

CONDITIONAL TSP

A SMART CITY APPLICATION IN WALNUT CREEK

FEHR  PEERS

December 11, 2018

ROADMAP.

Introduction

Smart City Plans

Funding

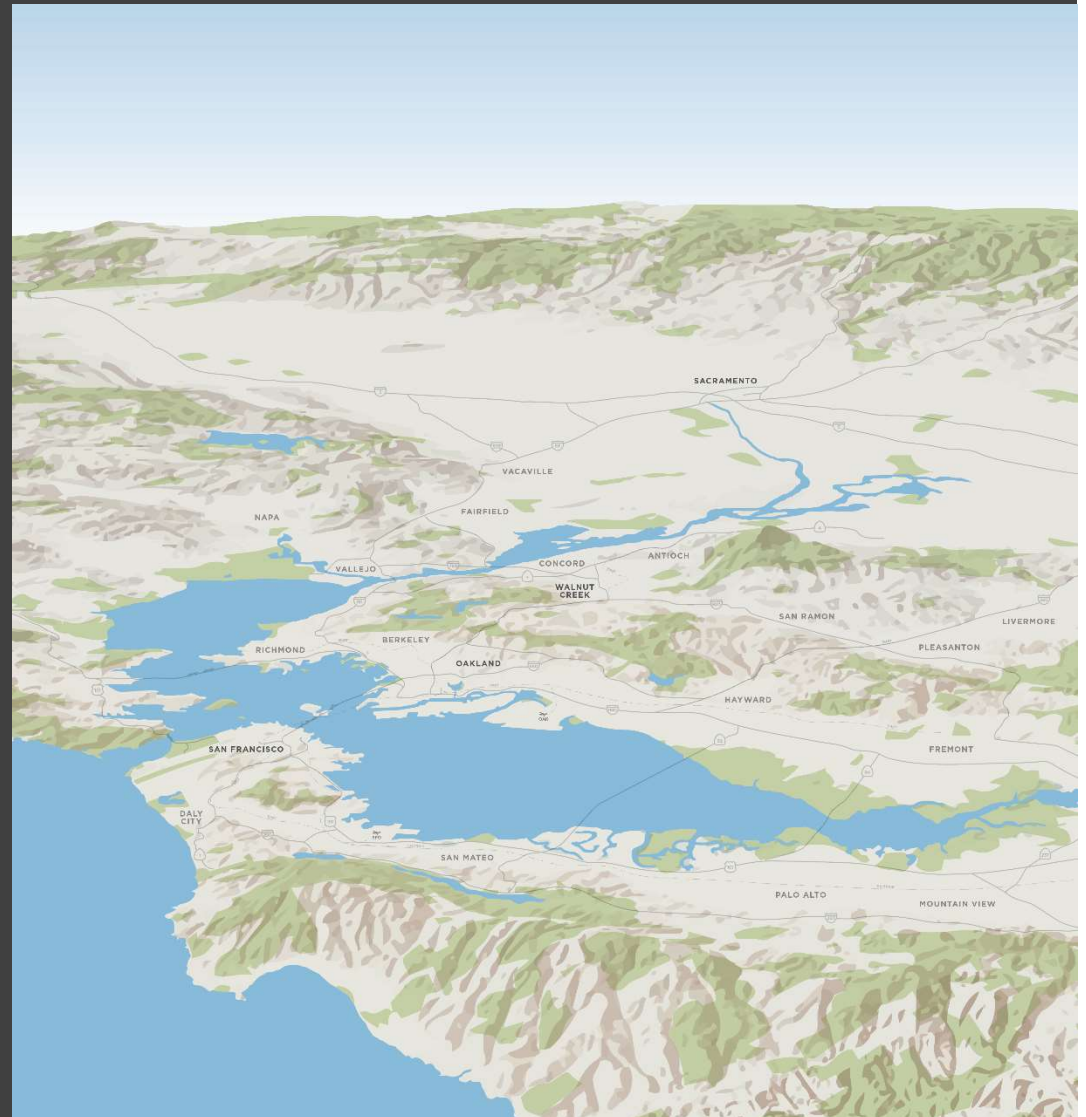
Concept

Challenges

Current status

Next Steps

Q&A



INTRODUCTION.

67,568 Residents

100+ Traffic Signals

BART Station + TOD

East SF Bay Retail Center

Served by CCCTA –
“County Connection”

MTC = MPO



CITY OF
WALNUT
CREEK

INTRODUCTION.

