

# 28<sup>th</sup> Annual CTS Transportation Research Conference

Curiosity. Discovery. Innovation.

November 2, 2017

Join the conversation!



#CTSResConf

A long-exposure photograph of a train at night, creating horizontal light trails in blue, white, and red. The background shows a city street with trees and a street lamp.

**OEI**

OFFICE OF EXTRAORDINARY  
**INNOVATION**



Metro®

# What is innovation at Metro really about?

Policy

Resource  
Allocation

Determination

“This is a really innovative idea but we can’t do it. It’s never been done before”

# MicroTransit Pilot

## Can Metro increase customer satisfaction & attract new riders?

- > A cross between a TNC-pooled service and a shuttle bus
- > Meets increasing expectation for convenience
- > Expands FMLM solutions
- > Flexible and seamless
  - Integrated with transit system
  - Serves non-linear travel



**On Demand | Dynamically  
Routed Data Driven | Corner to  
Corner**





“Well sure we’d like to do that. But we don’t have time or money.”

“If we improve our service more people will use it and we can’t afford that.”

# Strategic Plan: Key Trends & Issues

- > Increased demand on an oversubscribed transportation system
- > Changes to demographics and consumer needs
- > Technological innovations are changing the mobility landscape
- > Shortage of affordable housing relative to location of jobs and population growth
- > Need to clarify positions and policies on single-occupant vehicles, highways and streets



# Strategic Plan: Emerging Themes

- > **Provide better connections and reliable choices:** Increase access and promote a cohesive, multimodal system.
- > **Provide excellent customer-oriented service:** Improve customer experience along the entire journey.
- > **Enhance communities and lives through mobility:** Support livable, vibrant, healthy and inclusive communities.
- > **Promote regional collaboration to transform Los Angeles County and lead the nation**
- > **Responsive, accountable, and trustworthy government**



# Strategic Plan: Next Steps

- > **November 2017:**
  - Draft vision, mission, values, and key initiatives
  - Develop marketing strategy
- > **January 2018:** Collect input on draft plan
- > **Early 2018:** Board adoption of final plan



“We could have thought of that on our own.”

# Unsolicited Proposals: Background

In February 2016, Metro opened its doors to the private sector, at an Industry Forum.

- > Pledged our commitment to pursuing agency-wide innovation
- > Focus on partnerships-based approach to drive value
- > Debuted the Unsolicited Proposal Policy
  - Any company can submit a proposal on any idea
  - Encourages the private sector to tell us what we should do differently
  - Declares intention to implement ideas with financial/technical



