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TO: BOARD OF DIRECTORS

THROUGH: PHILLIP A. WASHINGTON PAW
CHIEF EXECUTIVE OFFICER

FROM: JOSHUA L. SCHANK JLS
CHIEF INNOVATION OFFICER

**SUBJECT: OFFICE OF EXTRAORDINARY INNOVATION (OEI) QUARTERLY
PROGRESS REPORT**

ISSUE

OEI was created in 2015 to develop and implement ideas to improve mobility in Los Angeles County. This is the fourth general update to the Board highlighting current OEI activities and initiatives in greater detail. In addition to a general update on the status of all unsolicited proposals, it includes updates on Unsolicited Proposals related to accelerating capital projects and integrating on-demand services into our system. This progress report also provides updates on the Metro Strategic Plan and OEI's Internal Consulting engagements.

DISCUSSION

Unsolicited Proposals Update

Since the establishment of our Unsolicited Proposal Policy in February 2016, Metro has received 56 unsolicited proposals. We have completed 26 Phase I reviews to date, of which 12 have resulted in a request for a Phase II Detailed Proposal. We have issued RFI's for 5 projects including Via, Covington & Associates, Accenture, aUniform, and Green Charge. Metro has received 2 Phase II detailed proposals.

A list of all the proposals received to date with a short description and status is available in Attachment A.

Phase II Proposals Received – Via and Covington & Associates

Metro received its first Phase II proposal from Via Transportation, Inc., an on-demand micro-transit service and software system provider. OEI is currently working across departments to develop a pilot and issue an RFP for this type of service. The second

Phase II proposal was from Covington & Associates for an ITS configuration management software that could identify misconfigurations that lead to unplanned outages. After a successful Phase II review, the review team is recommending a competitive procurement for this type of software.

Major Capital Infrastructure UPs – West Santa Ana, Sepulveda, ExpressLanes

To date, Metro has received 9 proposals for major capital construction projects, including 3 for the West Santa Ana Branch project, 3 for the Sepulveda Pass, and one for the West Side Purple Line Section 3. The West Side Purple Line proposal was rejected by our review team because it did not show sufficient promise for accelerating that project or improving risk allocation. The proposals for Sepulveda and West Santa Ana are still under review.

Metro's review team has advanced a proposal from Goldman Sachs to apply a regional approach to developing and managing Metro's ExpressLanes to Phase II and staff are working with our Financial Advisors to develop and submit a Request For Information (RFI). In order to enable our Financial Advisors to develop the RFI for a proposal from Parker Infrastructure Partners, Metro is working with Parker to develop a non-disclosure agreement.

Swiftly Proof of Concept – Getting Better Information to Customers

OEI and ITS recently implemented a test pilot with Swiftly, which seeks to improve bus location and real time arrival information by installing GPS trackers on buses and running the GPS data through their Transitime software. In order to test the proposal's core value, OEI and ITS designed a limited proof of concept, outfitting buses on two Metro Rapid routes (35 buses) with GPS trackers. The preliminary results have been encouraging, with the trackers reporting bus locations every 10 seconds versus our current standard of every 3 minutes.

If brought to scale, the improved data inputs, processing, and outputs could mean better location and arrival information for both customers and Operations at minimal cost. An illustrative "Swiftly Tracker Comparison" video is available at <https://youtu.be/ByZBoYxm018>.

Trapeze State of Good Repair

Another project of note came from Trapeze, a company proposing to improve Asset Management's planning, reporting and tracking of Metro's assets through their integrated software platform. After Phase I review, the review team is recommending that Metro exercise the option under our policy to move forward to a competitive procurement immediately, beginning the process of issuing an RFP instead of moving the proposal to Phase II.

Progress Report: Ongoing OEI Initiatives

Visionary Project Seed Funding

Measure M makes available \$20 million in funding over the next 40 years for Visionary

Project Seed Funding, equating to \$500,000 to be distributed per year. OEI is working to develop guidelines associated with Measure M that will specify how these funds can be used to develop exciting and innovative ideas for the future of transportation in LA County.

