

Foothill Gold Line Extension to Add Value and Complexity to I-210 Corridor

On September 23, the Pasadena to Azusa segment of the Foothill Gold Line extension reached substantial completion on time and on budget and was turned over to Metro for pre-revenue service. The Foothill Gold Line Construction Authority held a series of dedication ceremonies at each of the six new stations and the 24-acre Operations Campus located in Monrovia. “Reaching substantial completion is an important achievement for the entire team at the Construction Authority, Metro, and with our contractors and consultants,” stated Construction Authority CEO Habib F. Balian. “We are proud to be the first light rail project funded by Measure R to have broken ground and to now be completed, and we look forward to handing the project over to Metro as they prepare to put the extension on-line in 2016.”

The expansion of the Metro Gold Line will provide traveling commuters and local residents with more

mobility opportunities and an alternative mode of transportation throughout the county. In addition to enhancing the capacity along the I-210 corridor, the completed extension encourages sustainability, supports the reduction of greenhouse gas emissions, and promotes a more active transportation community. Residents will see added value to their community and have better connection access throughout the county. In addition to the light rail expansion, residents have seen vast improvements to bicycle and pedestrian accessibility.

In October, Metro announced passenger service of the Gold Line will begin March 5, 2016. With an expected daily ridership of 13,600 and anticipated transit-oriented development creating new jobs and new tax revenue around the stations, the benefits of the

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Monrovia Gold Line Station Dedication

Update

The I-210 Pilot team has been quite busy since our Summer newsletter. Meetings on the requirements began in August and continue to take place (article on page 4). Stakeholders participated in ITS California and an IPAM workshop in September and October respectively, to promote Connected Corridors (more on page 5). This issue's Q & A focuses on what Caltrans Headquarters is doing to support the CC Pilot (page 3). Stakeholder networking is already changing how incidents are managed (page 6).

Some of the best news happened in September when the Metro Board officially approved the 2015 Call for Projects list, which included the highest-ranking project in the Signal Synchronization and Bus Speed Improvements project, our own "I-210 Connected Corridors Arterial Systems Improvements" for approximately \$6.4 million. When added to the Caltrans SHOPP funds for the freeway improvements for approximately \$24 million, this total funding for the freeway and the arterials will allow us to move forward with the first phase of the project. This is a huge victory for the I-210 Pilot and a huge THANK YOU to all of our stakeholders for your involvement throughout the application process.

Caltrans Creates Agency's First Corridor Manager Position



This past summer, Caltrans District 7 continued to pave the way for ICM by hiring the first Corridor Manager, Samson Teshome. Samson is now responsible for day-to-day Transportation Systems Management and Operations (TSM&O) activities and overall performance of his assigned corridors: Interstate 210 and sections of I-605 and I-10.

The Corridor Manager position is one of many new changes at Caltrans District 7 as part of the innovative reorganization plan. The reorg moves the Division of Traffic Operations from functional to geographically-based units with the primary goal of focusing on corridor and system management.

Samson has hit the ground running, already digging into the performance measures for the corridors and attending numerous I-210 Pilot meetings. He has quickly become a valued Connected Corridors team member, taking part in the development of the requirements and reviewing all the collected data to begin the 'before' studies. "My goal as a Corridor Manager is to work collaboratively with all stakeholders to yield an optimized transportation system throughput and reliable traveler information to commercial vehicle operators, commuters, pedestrians, and bicyclists," says Samson.

Sam Esquenazi, the I-210 Pilot Director, will remain in his current role and continue to champion the project through deployment. Upon completion of the pilot, there will be a passing of the torch to Samson and his team to maintain the day-to-day operations of the I-210 Pilot tools and oversee the overall health of the corridor. "We have a lot of hard work and challenges ahead of us, but it will be a success based on the efforts of Team 210 and the development of the charter," adds Samson.

Samson understands the I-210 Pilot has significant statewide implications. "This is just the tip of the iceberg. It's critical we make it a success." He emphasizes that there is a lot of focus on developing something that can be used throughout the state, adding that "this is our first step forward to having a fully integrated system."

