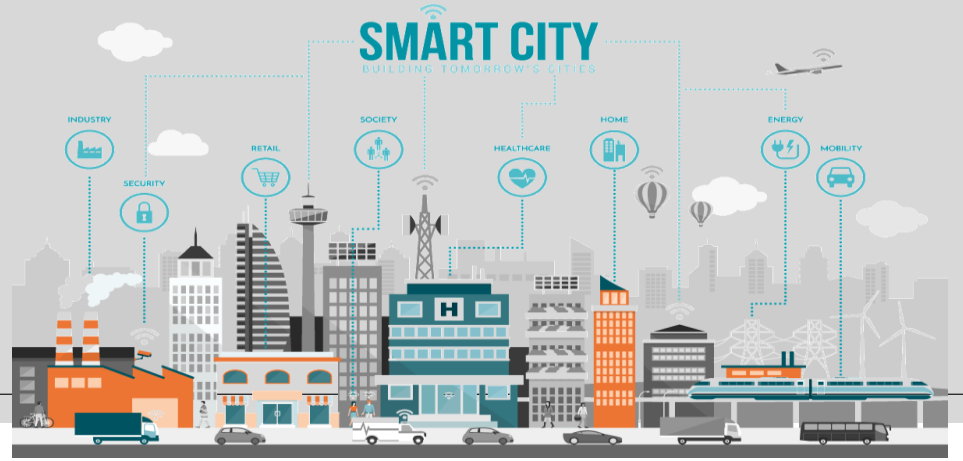
SMART CITIES

august 2021

characteristics of ‘smart’ cities

- Imaginary version or ideal of the urban landscape
- Implied faith in technology and innovation
- Many different definitions and even more descriptions
  - Simplicity vs Complexity
  - Showcase of technology
  - Integration of urbanity with advanced science & technology



- Columbus, OH won the Smart City Challenge Grant in 2016
- Reinventing mobility
  - Improve quality of life
  - Drive economic growth
  - Provide access to jobs & opportunity
  - Logistics
  - Sustainability

- Smart Dubai has a goal to make Dubai the happiest city on earth
- 100% paperless initiative
- Government efficiency

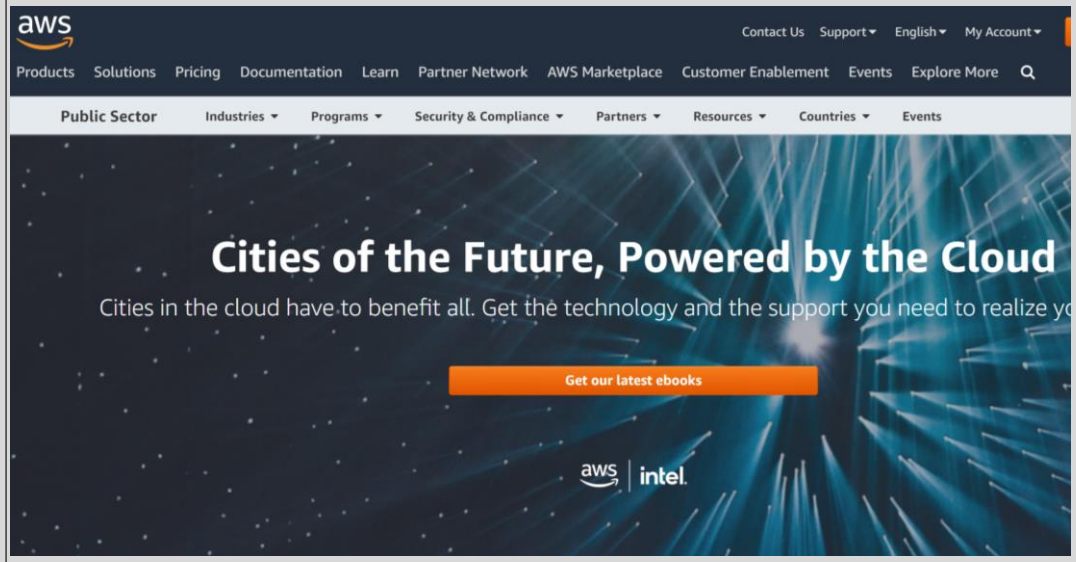
Public
City Sensors
Public Data Markets
Asset, Service Registration
Data Management
City Machines & Equipment
Data
Collect
Analyze
Employee, Citizen & Business Devices
Data Enrichment
Decision
Legacy City Systems
New City Apps
Private
Services Discovery
Integration