# Unsolicited Proposals: Results

To date, OEI has received **81** proposals

> Reviewed **77** concepts

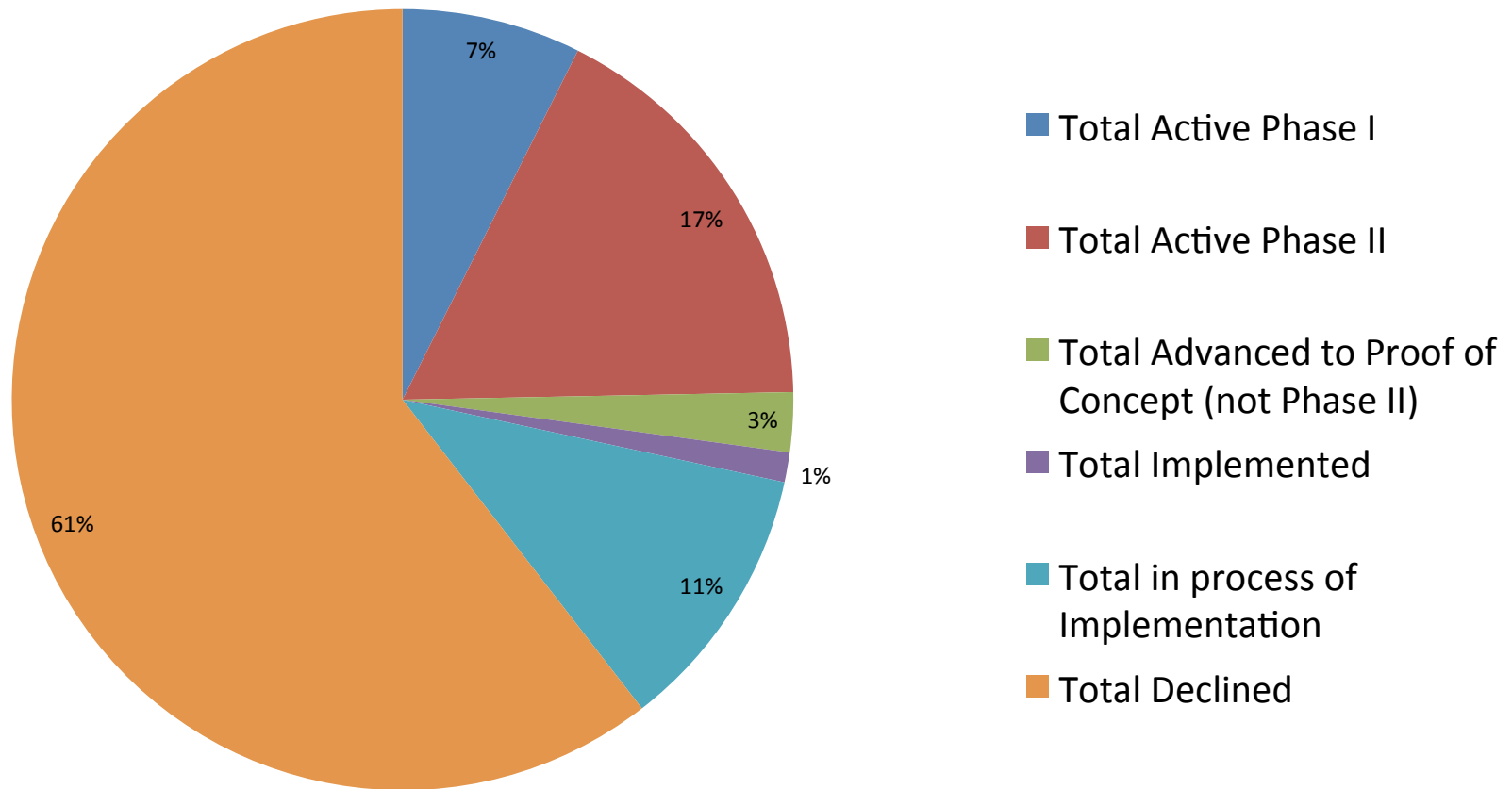
> Advanced **22** for detailed review

> Received **8** detailed “Phase II” proposals

> Brought **11** to implementation phase

- Engaged over **100** internal subject matter experts
- Received **10** proposals for megaprojects or major financing initiatives
- Other innovation pilots include data management, micro transit, mobile tolling, unmanned vehicles, and more.