Samson has worked in District 7 since the start of his career with Caltrans in 1998. He has rotated through many divisions including Traffic Operations, Design, Construction, and Planning. Since 2012, he served in the I-5 South Corridor as a Transportation Management Plan (TMP) and Safety Coordinator and received several accolades for effectively averting detour conflicts and minimizing construction-related traffic impacts. His diverse work experience and long history in District 7 have helped prepare him to play a vital role as the first Corridor Manager in the state.

Welcome, Samson, to the Connected Corridors team!

Q & A with CC Pilot Partners

In this third installment of the Question and Answer series, we asked Nick Compin, Caltrans' Statewide Connected Corridors Project Manager, to share his perspective with us regarding the future of Connected Corridors and how Caltrans is changing to support corridor management. A special thanks to Dr. Compin for his time.

1. How are Caltrans Headquarters (HQ) and Caltrans' Districts (in particular, D7 for the I-210 Pilot) working together regarding corridors in California?

About four years ago, Caltrans Headquarters Division of Traffic Operations, PATH, Caltrans District 7 Los Angeles Traffic Operations, and the Los Angeles County Metropolitan Transportation Authority came together and created a team to think about how we could conduct Integrated Corridor Management (ICM). Since that time, we've worked very closely together to leverage all of our resources to ensure the CC Pilot is successful. We also continue to work together to determine what portions of the pilot can be used to standardize our approach to ICM throughout California. So we have a Pilot, and then we have the broader CC Program that HQ is fully supportive of and beginning to promote to other districts.

Headquarters is very involved in the meetings with I-210 Pilot stakeholders, weekly with a core team and every six weeks with all of the stakeholders; and we're also putting together the tools that the CC Pilot needs, and that others will need, to pursue corridor management in the future. It's a slow process, but the goal is to equip any interested district with the right framework for corridor management success.

2. How are some of the important "concepts" and programs at HQ filtering down to the districts? TSMO, CMM, etc.?

It's more like spreading: to upper management and partner agencies and functional managers and individuals! One effort is that we're distributing a draft Director's Policy (DP-08) on transportation system management and operations (TSM&O). This outlines how and why TSM&O is important to Caltrans and outlines roles and responsibilities of management to facilitate the integration of TSM&O into Caltrans' culture.

Many of us at HQ have also been coordinating and advising other Caltrans divisions and learning from and sharing with national, and even international efforts, to promote TSM&O, Regional and Sub-Regional Operations Forums, the Capability Maturity Model (CMM) self-assessments and, of course, ICM and Connected Corridors. So we are casting our net broadly

to spread the word as far as possible as part of our efforts.

3. What's happening at HQ and other Districts to move CC forward?

Several years ago, Headquarters Traffic Operations re-organized to focus on transportation system management and operations (TSM&O). Thus far, this new TSM&O-focused organization is being implemented in three districts, and more will follow as they see the benefits. At its heart, this new org relies on cross-functional teams tackling the challenges we are facing in order to achieve institutional, operational, and technical integration of TSM&O and Connected Corridors. A good example of this is that my staff and I are holding bi-weekly meetings with staff from the HQ Division of Traffic Operations Office of Technology: staff who coordinate traffic signal software, system design, and are the liaison to the Caltrans' Division of Information Technology. We all need to share information, collaborate, and make progress together. Standardizing necessary processes and tools is very important so ultimately all Caltrans districts can take full advantage of what we're learning and producing through the CC Pilot.

We have to change the culture of Caltrans to embrace TSM&O. One way we are changing Caltrans culture is that we're closely involved in creating Caltrans' newly adopted department-wide System Performance Goal: "Utilize leadership, collaboration, and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers."

We are also changing the way we do things: pushing the envelope, so when we meet with others, we're asking 'how do we do it,' instead of 'can we do it.' That simple change invites people to think of ways they can help and be a part of what we are building here.