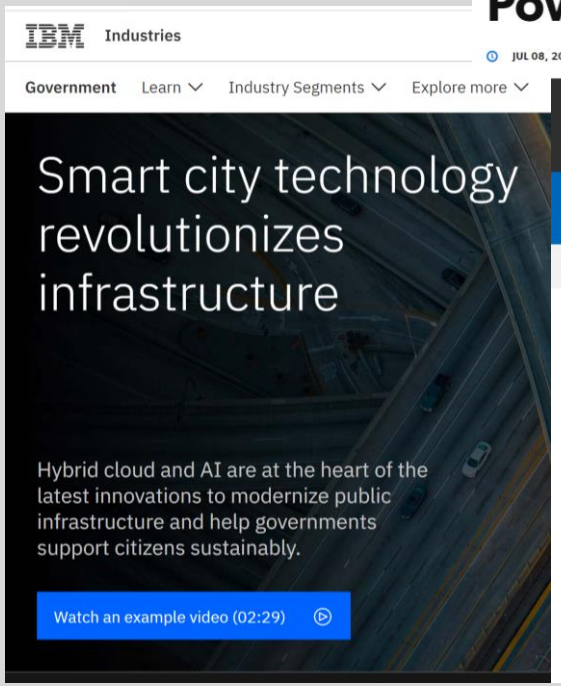
implications of city-ing smarter

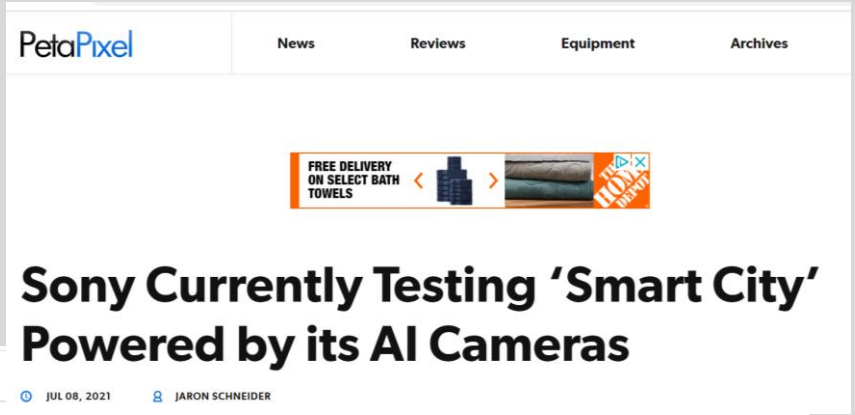
- Not always but often goal-oriented, e.g. *uses advanced technology to make the city safer, more entertaining, etc.*
- How are goals set? Does the goal come first or does the technology chart the path?