Internal Consulting

Since launching Internal Consulting within OEI, we've seen some exciting new innovations move forward in departments with whom we've been working closely.

ITS – Connected Bus Project

We have been working with ITS to move forward in equipping our Bus fleet with Wi-Fi. This fall, we received a shipment of 145 new buses equipped with Wi-Fi, which is being rolled out a pilot to test the benefits to the customers. The deployment of Wi-Fi on our buses is the foundational first step towards the roll out of other critical Metro goals. Operationally, Wi-Fi will enable improved security video feeds, create the foundation necessary to retrofit our TAP validators to reduce information latency, and more. From a customer perspective, Wi-Fi will help our low-income customers bridge the digital divide by providing a free alternative to using phone data plans, and it will also provide better information on when the next bus or train will arrive. Wi-Fi also opens up new opportunities for data collection and management, and catalyzes integration of our buses with new digital tools and mobility services.

TAP – Accounts Based System

At the November Board Meeting, the Board approved a contract with Vertiba to build a back-end accounts based fare system that is necessary for creating a more regional and multi-modal system. This investment will catalyze integrations between TAP and third party products and services including but not limited to bike share, parking, mobile ticketing, TNCs, and more.

Wi-Fi on buses and a more versatile, regional TAP system are two foundational, customer-oriented improvements that increase Metro's flexibility and capacity for innovation. OEI has been working closely with each department to help overcome any potential obstacles to implementation.

Street Signal Interface

The Street Signal Interface project aims to improve run times and increase efficiency along the Metro Orange Line. The project, which was submitted to OEI by a Metro Employee, involves developing an application that displays information for the Bus Operator based on where the bus is located and the phasing of the light signals ahead. The application is expected to help Operators optimize their runs, offering a smoother, safer, and faster ride.

Innovation Newsletter

Last week, OEI released its third newsletter, available on at Metro.net/oei. Our newsletter helps keep the innovation and transportation communities informed about the types of ideas that might be most useful to submit to Metro as unsolicited proposals.

Development of Metro Strategic Plan

OEI has conducted over 50 meetings and interviews with internal departments and external stakeholders to seek input on the Metro Strategic Plan (MSP). At least 100 meetings and interviews will be scheduled over the next few months as part of a comprehensive outreach effort. These conversations will result in summaries of the trends, themes, opportunities and challenges that will guide the development of the agency vision, goals, and guiding principles. The MSP will establish the roadmap to guide Metro in achieving our goals, ensuring that our agency can nimbly adapt to the changing mobility needs of LA County residents. The MSP will set the foundation for other business strategies and align all of Metro's programs and projects toward a unified vision. The draft MSP will be completed towards the end of fiscal year 2017.

OEI is also preparing a comprehensive customer survey to assess the mobility needs of County residents. The results of this survey will also inform the initiatives in the MSP.

OEI is currently procuring professional services to develop and deploy an agency-wide Employee Empowerment and Engagement Survey to assess Metro staff readiness to execute the initiatives in the MSP. Metro management is working with union leadership to share the project scope, goals, and objectives. The questions used for the survey itself will be shared with union leadership. Metro intends to take action to make improvements for the employees, based on the results of the survey.

NEXT STEPS

- OEI will continue evaluating unsolicited proposals with the help of other Metro departments and Financial Advisors.
- OEI will continue to work with various Metro departments to move towards a competitive process and implementation on several unsolicited proposals.
- OEI will continue to follow its work plan towards developing a strategic plan.
- OEI will continue building a culture of innovation by building participatory and communicative channels for idea generation, evaluation and sharing.
- The OEI will provide updates to the Board periodically.