Lastly, we have assisted in identifying funding through the State Highway Operations and Protection Program (SHOPP) and worked closely with LA Metro and local partners to secure Metro funding, all to benefit the Connected Corridors I-210 Pilot. This level of collaboration to ultimately manage transportation in

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Requirements Gathering for the I-210 Pilot

A New Methodology



Over 20 stakeholders attended the Pasadena requirements meeting in August

With the Planning Phase of the I-210 CC Pilot complete, it was time to consider how to gather requirements from the stakeholders. The leadership team decided to try a slightly different methodology than what other projects have used and took an approach of “Actors” and “Stories.” This idea was vetted among other team members with additional brainstorming about how the process might work. The team then branched out to start meeting with stakeholders. The User Needs that were defined in Phase 1 were also mapped to the stories.

What are “actors” and “stories?” Actors are anyone who is involved in any aspect of the I-210 CC Pilot, including:

- Managers
- Technical Staff
- Operators
- Public Relations
- Data Managers
- Drivers and Passengers
- Organizations
- Public Safety
- Systems and System Operators
- Third Parties

Stories are the events that occur that the system needs to be able to address. This includes:

- Incident Management Planning (generic)
- Incident Management Execution (generic)
- Day-to-day Operations
- Maintenance
- Unplanned Problems
- Reporting and Performance Evaluation
- Program Management

Next, the team thought about the system and what components are necessary for it to function. With a system composed of people, organizations, software, and hardware that must work together to accomplish the project goals, it became clear that identifying requirements would be an educational as well as definitional process. The requirements would need to:

- Specify the expectations for each system component
- Emerge from interactions among users

Once the preliminary list of actors and stories was assembled, the team started meeting with stakeholder agencies and groups. This included: (a) Caltrans Headquarters departments, including ramp metering, traffic signal operations, and lane closure management; (b) Caltrans District 7 departments, including electrical engineering and maintenance; (c) Traffic Management Team (TMT) and Lane Closure Systems (LCS), ramp metering, support units, and operations from the Caltrans Traffic Management Center (TMC); and (d) the cities of Pasadena, Arcadia, Monrovia, and Duarte. Meetings with Pasadena and Arcadia were held in August and had good attendance, including police, fire, engineering, traffic signal operations, management, and other personnel. LA County also attended these meetings. The Monrovia and Duarte meetings are in the process of being scheduled.

Additional meetings will be scheduled with bus and rail operators in the corridor, LA County, and others. Once the initial meetings have been completed, we will set up meetings with cross-jurisdictional/agency groups such as Traffic Engineers, Operators/Dispatchers, Public Safety, Public Information Officers, and others as needed.

The final “product” of the requirements-gathering process will be the preparation of a set of requirements and design constraints that will then be discussed with the stakeholders, particularly if there are conflicts. It is important that all actors feel they have a voice in what is needed for the CC Pilot to work for them. So far, the process has been well received with good information coming from all of the meetings. We’d like to thank everyone for their time and participation in the Requirements discussions!

I-210 Pilot Stakeholders Promote Connected Corridors at ITS California and IPAM

In September, the ITS California Annual Conference was a “who’s who” of transportation professionals, including many Connected Corridors I-210 Pilot stakeholders. Several sessions mentioned or highlighted Connected Corridors and/or the I-210 Pilot, including the opening remarks by Caltrans Director Malcolm Dougherty.

Joe Butler moderated a session called “Integrated Corridor Management – Continuing Growth and Adoption” which had a varied and interesting panel of speakers, including Ahmad Sadegh from Schneider Electric discussing “Integrated Corridor Management to Integrated Regional Management” related to the US-75 ICM project in the Dallas area; Nick Compin speaking about the strategic approach to statewide ICM; Jim Peters from DKS Associates focusing on the Oregon experience (“Using Real-Time Data to Automate Variable Speeds and Traveler Information”); and Jane Macfarlane from HERE (Nokia) taking it all a step further and speaking on data, new metrics, and the internet of things and people.

The I-210 Pilot stakeholders met informally for beverages and networking and a congratulatory “thanks to all” for the project’s successes: the signing of the Project Charter, funding for the arterials and freeway, and the completion of the Planning phase.

Other sessions that had implications for the CC Pilot included topics such as Smart Cities, Sustainable Communities, Autonomous/Connected Vehicles, Cybersecurity, Transit Technologies, 511, Financing, and others.