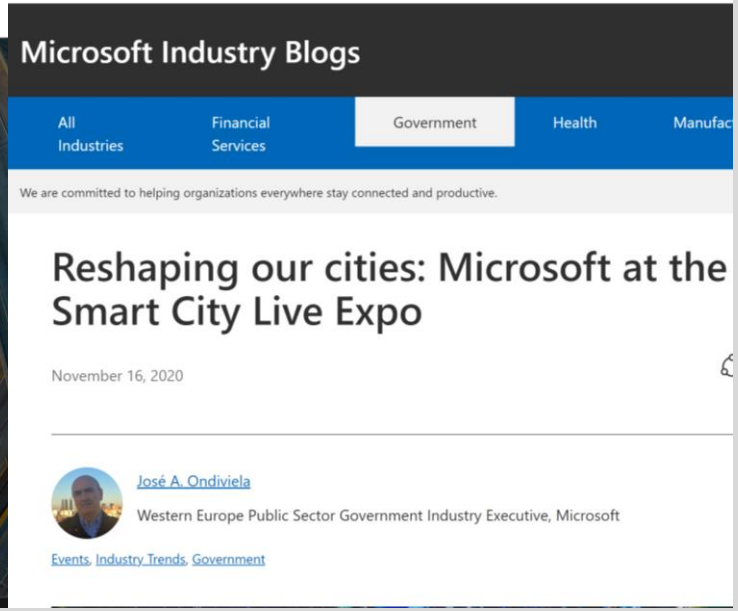
critiques of smart cities

- Subjects the city to corporate governance



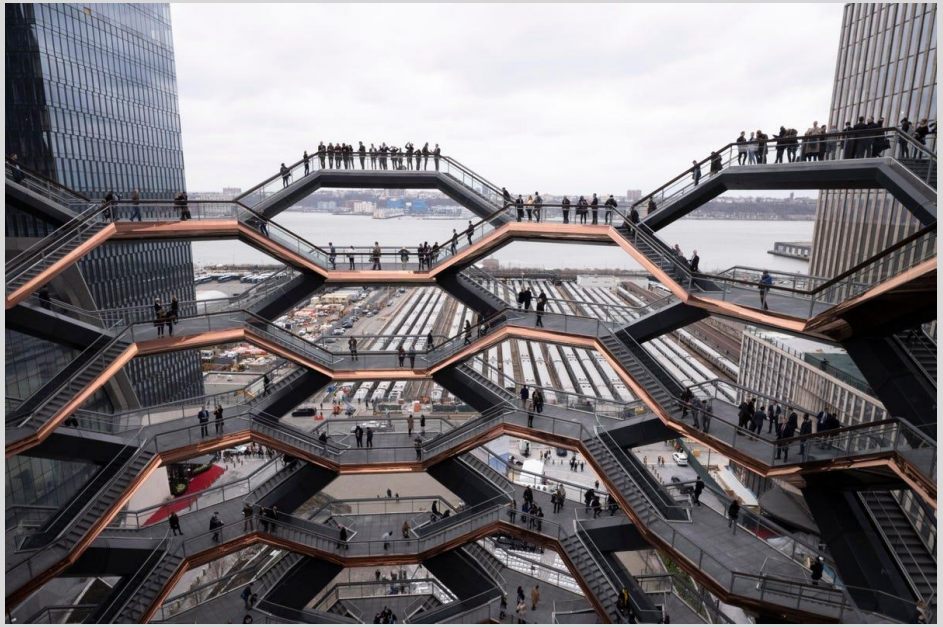






critiques of smart cities

- Incompatible with the 'informal' character of cities



critiques of smart cities

- Reproduces social and urban inequalities

‘SMART’ PLANNING FOR FUTURE DEVELOPMENT

- Tampa Bay Smart Cities Alliance was created in 2018
- Goal is to create safety, accessibility & mobility in the tampa bay region by deploying cutting edge technologies in multiple disciplines including transportation, energy infrastructure, health, and more
- Three action tracks
  - Reimagining infrastructure
  - Mobility as a Service
  - Data & Analytics

Smart Cities Mobility Plan, 2021

- ‘Smart Cities approach’
  - Use existing and emerging technologies to improve safety, mobility, and quality-of-life
- Reviewed Smart Cities plans, inventoried, classified
- Factsheets
- Prioritization tool
- Existing deployment map
- Vision map

Smart Energy and Sustainability

NATIONAL EXAMPLE SOLUTIONS:

Electric Vehicle (EV) Charging Infrastructure, San Francisco, CA

- **Background:** To provide sufficient infrastructure for EVs, the city needed a network of charging stations to meet the growing demand, as well as encouraging the EV ownership through improving access to the charging stations.
- **Strategy:** In partnership with Black & Veatch and San Francisco-based Volta Charging, the city achieved a significant expansion of Volta's network of free public charging stations. Organizations worked collaboratively to obtain the required permits and perform engineering and design activities. They also worked with businesses where stations were located to address their needs.
- **Key Outcomes:**
  - Improved access to charging stations and accelerated EV adoption
  - Clean-energy vehicle infrastructure and free charging
  - Alleviate range anxiety by rapidly scaling its portfolio of free public electric car charging stations