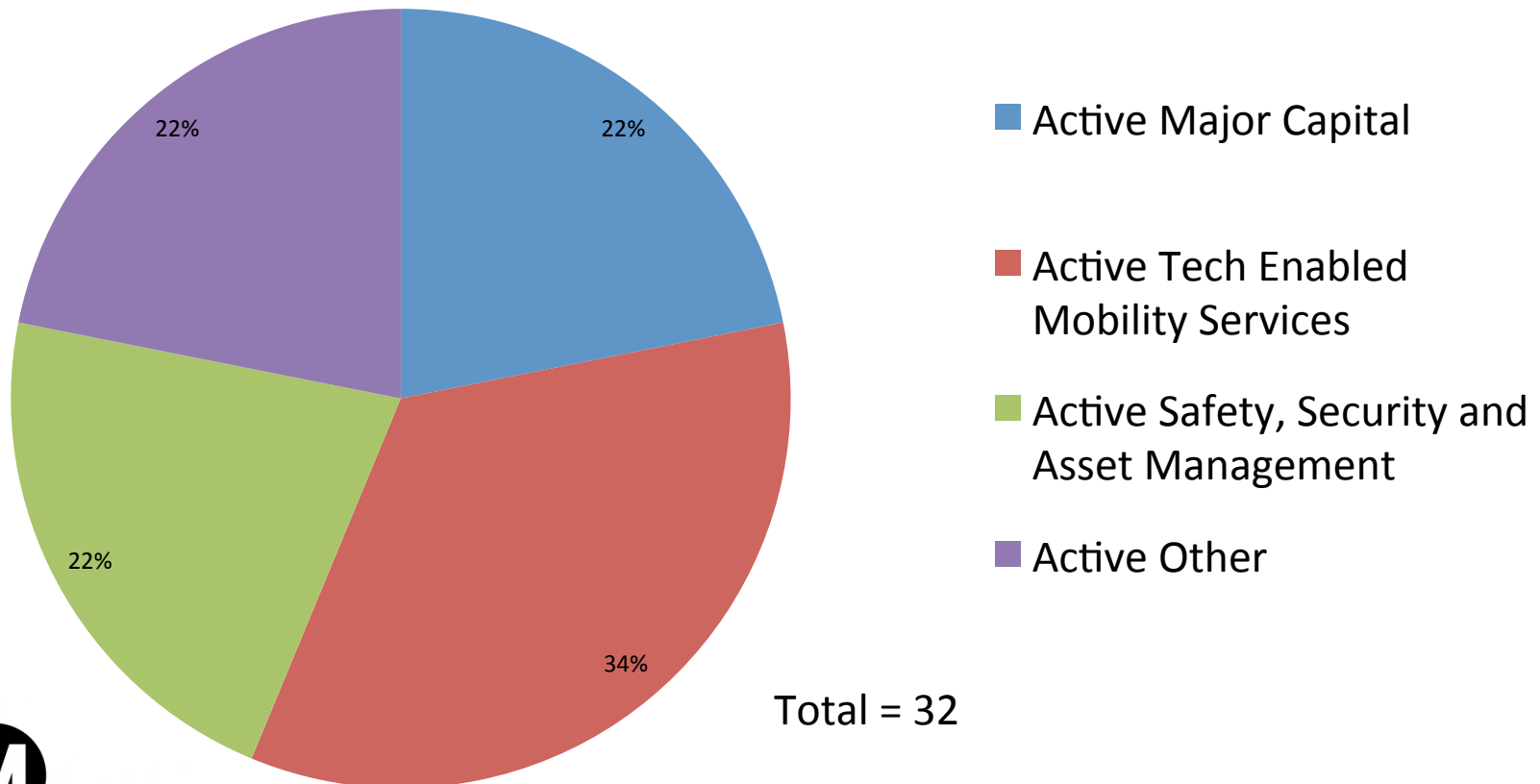
# Status of Unsolicited Proposals



Total = 81

# Types of Unsolicited Proposals

Breakdown of UPs by Category



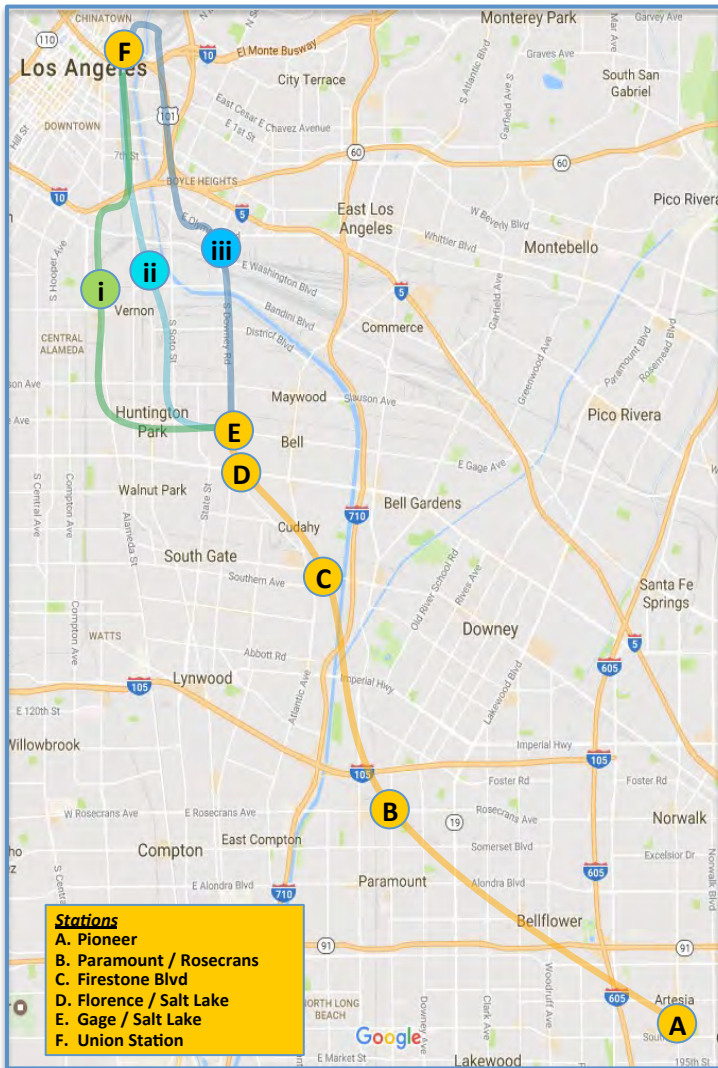
*Includes UPs implemented in implementation. Does not include declined UPs*

# Megaproject & Finance Proposals

## **OEI has advanced 3 megaprojects based on unsolicited proposals**

- > West Santa Ana Branch Transit Corridor
  - > Will be a competitive P3
- > Sepulveda Pass Transit Corridor
  - > Will be a Project Development Agreement (PDA)
- > Strategic Managed Lanes Network
  - > Toll bond underwriting pool