Attachment A – Unsolicited Proposal Status Log

ATTACHMENT A – Unsolicited Proposal Status Log (as of January 18, 2017)

No.	Originator	Summary	Status
1	VIA	Utilize dynamic vehicle routing software to provide more demand responsive transportation	Phase II Received
2	Covington & Associates	Assess exposure to unplanned outages and develop mitigation measures.	Implementation / Procurement
3	Trapeze	State of Good Repair and capital planning management software system	Implementation / Procurement
4	aUniform	Demo of self-illuminating safety vests	Advanced to Phase II; RFI Issued
5	Accenture #1 – Tolling	Mobile tolling and virtual gantries via geofencing.	Advanced to Phase II; RFI Issued
6	Green Charge	Reduce peak demand energy costs by distributing energy differently and across batteries.	Advanced to Phase II; RFI Issued
7	Swiftly #1 - GPS	Low cost solution to supplement existing GPS tracking system to improve real time data accuracy.	Conducting Proof of Concept Pilot between Phase I and II
8	Goldman Sachs	Systems or regional network approach to developing and managing our HOT lanes network	Advanced to Phase II
9	Parker	Proposal to finance mega projects using an alternative finance approach.	Advanced to Phase II
10	Waltz	Make fare payments easier for smartphones while creating paid advertising and public information space as well as new data streams.	Advanced to Phase II
11	Media Arts	Subscription service using unmanned vehicles, data management, telemetry and other sensors/connections to pilot improvement in an area such as incident response, track management, accident avoidance, traffic control, surveillance, surveying and/or security.	Advanced to Phase II
12	Uber	Metro partnership with Uber to provide first last mile service and service in underserved/ low income areas.	Advanced to Phase II
13	Green Commuter	Use electric Tesla vans for Metro employee vanpool, with the option to use the buses for other things during the day	Advanced to Phase II

ATTACHMENT A – Unsolicited Proposal Status Log (as of January 18, 2017)

No.	Originator	Summary	Status
14	ACS Infrastructure Development, Inc. and Dragados USA	Accelerate West Santa Ana Branch Corridor Light Rail Transit Project including availability payment P3 financing model	In Process
15	Skanska USA	West Santa Ana Branch transit line acceleration through competitive DBFOM process	In Process
16	HDR Sepulveda Corridor Development	Develop and build Sepulveda Pass ExpressLanes and tunnel with PDA approach and DBFOM model, without Federal funding.	In Process
17	Parsons Sepulveda Multi-Modal Corridor	Develop and build Sepulveda Pass rail and ExpressLanes with minimal tunneling using DBFM approach.	In Process
18	Kiewit + AECOM WSAB Corridor	West Santa Ana Branch transit line acceleration DBF.	In Process
19	Ferrovial-Cintra Sepulveda	Develop, build and accelerate Sepulveda Pass ExpressLanes and rail using a PDA approach and DBFM or DBFOM.	In Process
20	Via Analytics	Demo headway based dispatch and operation on a bus line to improve on time performance and fleet utilization.	In Process
21	MobileQubes	Battery pack concession pilot offering a revenue sharing arrangement.	In Process
22	Infrashares Inc	Utilize crowdfunding donations, equity and debt for funding/ financing infrastructure projects.	In Process
23	WWT Air Mass Tunnel Generation	Generates electricity using the tunnel winds created by the subway.	In Process
24	AECOM Ventures	Critical infrastructure, security and preparedness initiative.	In Process
25	HDK Media	Marketing campaign.	In Process
26	Unity Consulting	Electric scooter-way transit system.	In Process
27	Goldman Sachs #2	Accelerate projects through financing optimizations.	In Process
28	Here Design Studio & Legacy Games	Interactive and educational public installation.	In Process

ATTACHMENT A – Unsolicited Proposal Status Log (as of January 18, 2017)