TARGETED SMART CITIES ELEMENTS AREAS

Existing and Emerging Technologies | Investment Criteria | Strategic/Transportation Priorities | Planning Duration | Benefits | Collaboration | Infrastructure | Performance Measurement

TARGETED HILLSBOROUGH CORE INVESTMENT AREAS

Good Repair and Resilience | Vision Zero | Smart Cities | Real Choices When Not Driving | Major Investments for Economic Growth

Enforcement Systems

Washington District Department of Transportation

- **Background:** In 1999 citywide survey, District of Columbia residents identified unsafe driving—including running red lights and stop signs—as their number one public safety concern. Sixty-two percent said unsafe driving was a serious problem in their communities. (See the results of drivers who take chances and run red lights.)
- **Strategy:** Cameras capture violations on film and record all of the relevant data for the violation. For example, when a red-light violation occurs, the camera records the date, time, vehicle's speed, and time elapsed since the beginning of the red signal. The images are then analyzed, possible extenuating circumstances are considered, and the registered owner of the vehicle is verified. A citation showing a photo of the violation is then mailed to the vehicle owner. Individuals may now view their violation images online (requires ticket number and unique personal identification number provided on the mailed citation). As of November 2020 there are 79 cameras and the location of these cameras are public available in addition, the public can make recommendations of future camera locations.
- **Key Outcomes:**
  - decrease the number of crashes
  - prevent injuries, and
  - save lives

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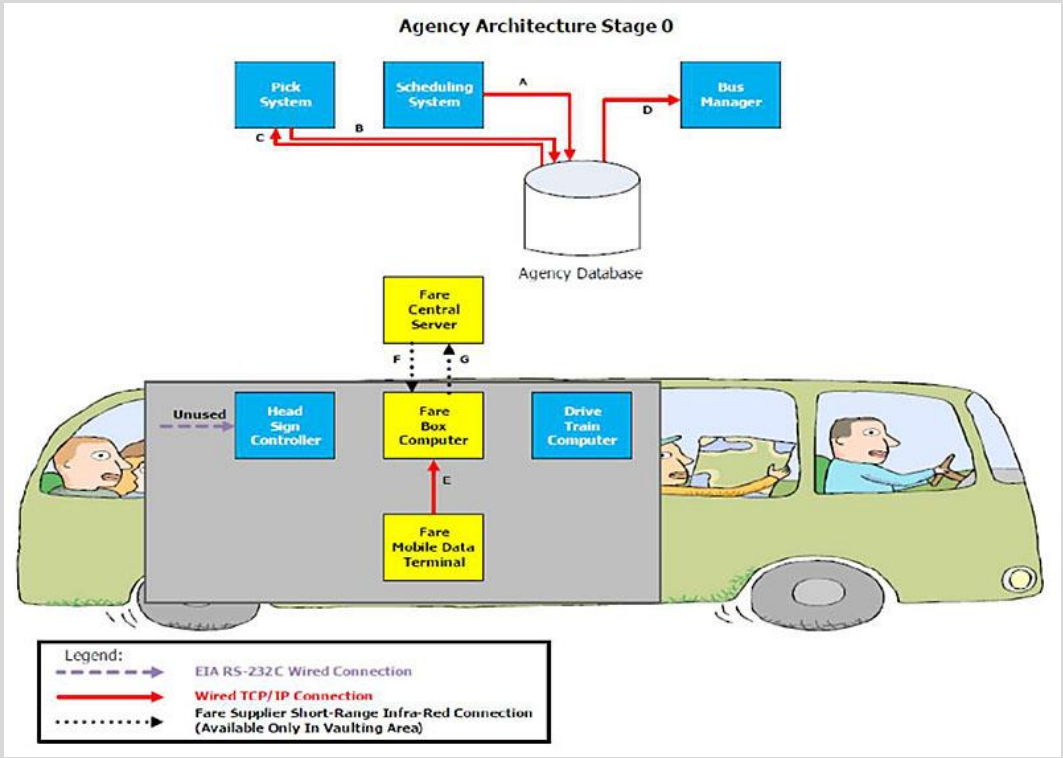
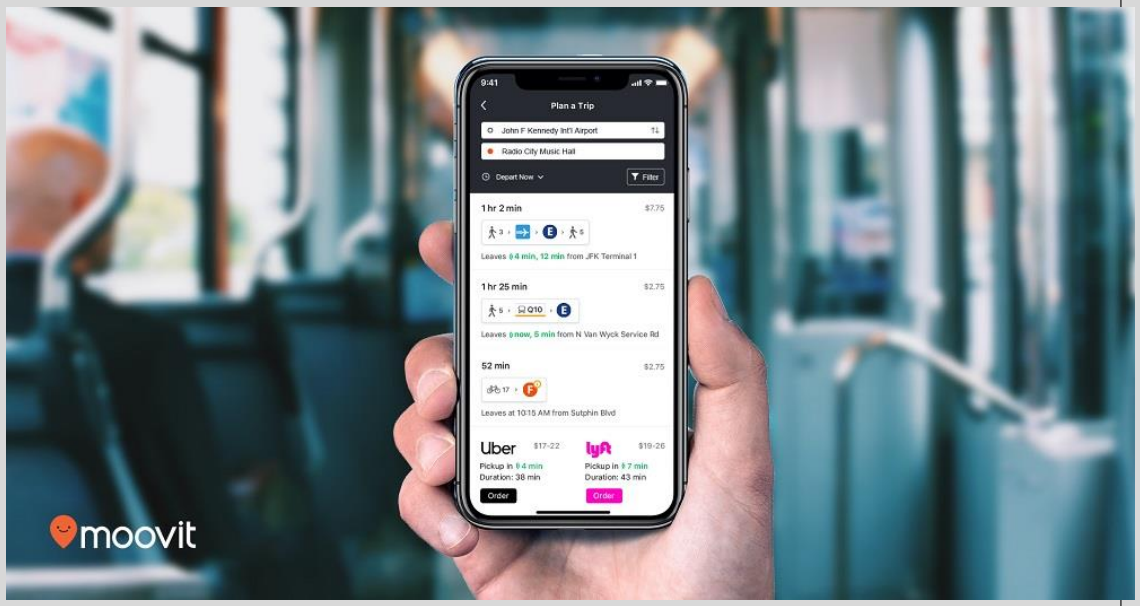
YIELD