# West Santa Ana Branch Corridor



## Metro Planned Delivery

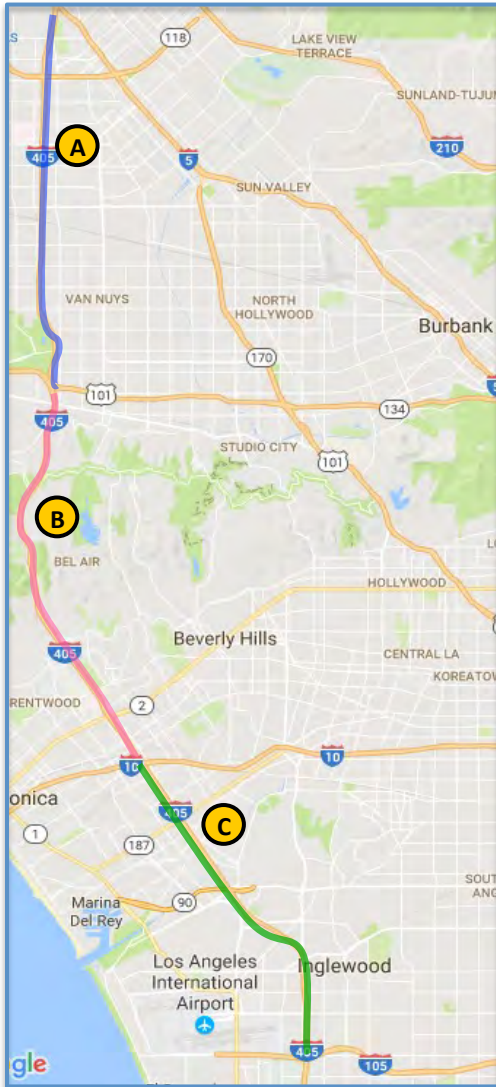
- > Light rail transit split into two phases:
  - \$3.7-\$4.5 billion capital cost
  - Groundbreaking in 2022
  - Delivery in 2028 (Phase I) & 2041 (Phase II)

## Unsolicited Proposals

- > Kiewit and Skanska proposed different models for P3 delivery, both of which combine phases and provide substantial acceleration
- > Sufficient evidence from financial analysis to indicate P3 is preferred delivery method
- > Still need to solve cash flow challenges due to early operations and debt financing
- > A Project Development Agreement did not offer substantial benefits because cash flow is the key issue