No.	Originator	Summary	Status
29	TransitVUE	Dynamic plexiglass illuminator signage that lets you know where you are on the Orange Line	Phase I Not Advanced
30	Southern AM	Retrofit of bus fareboxes with 4G LTE Cellular Link	Phase I Not Advanced
31	TranspoGroupAV	Metro to co-host an autonomous vehicles working group with TranspoGroup to develop policy recommendations	Phase I Not Advanced
32	Swiftly #2	Integrated transit app that leverages real time information from multiple mobility options to help riders determine best mode of travel their trip.	Phase I Not Advanced
33	Optibus	Address bus delays before they impact customers by alerting control room operators about buses that might be late for their next trips.	Phase I Not Advanced
34	Skybus	Pilot vanpool to a suburban business park to prove concept and technology	Phase I Not Advanced
35	Steiny & Company	LED upgrades for Metro Blue Line parking lots	Phase I Not Advanced
36	Tubular Rail	Preliminary design and engineering assessment for tubular rail	Phase I Not Advanced
37	Cambridge Systematics	Develop and deploy a shared mobility trip planning platform	Phase I Not Advanced
38	ThermoGuard	Piloting energy rejection glass that reduces glare and optimizes bus climate and energy use.	Phase I Not Advanced
39	Accela	Right of Way Management software for Purple Line Extension.	Phase I Not Advanced
40	Rhythm Engineering	Automated signal control technology.	Phase I Not Advanced
41	Owlized	Visualization and virtual reality tools for conducting public outreach and collecting feedback on projects.	Phase I Not Advanced
42	Moovit	Partnership with trip planning platform to co-market and learn trip planning best practices.	Phase I Not Advanced
43	Accenture #2 – Energy Management	Energy management as a service, including shared savings model.	Phase I Not Advanced
44	SoftWheel	Pilot revolutionary bike wheel on bike share, including offering wheelchairs.	Phase I Not Advanced
45	XCLMark	Reduce customer friction points using a patented synch router to embed important and tailored information into the ambient environment.	Phase I Not Advanced
46	Sovrn Holdings	Pilot to monetize several of Metro's web and mobile apps through advertising.	Phase I Not Advanced
47	Bones and Greens	Human performance assessments and workshops	Phase I Not Advanced
48	Air Weather & Sea Conditions	Weather alerts and forecasting for the Expo Line	Phase I Not Advanced

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49	Skanska USA	Phase 3 Purple Line Tunnel Acceleration by Q2 2024	Phase I Not Advanced
50	Lloyd Morris Productions	Before and After video documenting the transformation of the Expo alignment and immediate community between Culver City and Santa Monica	Phase I Not Advanced
51	MobilEye Shield +	Bus collision avoidance system	Phase I Not Advanced
52	Connecthings	Software as a Service Bluetooth beacon network	Phase I Not Advanced
53	Street Signal Interface (Internal)	Street signal interface for real time management of Metro Orange Line	Off-Ramp -- Internal Consulting
54	RideAmigos	Proposed partnership for pilot program to test TAP card incentives that could induce mode shift from SOV use	Off-Ramp - TAP request
55	BYD	Buy back 8 electric buses; supply 8 new ones with option to extend	Off Ramp - Considered a contract renegotiation
56	CanAM Enterprises	Innovative Capital Financing proposal	Off Ramp – Treasury Review

LEGEND

- **Phase I or II Not Advanced** – Metro has declined to continue review of the proposal based on lack of financial and/or technical merit and/or scope
- **In Process** – Metro is in the process of reviewing the proposal
- **Advanced to Phase II** – Metro has indicated interest in learning more details through a Phase II proposal, but has not yet received the Phase II Detailed Proposal
- **RFI Issued** – After advancing the proposal to Phase II, Metro offered additional information including relevant parameters, key policies and outstanding questions to the proposer. This is intended to provide the proposer an account of the review team’s thinking before submitting a Detailed Phase II Proposal.
- **Phase II Received** – Metro has received a more detailed proposal and Phase II review is “In Process”
- **Implementation/ Procurement** – The review team is in the process of implementing or procuring a concept as a direct result of a UP review process
- **Off Ramp** – Concept is being reviewed and/or pursued outside of the Unsolicited Proposals Process