Agency Architecture Stage 0
Pick System
Scheduling System
Bus Manager
A
B
C
D
Agency Database
Fare Central Server
F
G
Unused
Head Sign Controller
Fare Box Computer
Drive Train Computer
E
Fare Mobile Data Terminal
Legend:
EIA RS-232C Wired Connection
Wired TCP/IP Connection
Fare Supplier Short-Range Infra-Red Connection
(Available Only In Vaulting Area)

zone # 98010
Pay by App Parking
Get the ParkMobile app to pay for parking on-the-go
ParkMobile
No Smartphone?
800-280-4146
SPACE# 92
SPACE# 91


Plan a Trip
John F Kennedy Int'l Airport
Radio City Music Hall
Depart Now
Filter
1 hr 2 min
$7.75
1 hr 25 min
$2.75
52 min
$2.75
Uber
$17-22
Pickup in 4 min
Duration: 38 min
Order
$19-26
Pickup in 7 min
Duration: 43 min
Order
moovit

new prioritization tool

current metrics

- AM & PM peak period travel time index score
- Travel delay (in mins)
- On-time performance percentage

proposed metrics

- Alignment with LRTP goals
- Cost
- Implementation timeframe
- Facilitate equity
- Dependencies/risks/limitations
- Risk severity
- Benefit/cost ratio
- Strategic value

how will this integrate into the tip?

- Solicit agencies to submit proposals for new technologies
- Score each proposal according to the prioritization criteria
- The top scoring project(s) could be placed in the TIP Smart Cities investment program to compete for funding alongside traditional projects like intersection improvements, signals, etc