The following month, several members of the I-210 CC Pilot team presented at a one-day IPAM workshop titled “Advancing Traffic Control through Big Data and Connectivity.” Allen Chen and Samson Teshome presented during the session, and Fred Dock, Steve Gota, Alan Clelland, Jane White, and Edward Yu participated in the panel discussion. Approximately 60 people attended the event held on the UCLA campus.

We look forward to participating in next year’s ITS CA Conference and other workshops and conferences throughout the year to promote Connected Corridors and the innovative work the I-210 team is doing.



ITS CA session on ICM



Opening speakers at ITS CA including Mr. Dougherty



Celebratory event for I-210 Pilot stakeholders at ITS CA



IPAM workshop with I-210 Pilot stakeholders

Connected Corridors Team Already Communicating on Incident Response

Incidents on Interstate 210 are an every day occurrence, but when 90,000 fans are expected at an 8pm soccer match at the Rose Bowl, the stakes are high. This was exactly the situation on July 21, 2015 when a dump truck carrying a load of hot asphalt jackknifed just before 1pm on WB I-210 near Lake Avenue in Pasadena, ultimately blocking the left three lanes.

Sam Esquenazi with Caltrans District 7 was closely monitoring the situation, but the incident was not clearing as quickly as expected. With multiple lanes still blocked over two hours later, Sam reached out to several Pilot partners to make them aware of the situation. “In a sense, it was a Connected Corridors effort,” says Sam. “I told them about the issue and requested they do whatever they can to help get cars moving on the arterials.”



July 21st crash on I-210, courtesy of Pasadena Now

Without this contact, each agency would have found out about the backup through informal channels, if at all, further delaying each agency’s response, and traffic. When Pasadena got the call, their Traffic Management

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a corridor is new to Caltrans, but we’re committed to forging the best path for the long term.

4. How do you envision the documents and lessons learned from the I-210 Pilot being used in other districts?

When an interested District or regional partner reaches out to HQ Traffic Operations, we advise them to use the documents, many of which are on the CC website, and the information that has been developed through the Pilot and help coach them through the process. I personally think it’s going to be invaluable for Caltrans Districts to have a pathway forward. The Pilot is developing the pattern and institutionalizing the processes, making it easier for all Districts to follow. This in turn will enable HQ to better assist each District since they will be following a more standardized approach.

5. What districts are next in line for ICM/CC?

District 12 is very excited about CC and is looking into their options in the Anaheim Triangle area of Orange County. In District 3 - Marysville, they are pursuing a joint effort between planning and operations for corridors in Sacramento, so we are helping them look at their capabilities and how they can best move forward, starting with a regional concept of operations. We’ve also had a few other districts who are interested in CC and are now looking at the resources developed through the I-210 Pilot to see where they need to begin.

6. Is there anything else you would want stakeholders to know?

I really want to applaud their energy, their ideas, and their willingness to be a part of the team. In the beginning, we were a small group, but as we’ve progressed, and explained what we’re doing, and how successful we’ve been thus far, and what we want to accomplish, we continue to gain momentum. The level of energy and creativity that our stakeholders continue to bring to the table has been really energizing for me personally, and everyone here in Sacramento. When you start a project like this, you don’t really know how it’s going to go. We have to do this right the first time and all of our stakeholders are just as committed to that vision as Caltrans is. That’s exciting!

We’re building strong institutional partnerships and really beginning to be able to rely on one another. Metro has been a great partner, the staff at District 7 has engaged to further the pilot and program, taking actions that they didn’t have to take, and PATH has been wonderful in connecting all the little details together, not to mention research. The cities and county have also been actively involved and that helps the whole team. This is a comprehensive pilot and program and everyone is working hard to make it successful. So I want to thank all of the stakeholders. We are making a huge difference by leading the way!