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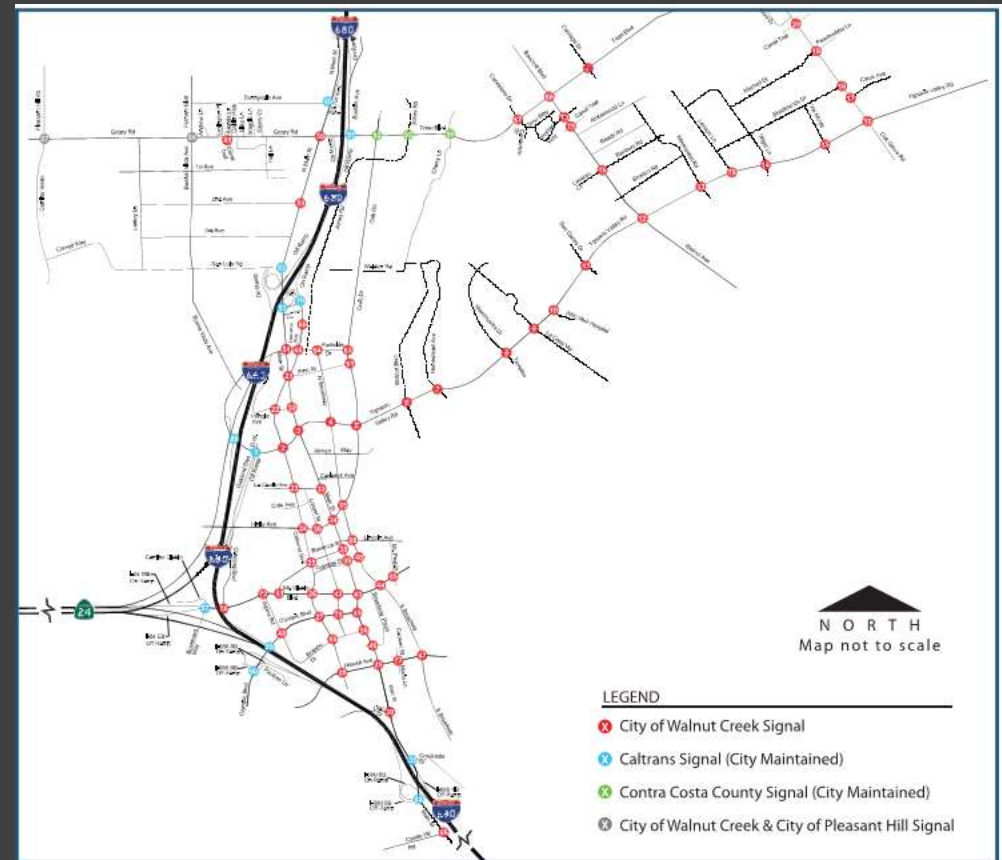
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INTRODUCTION.

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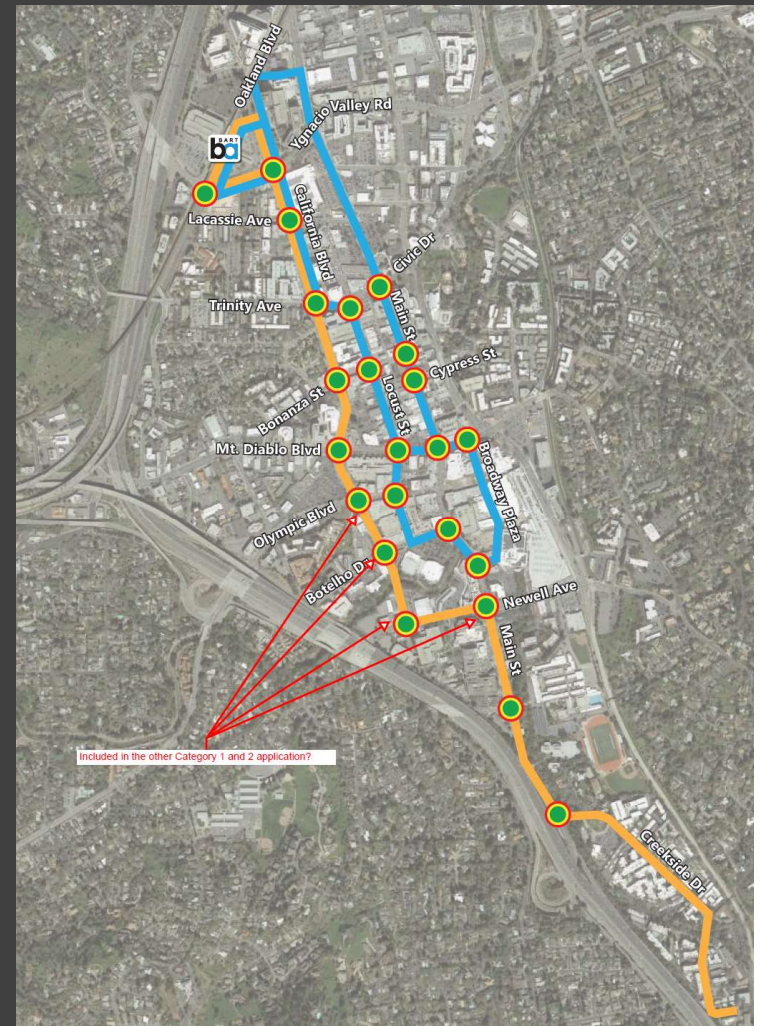
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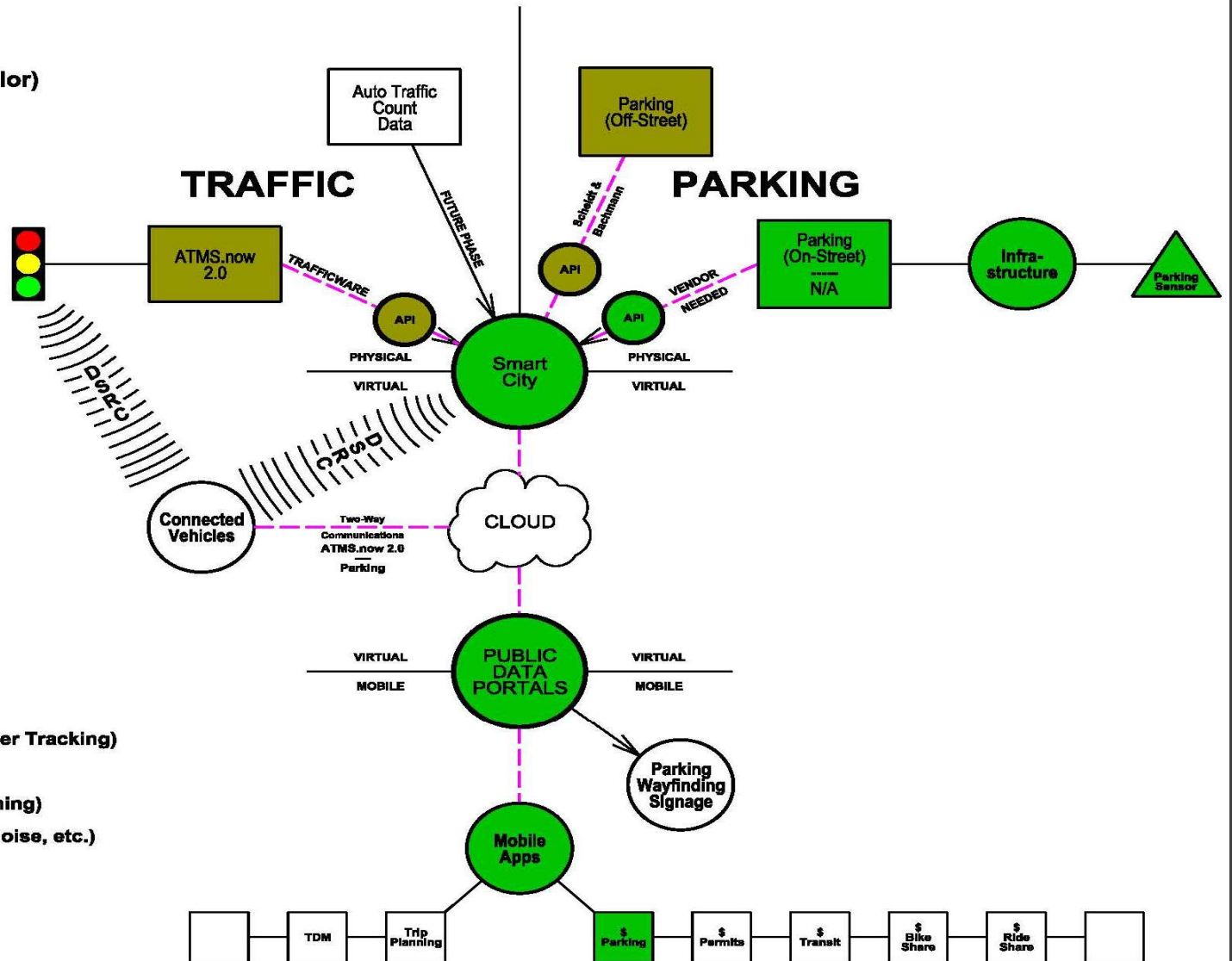
MTC = MPO