# Sepulveda Pass Transit Corridor



## Metro Planned Delivery

- > Managed lanes through Sepulveda pass with transit element
  - \$9.8 billion capital cost
  - Groundbreaking in 2024
  - Delivery in 2026 (Managed Lanes), 2033 (transit element), & 2048 (transit to LAX)

## Unsolicited Proposals

- > Parsons and Cintra each submitted proposals suggesting design and delivery innovations that could speed delivery and reduce cost of transit element significantly
- > Managed Lanes component was removed from P3 consideration due to lack of value to Metro, but revenue will still be allocated to this project
- > Includes a Project Development Agreement (PDA) through environmental process before proceeding to a P3

# Express Lanes System Financing

## **METRO EXPRESSLANES**

### **Metro Planned Delivery**

- > Tiered deployment of Express Lanes projects based on cap-ex needs on a single-project basis

### **Unsolicited Proposal**

- > Goldman Sachs suggested using excess revenues from existing Express Lanes Projects to finance cap-ex of new projects through a system-wide security with a single revenue pledge
  - Avoids use of Measure M sales tax/bond revenue, freeing funds for other projects
  - Reduces need for short term borrowing at higher rates to fund initial project costs
  - Requires us to develop a toll bond underwriting pool, among other steps
  - Is not a traditional P3, but could support/accommodate P3s with statutory authority



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# More than Major Capital Projects

“Innovation Pilots” currently under development or in implementation

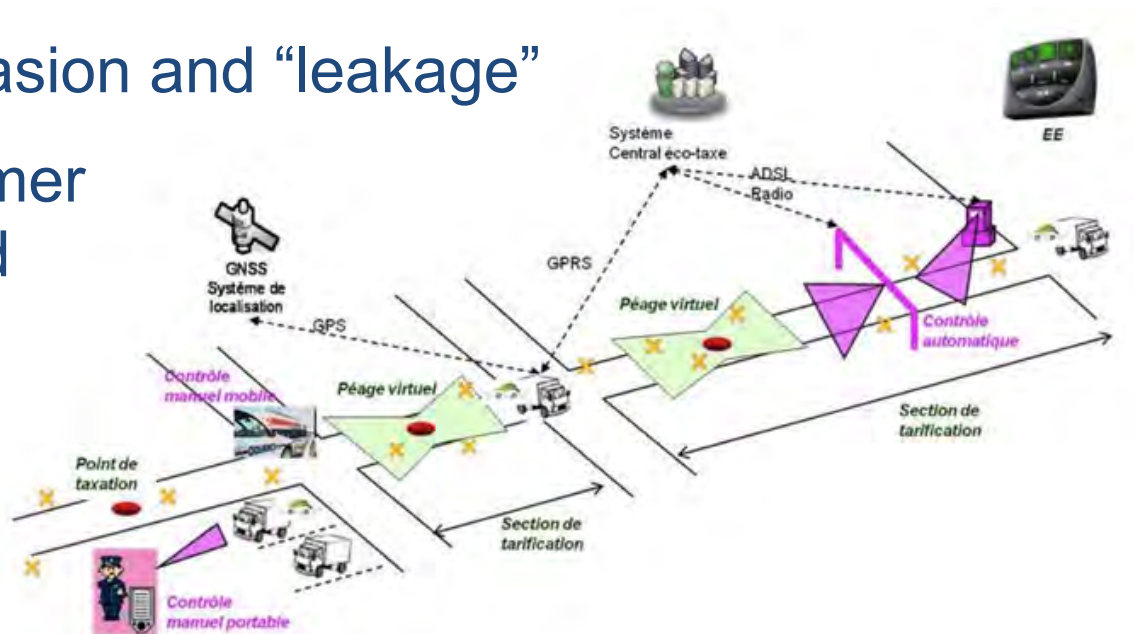
- > Micro Transit
- > Improved Real Time Arrival Information
- > Mobility on Demand
- > Preventing Costly Unplanned Outages
- > Mobile Tolling | Lower CapEx
- > Smart Bike Racks
- > V2i: Eco-Driving a Smoother Ride on the Orange Line
- > Unmanned Vehicles for Visual Inspections of Assets
- > Energy Savings
- > Lighted Safety Vest
- > Mobile Charging Vending Stations