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extension are far-reaching. In 2010, the Los Angeles Economic Development Corporation released a report concluding that during construction alone, the Pasadena to Azusa Extension would generate nearly \$1 billion of business output, \$40 million in tax revenue, and 7,000 jobs. At the Duarte/City of Hope station dedication, Duarte Mayor Tzeitel Paras-Caracci welcomed attendees saying, “The Gold Line has provided the city the opportunity to re-envision this area of Duarte with new housing, office space and even the city’s first hotel. All within walking distance to light rail and therefore within walking distance to all of Los Angeles County.” Duarte is not the only city looking to re-envision their community. Monrovia is developing a 50-acre transit village around their station, and Arcadia funded a transit plaza at its station designed to be the transit hub for their city. Additionally, Arcadia was awarded over \$2 million in Metro grants for both bicycle and pedestrian improvements extending out from the station to other important pedestrian and bicycle facilities in the city and the region.

While local residents and the traveling public will have more accessibility and traveling options, an additional layer of complexity will be introduced to the operators of the corridor. On the local level, coordination with Metro Rail and local operators will need to be increased, and standard operations and maintenance will need to be optimized. The partnerships developing through the CC Pilot will only help to make coordination of the Gold Line extension that much easier.

Increased communication between local operators has already started, and stakeholders have long shared a common goal to maximize the efficiency and safety of the corridor. Measure R and the numerous rail service extensions and expansions reiterate that Metro and the residents of LA County also share this goal: an efficient, accessible, multi-modal transportation system.

Reinland Jones, Transportation Planning Manager for LA Metro, emphasizes the agency’s commitment to providing excellent and comprehensive service to patrons saying, “With the expansion of our light rail and rail service through the Crenshaw/LAX project, the Purple Line extension, the Regional Connector, and the Gold Line extension, Metro is connecting the region together with multiple modes of transportation to enable a multi-modal transportation network. Concurrently, Metro has adopted sustainability and Complete Streets policies and is currently developing an Active Transportation Strategic Plan. The combination of these efforts by Metro, and the efforts from the Connected Corridors Pilot, demonstrates the ambition of these agencies to tackle the complex congestion challenges facing this region.”

Congratulations to Metro and the Gold Line Construction Authority for completing this major milestone!

Special thanks to Reinland Jones for his assistance with this article.



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Center sprang into action. “The TMC staff adjusted the green times at certain intersections in the predominant flow of traffic, especially heading towards the Rose Bowl, to facilitate the added detoured traffic on city arterial streets,” says Bahman Janka, Transportation Administrator for Pasadena.

The phone call and subsequent changes made by the cities is a victory for the entire Connected Corridors team. News outlets that evening reported on the game and the traffic incident, but no reports of major delays or fans missing the game, as had occurred in previous years due to unforeseen incidents. “We believe the phone call was extremely helpful, and it was proactive in the sense that traffic engineering staff were able to modify signal timing changes well in advance of major gridlocks on city streets and were able to better address the delay caused by detoured traffic,” adds Bahman.

Furthermore, this small change shows the broader implications of the I-210 Pilot: coordinated communications resulting in improved mobility. “Relationships are 80% of implementing a successful Pilot; the other 20% is technical,” says Sam. Regular stakeholder meetings as a part of the CC Pilot have been essential to building and maintaining interagency relationships, especially between the cities and Caltrans. Once deployed, the Decision Support System (DSS) will make coordinated efforts seamless as predetermined response plans can go live with minimal human intervention required. TMC staff will be provided real-time information, giving all stakeholders access to the most current information and the ability to respond to incidents more efficiently. In time, agency coordination such as that which occurred on July 21st will be the new norm for the I-210 corridor and a model for other agencies throughout the state.

Contacts

If you have questions about the status of the I-210 Pilot or any of the information discussed in this newsletter, please do not hesitate to contact us.

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About

Connected Corridors is a collaborative effort to research, develop, test, and deploy a framework for corridor transportation system management in California. Our aim is to fundamentally change the way the state manages its transportation challenges for years to come. Starting with a pilot on Interstate 210 in the San Gabriel Valley, the Connected Corridors program will expand to multiple corridors throughout California over the next ten years. As an Integrated Corridor Management (ICM) program, Connected Corridors looks at the entire multi-modal transportation network and all opportunities to move people and goods in the most efficient manner possible.

CONNECTED is a quarterly newsletter with updates and stories about the Connected Corridors program. For more information on the program or the newsletter, please visit our website at connected-corridors.berkeley.edu.