SMART.

City of Walnut Creek

Phase 1
Concept of Operations
Smart City Data Platform
 (Project Elements in Green Color)



Phase 2 (Future):
 - TRANSIT (AVL/GPS and Passenger Tracking)
 - BIKE/PED (Volume Counts)

Phase 3 (Future)
 - Emergency Vehicle (Dynamic Timing)
 - Fleet Management (AVL/GPS)
 - Environment (CO2, Waterways, Noise, etc.)
 - Public Asset Tracking

FUNDING.

2018 Active Smart City Projects

Dynamic Wayfinding

\$800K – MTC Grant
\$170K – Local (Parking) Funds

DSRC
Fiber Backbone
API's for Apps
Wayfinding App
Electronic Signs

Transit Priority System

\$675K – MTC Grant
\$120K – Local (Traffic Impact) Funds

DSRC
RSU's, OBU's
Fiber Backbone
API's for Apps

Traffic Monitoring

\$500K – Local (Traffic Impact) Funds

DSRC
RSU's
Fiber Backbone
Central API

FUNDING.

MTC IDEA Grant Program

IDEA Grant Program Overview

What is the IDEA Grant Program?

An old grant program combined with a new grant program

Program Goal

To support cities, counties and transit agencies in the deployment of advanced technologies along arterials to enhance mobility, sustainability and safety across all modes

Eligible Projects

- Category 1 (the "Old"):
 - ✓ Formerly referred to as the Next Generation Arterial Operations Program (NGAOP)
 - ✓ Deployment of mature, commercially-available advanced technologies
- Category 2 (the "New"):
 - ✓ Deployment of Connected/Automated Vehicle technologies
 - ✓ Includes potential projects with private partner participation



Total Grant Funding Available

- \$13 million

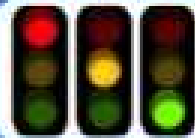


FUNDING.

MTC IDEA Grant Program

Eligible Projects: Category 1

**Mature,
Commercially-
available Advanced
Technologies**



Signal System Improvements

- Automated Traffic Signal Performance Measures (ATSPM)
- Adaptive Signal Systems



Bicycle or Pedestrian Improvements

- Automated bicycle or pedestrian detection technology for real-time operations
- Bicycle Green Waves



Transit Improvements for Arterials

- Transit Signal Priority (TSP) Expansion
- Queue Jump Lanes



Other Improvements

- Emergency Vehicle Pre-emption (EVP) Expansion
- Dynamic Lane Assignment at Signalized Intersections
- Coordination of Arterial Signals with Ramp Meters



FUNDING.

MTC IDEA Grant Program

Eligible Projects: Category 2

Connected and Automated Vehicle Technologies

- 

Bicycle or Pedestrian Improvements

 - Innovative Signal Priority for Active Travelers
 - Vulnerable Road User Protection
- 

Multi-Modal Intelligent Transportation Signal Systems (MMITSS)

 - DSRC Transit Signal Priority (TSP)
 - DSRC Emergency Vehicle Pre-emption (PREEMPT)
 - Intelligent Traffic Signal System (ISIG)
- 

Driving Optimization

 - Eco-Approach and Departure and Signalized Intersections
- 

Integrated Dynamic Transit Operations (IDTO)

 - Transit Connection Protection (T-Connect)
 - Dynamic Transit Operations (T-DOSP)
- 

Connected and Automated Vehicles (CAV)

 - Piloting AV technology with or without CV applications
 - Eco-driving
 - Collision avoidance

FUNDING.