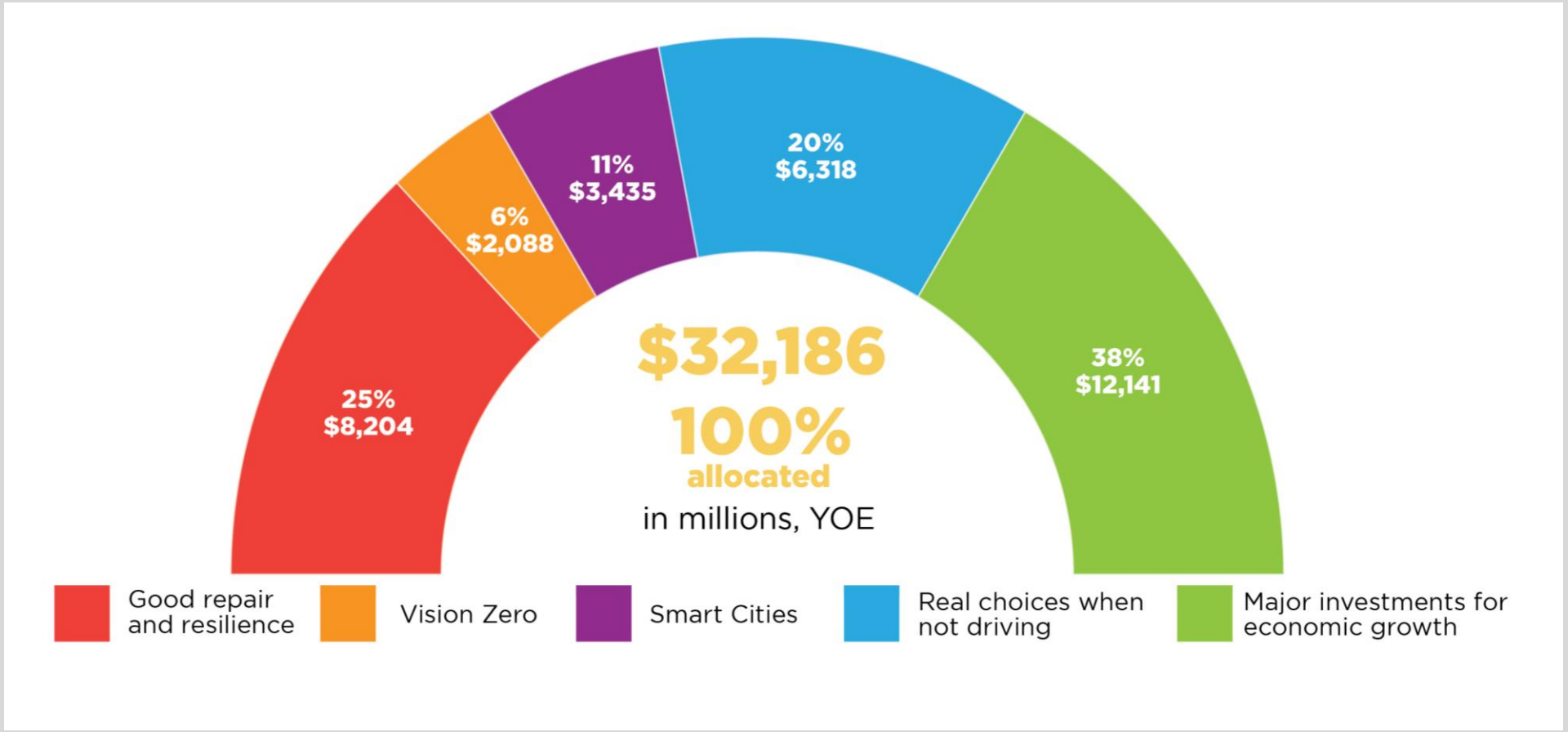
sample project scoring

- Alignment with LRTP goals
- Cost
- Implementation timeframe
- Equity
- Dependencies/risks/limitations
- Risk severity
- Benefit/cost ratio
- Strategic value