“We shouldn’t give our customers more options – that will confuse them”

# Mobile Tolling Concept

**Can smartphones replace ExpressLanes infrastructure and improve system performance?**

- > Reduce need for gantries and transponders
- > Increase ExpressLanes user base
- > Reduce toll evasion and “leakage”
- > Improve customer experience and convenience
- > Reduce costs



# Real-Time Customer Information

**Could more accurate ETAs when riders need them most improve customer confidence?**

- > Evidence that poor arrival info hurts rider retention
- > Improved arrival prediction + better bus location data
- > Prediction accuracy improves as bus nears
- > **More certainty for customer, especially to avoid missed pick ups**



# Smart Bike Racks

**Could better bike access at stations allow more people to bike to Metro with fewer bikes on board trains?**

- > Stronger locks and CCTV
- > Shared-use, free to customer
- > Accessible via walk-up or app
  - Potential TAP integration
- > Complements other bike planning initiatives





“This is a waste of time and money. That’s  
what Bob told me.”



# Vehicle-to-Infrastructure Communication

## Can better information help Bus Operators catch more green lights on the Orange Line?

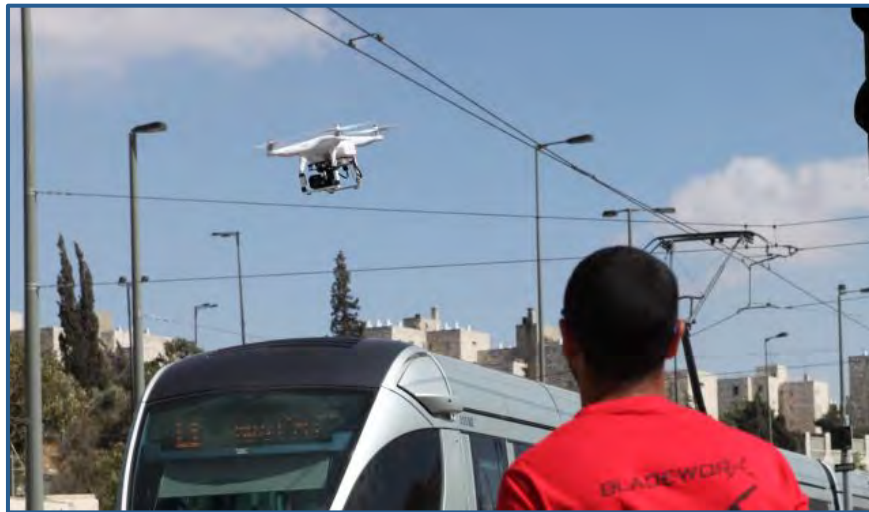
- > Faster, smoother ride for customers
- > More service with fewer buses
- > Reduced fuel consumption
- > Software development planned for small scale pilot



# Drone-Based System Inspection

## Can Metro utilize drones to inspect more for less?

- > Safer, more flexible operation
- > Increased efficiency, cost effectiveness and data capture
- > Broad range of additional use cases



“Why would we help a competitor?”

# Mobility on Demand

Partner with a transportation network company to provide better and more equitable access to 3 pilot transit stations



TNC TO BE  
NAMED  
LATER



# Creating a Culture of Innovation

The Office of Extraordinary Innovation brings Metro staff together to solve problems and drive innovative thinking...

## Systems Thinking

Matrix-based structure promotes connections & systems over silos  
(policy)

## Market Exposure

Exposes Metro staff to a wide range of ideas, approaches, and products (resource allocation)

## Problem Solving

Assessing fit for Metro encourages problem solving over obstacle identification  
(determination)

## Critical Thinking

Novel concepts that don't fit with existing protocols demand critical thinking  
(determination)

## Solutions Focus

Shift from process-focused "Can we do this?" to solutions-focused "Would it add value?" (resource allocation)



**THANK YOU**



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