MTC IDEA Grant Program

Funding / Match Requirements

Total Funding Available = \$13 million



*Note: Funding distribution for each category will depend on the pool of candidate projects

- **Minimum Grant Amount:**
 - ✓ \$250,000
- **Maximum Grant Amount:**
 - ✓ \$3,000,000
- **Minimum Match Requirements:**
 - ✓ Local Cash Match = 15% of total project cost*
 - ✓ In-Kind Match = 10% of total project cost
- **Fund Sources:**
 - ✓ Surface Transportation Program/ Congestion Mitigation and Air Quality (STP/CMAQ)



* For projects with private sector participation, of the total 15% cash match requirement, a private sector partner must provide at least a third of this requirement (i.e., 5% of the total project cost as cash).



FUNDING.

MTC IDEA Grant Program

Contact Information

General Questions about Program Requirements and Eligibility:

Linda Lee, Arterial Operations Program | llee@mtc.ca.gov, 415.778.5225

Specific Questions about Eligible NGAOP Projects:

Linda Lee, NextGen Arterial Operations Program | llee@mtc.ca.gov, 415.778.5225

Specific Questions about Eligible CAVA Projects:

Rob Rich, Connected/Autonomous Vehicles Program | rrich@mtc.ca.gov, 415.778.6621

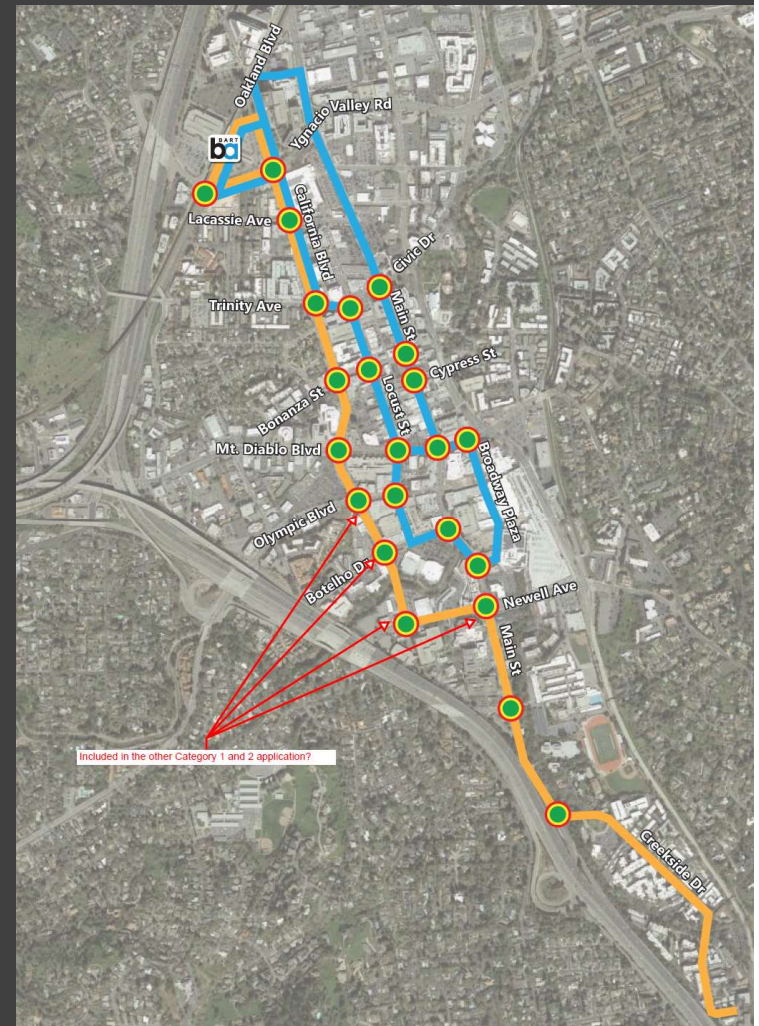
CONCEPT.

Expand Smart City to include transit application: Bus priority granted conditionally based on schedule and/or ridership