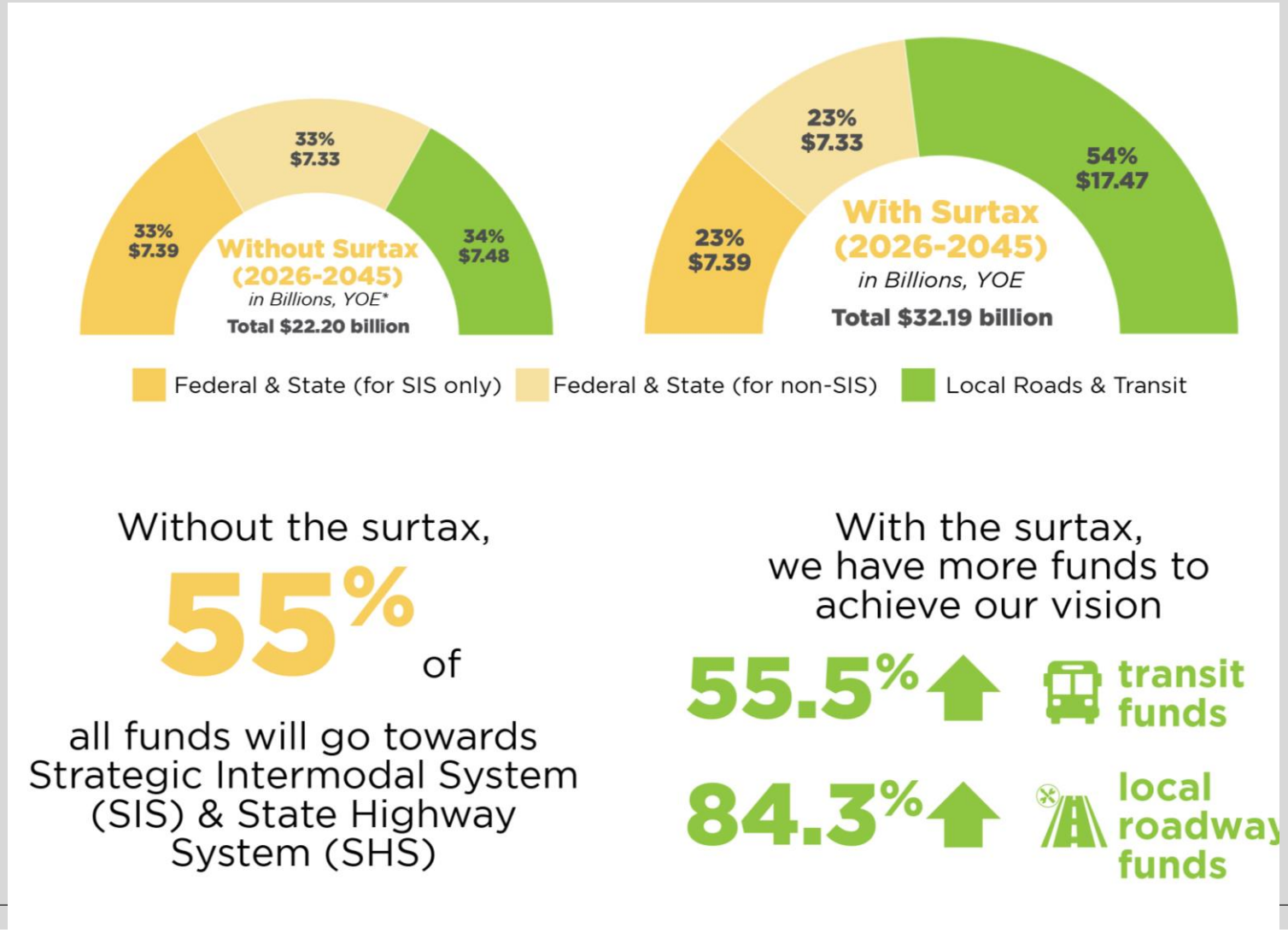
Project/Services/ Activities	Project Location	Final Score (DO NOT FILL IN) The higher the score, the higher return on investment. (Max 18)
HART Scheduling Software	Numerous corridors across the HART region	12
ATCMTD Project	-US 301 from I-4 south to Big Bend RD -Big Bend Rd from US 301 west to US 41 -US 41 north from Big Bend Rd to Pal, River Rd	10
Red Light Running Cameras	Potentially across Tampa Bay region	9
Smart Lighting	Potentially across Tampa Bay region	8