County Connection Routes 4&5

23 signalized intersections

Make use of DSRC and MMITSS Application



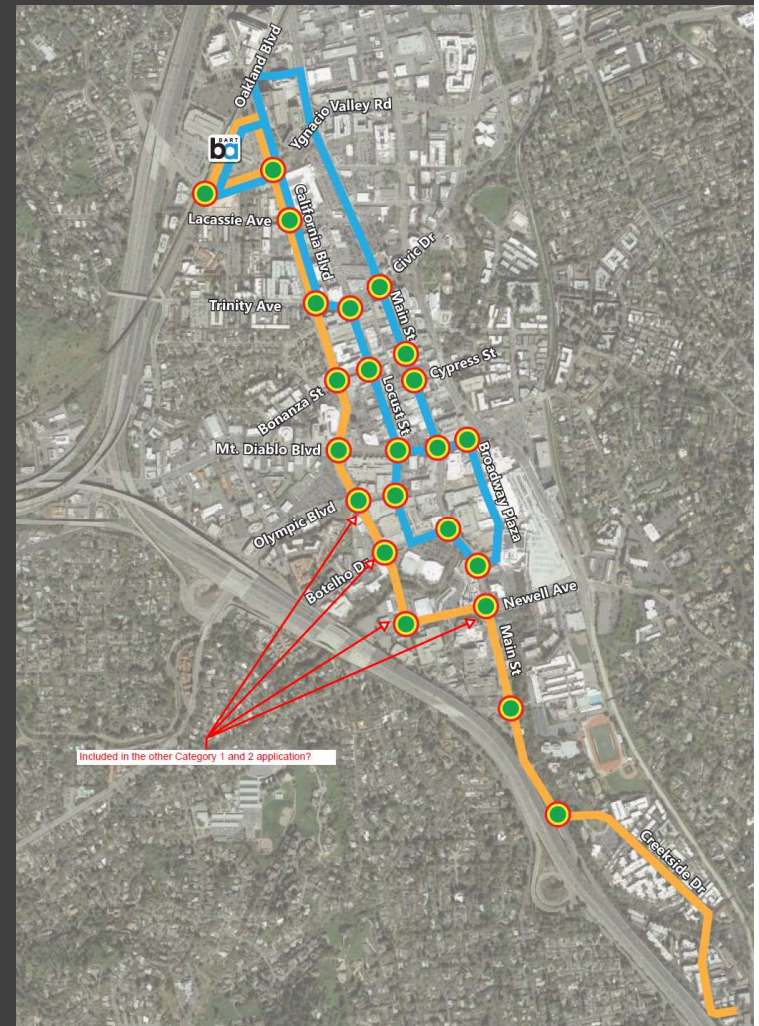
CONCEPT.

Buses already have on-board APC's (Clever Devices) and mobile radios

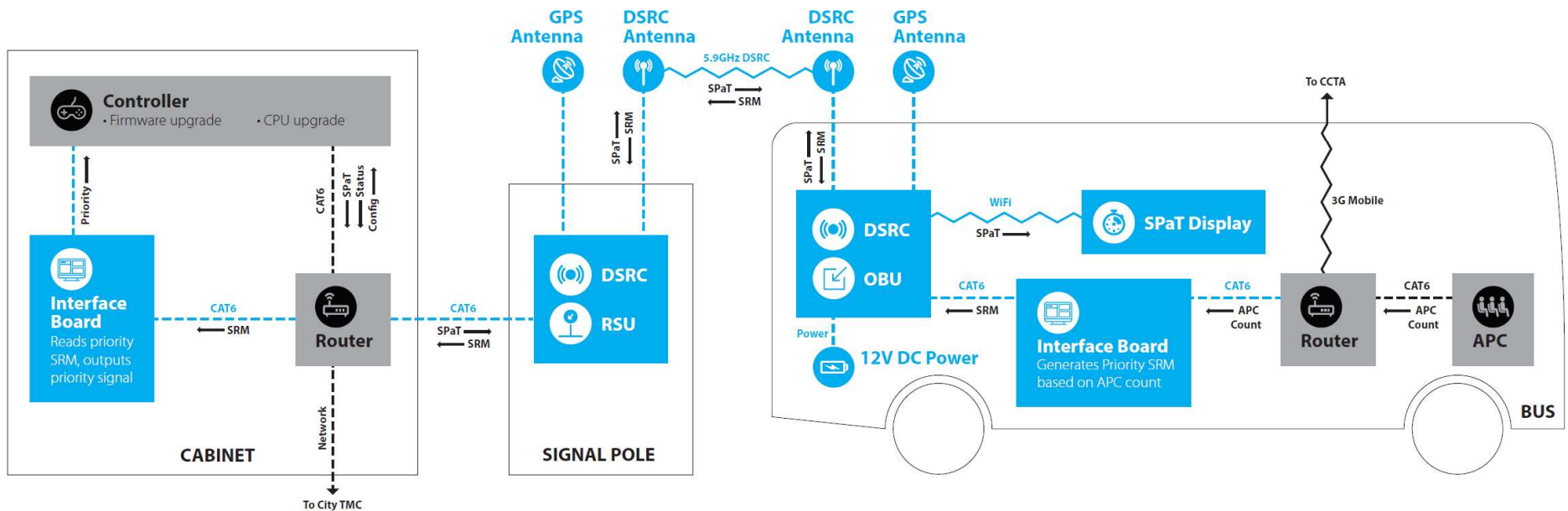
APC would push ridership data and time to new interface board with software to manage transit priority request

PRM, BSM and SRM get sent to RSE

Another interface unit translates PRM to local signal controller



CONCEPT.



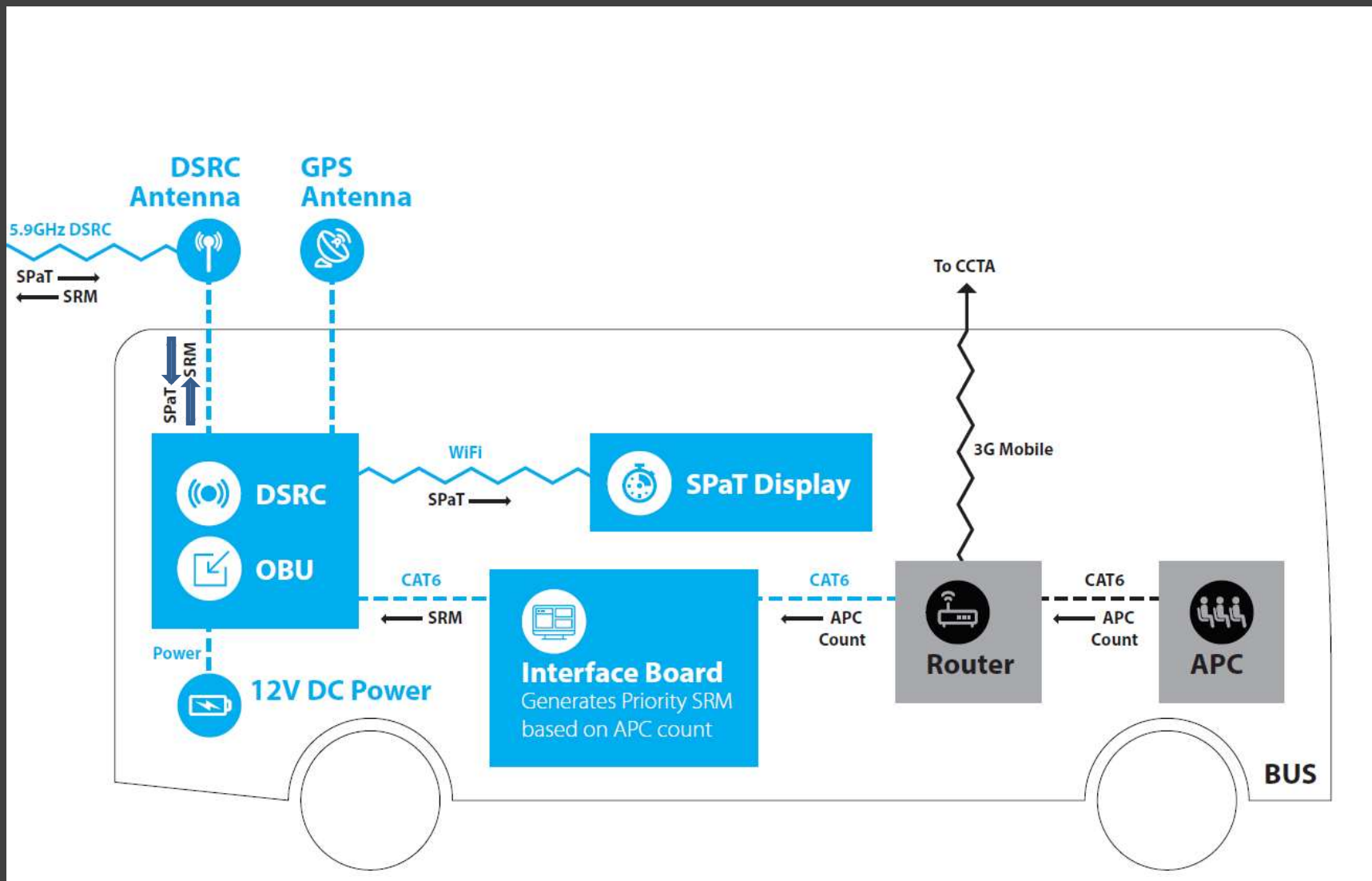
LEGEND:

- New Equipment
- Existing Equipment

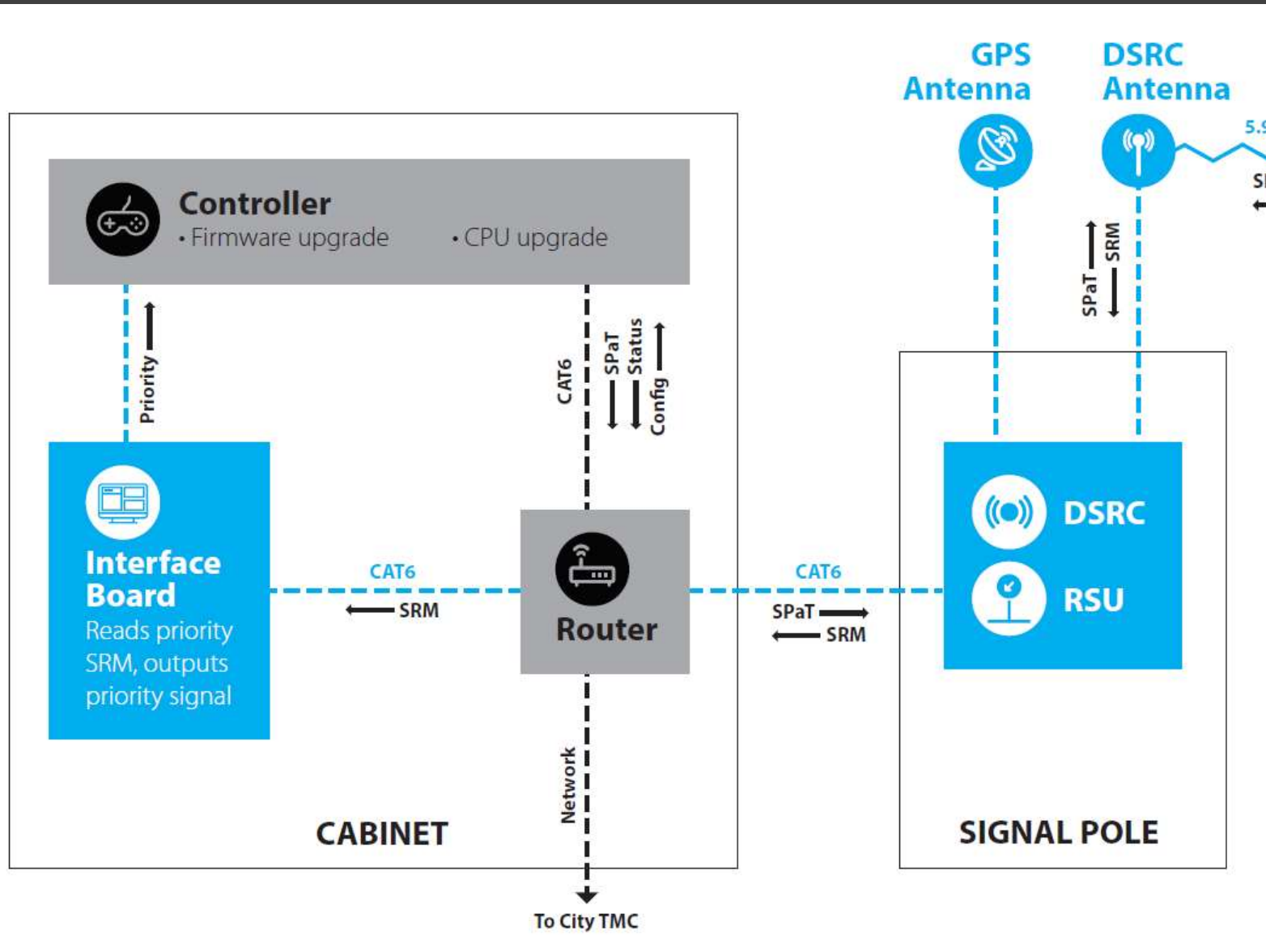
ACRONYMS:

- APC** Automated Passenger Counter
- DSRC** Dedicated Short Range Communication
- OBU** On-Board Unit
- RSU** Road-Side Unit
- SPaT** Signal Phase and Timing
- SRM** Signal Request Message (with priority request)
- TSP** Transit Signal Priority

CONCEPT.



CONCEPT.

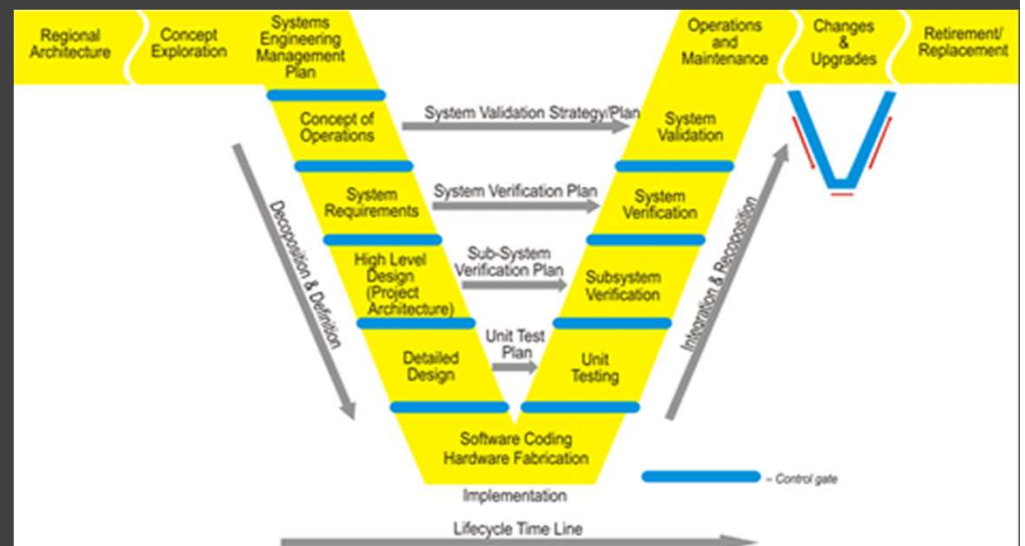


CHALLENGES.

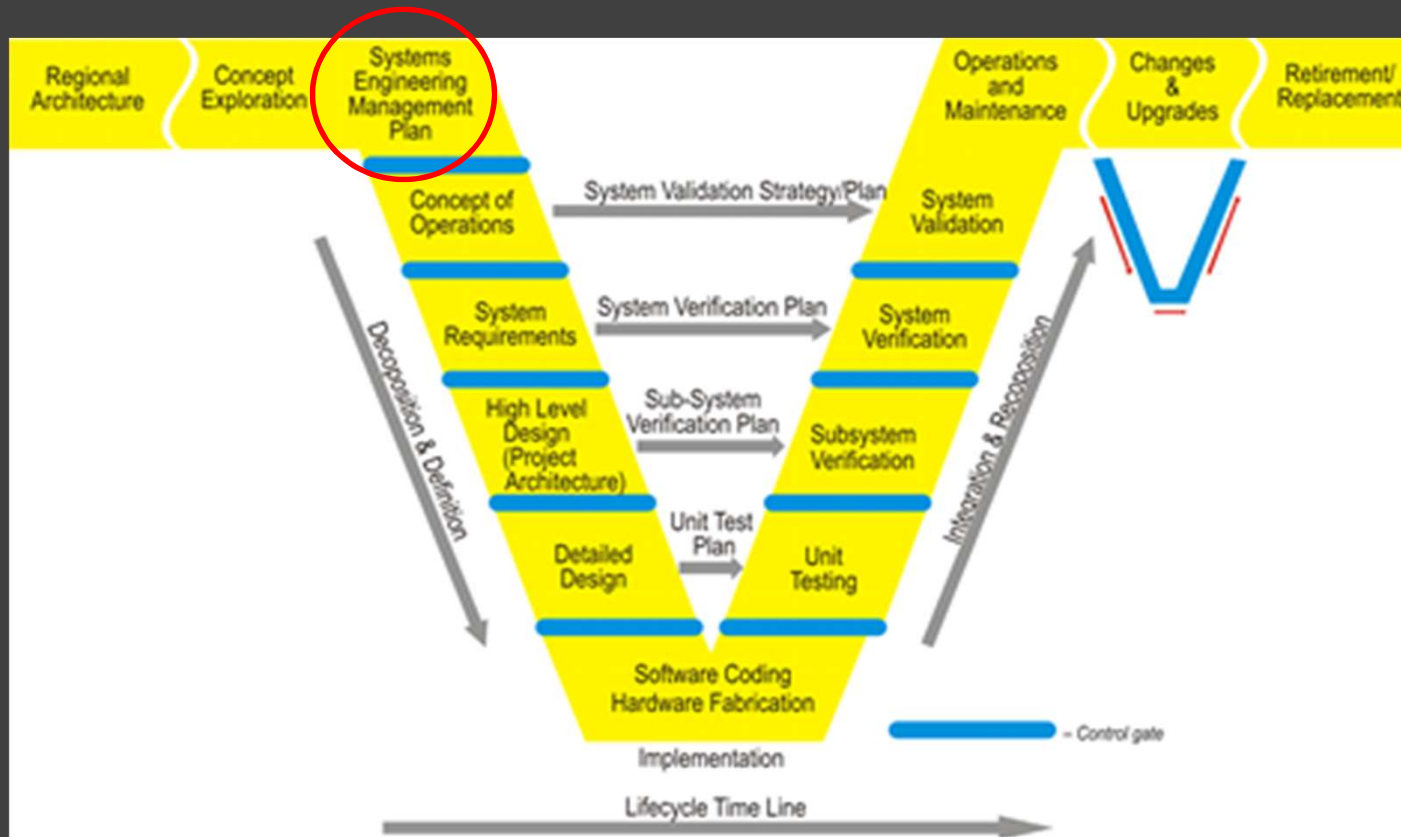
Neighboring agency received similar grant for TSP on County Connection buses – but using C2C connection