INTEGRATING SMART TECH INTO THE TIP

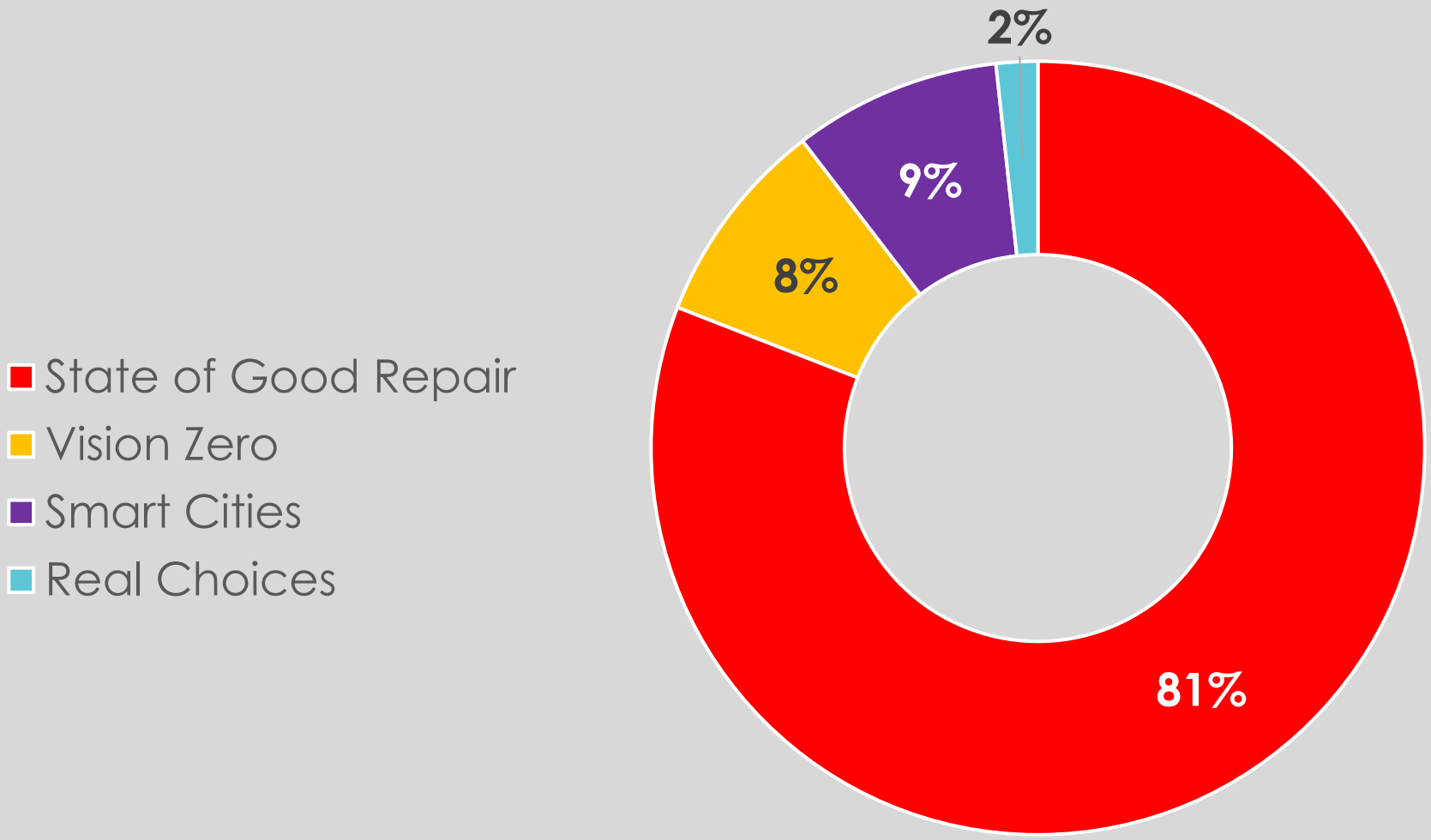
proposed allocation of future funding 2026-2045 (includes sales tax)



proposed allocation of TPO grants ($15-20m/yr)



actual fund allocation (2022-2026 TIP)



plan update next steps

- Webinar
- Draft available
- Submitted to Transportation Research Board for engagement award
- Social media ad-buys to drive traffic to the project webpage
- Survey available – still collecting feedback
- Workshop with technical staff to generate consensus before committee presentations
- Committee & board presentations and closeout

DISCUSSION