Conditional TSP would be a new development for MMITSS

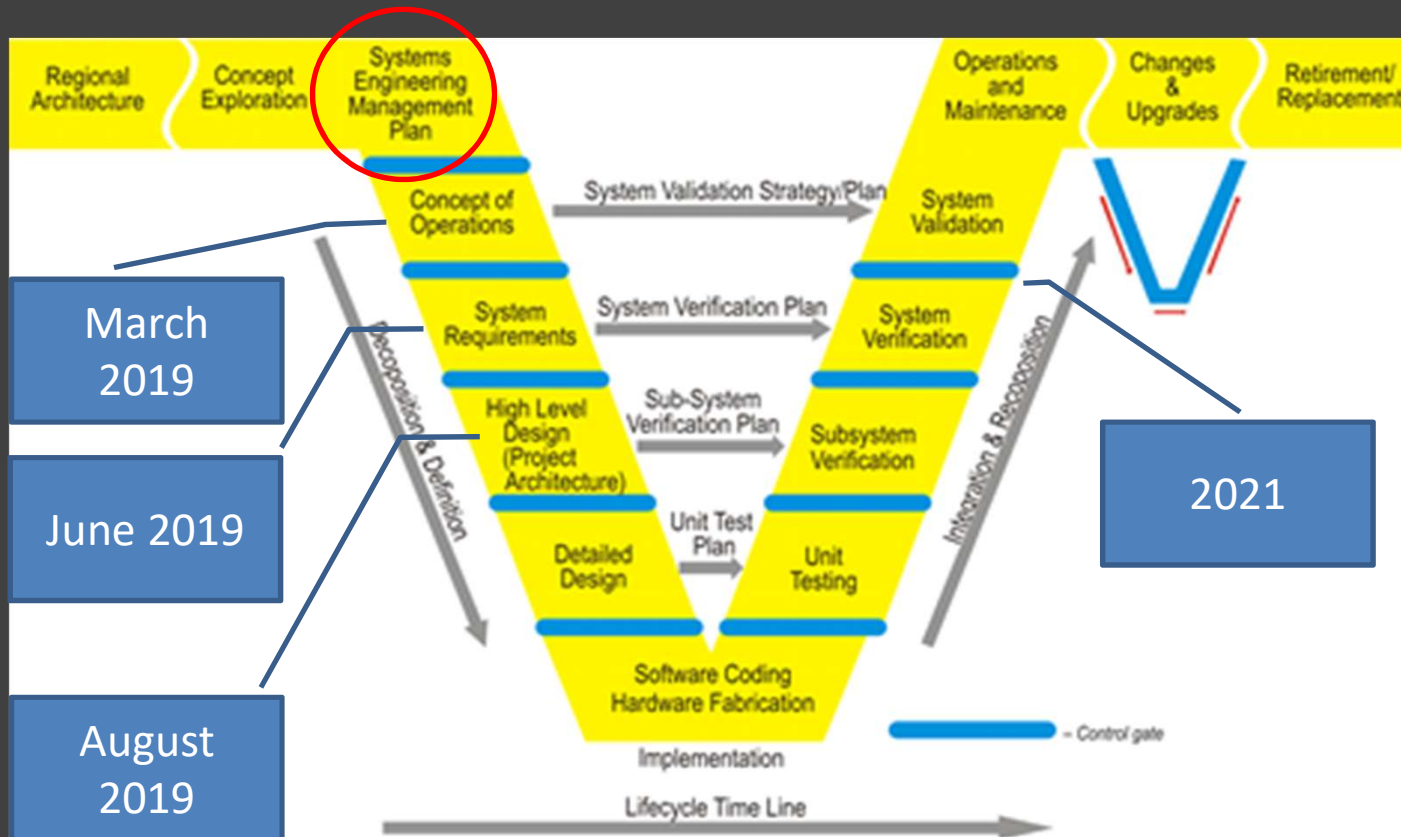
Funding questions – Federal \$ + private match?



CURRENT STATUS.



NEXT STEPS.



THANK YOU!

