EIT STATUS REPORT TO METRO BOARD

FINAL DRAFT

March 2023 (Construction Committee)

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1 EXECUTIVE SUMMARY

The Early Intervention Team (EIT) was stood up to help provide additional leadership support for LA Metro's capital program. The need for increased cross-collaboration to deliver on the inter-related and complex capital portfolio was highlighted by the critical need to deliver near-term projects and meet the mandate of the 2028 Olympic and Paralympic Games in a time when the capital portfolio was experiencing elevated fluctuations in project cost and delayed delivery timelines. The EIT was created in July 2022 in an effort led by the Deputy Chief Executive Officer (DCEO). Since then, the team has identified an extensive list of potential cost drivers and risks and translated those into a comprehensive set of targeted questions to guide EIT Project Reviews. The team has developed and documented a Project Review Process and conducted three EIT Project Reviews.

The EIT has focused its attention on the early project lifecycle phases where it has the greatest opportunity to influence the project outcomes and where a cross-functional leadership team is best positioned to create and pressure test approaches and alternatives to drive increased value. The EIT has identified six intervention points for EIT Project Reviews.

During the project Initiation phase, the team has

- **EIT 0: Initial Briefing** to create an executive leadership team, assess the potential project solutions to deliver on the intended project benefits, and to set and agree to project Key Performance Indicators (KPIs) and where the EIT can support.

In the Planning phase, there are three EIT Project Reviews:

- **EIT 1 (Pre-Draft Environmental)**: Key checkpoint to confirm a reasonable number of project alternatives are considered and ensure robust stakeholder engagement to pressure test project alternative outcomes
- **EIT 2 (Pre-Final Environmental)**: confirm refined project scope, schedule, and cost for Locally Preferred Alternative (LPA), iterate and syndicate list of identified project risks, and identify actions to advance project delivery
- **EIT 3 (Pre-transition to Engineering)**: Monitor project risks and mitigation strategies, ensure smooth transition to engineering phase and, inform viability of project delivery methods

During the Engineering phase, there are two EIT Project Reviews:

- **EIT 4 (Pre-Final Delivery Method Selection)**: support the creation of a well-informed final delivery method recommendation and drive continued internal and external stakeholder engagement
- **EIT 5 (Pre-Request for Proposal/Invitation for Bids Release)**: confirm scope with original project definition team and assess project readiness for a successful procurement phase

The Procurement phase has the final EIT Project Review:

- **EIT 6 (Pre-Notice to Proceed for a negotiated GMP delivery)**. This project review is at the inflection point where committed capital expenditures begin to outweigh the potential to influence remaining project costs. Specifically for alternative delivery projects utilizing a

pre-construction phase to collaborate between owner, designer and contractor this review confirms a satisfactory project scope and design definition that enables a thorough cost estimate for a successful construction phase. Also, this review ensures clearly defined roles and responsibilities across critical stakeholders to guide decision-making rights and improve collaboration.

To test the EIT Project Review process and targeted questions, the EIT selected three projects that were approaching key project development milestones. The EIT has already supported the identification of potential project improvements, including:

- **East San Fernando Valley (ESFV) Transit Corridor**: Creation of a new value engineering process that is tailored to the Progressive Design Build delivery method.
- **East Side Transit Corridor Phase 2 (ESP2)**: Increased understanding on the complexity of the construction, operations, and engineering associated with the project being an extension of an existing system (e.g., phasing of work, customer experience component, and extension of the fiber network).
- **I-105 Express Lanes**: Early engagement of LA Metro Operations team decision makers to problem solve key project scope elements (e.g., West Santa Ana Branch LRT crossing) and identify innovative design solutions to deliver a successful project outcome and mitigate integration risk with the existing system.

The EIT will continue to expand and adapt to further support LA Metro's capital program by formalizing processes and policies, conducting additional project reviews, and supporting the three projects above as they advance through other points in the lifecycle.

2 BACKGROUND

2.1 CAPITAL PORTFOLIO CONTEXT FOR INITIATION OF EIT

In response to the June 2022 Fiscal Year 2023 (FY23) Annual Program Evaluation (APE) Follow-up Report to the LA Metro Board of Directors (Board), additional direction was received from both Director Sandoval and Director Dupont-Walker, directing the Chief Executive Officer (CEO) to:

- Develop an Early Intervention Team (EIT) comprised of representatives across the agency;
- Create a comprehensive checklist of criteria for successful project delivery, addressing topics such as funding strategy and project delivery method;
- Include metrics to help evaluate the success and progress of cost control efforts; and
- Include a cost estimate range and design level for all projects in Monthly Planning Major Project Status Reports.

Collectively, these directives, motions, and requests from the Board, which followed various Program Management department updates on the opportunities to improve management of the capital program, led to the formation of the EIT.

2.2 FORMATION, ESTABLISHMENT, & STRUCTURE OF EARLY INTERVENTION TEAM

In line with directives received from the Board members, the CEO assigned the Deputy Chief Executive Officer (DCEO), Sharon Gookin, to lead the EIT initiative. The EIT kicked off its effort in July 2022 and has since been meeting at least bimonthly as a cross-departmental team. The EIT cross-departmental team is composed of individuals from the Office of the CEO, Operations, Program Management, Countywide Planning, Office of Management and Budget, Vendor Contract Management, Government Relations, and Customer Experience. Representatives from each of the departments were chosen directly by Department Chiefs and Senior Leadership Team (SLT) members.

Structuring the team in this manner led to the advancement of the effort in a holistic way that:

- **Enhances teamwork across the full agency** in the development of strategies to address the challenges facing the capital delivery program;
- **Recognizes the role each department plays in the successful delivery** of the projects while encouraging cross-departmental collaboration to address the full lifecycle needs of projects;
- **Facilitates a framework whereby previous and related initiatives** within each department can be validated and expanded to agency-wide initiatives; and
- **Provides consistency and rigor** in the approach for project-based reviews along with a **vehicle for direct engagement** on those reviews.

2.3 OBJECTIVES & PLANNED ACTIONS OF EIT

To kick off the EIT initiative, the team identified and agreed upon overall objectives and selected planned actions that would guide the team's work. These objectives are in line with the Board directive related to the formation of the EIT. Overarching objectives of the EIT initiative include:

- Improving the successful delivery of the capital program, with a focus on cost containment strategies and inter-departmental collaboration objectives;
- Considering and complementing existing agency programs and procedures; and
- Advancing an update of project forecasts, with consideration of full-lifecycle costs, in a manner that will enable the CEO and the Board to assess and address the agency's ability to continue delivery of the planned capital projects with existing available resources.

The flowing EIT actions have been established in previous updates to the Board and are currently underway:

- **Assess primary cost drivers** and corresponding mitigation actions that need to be considered for successful project delivery, including decision points related to funding strategies and delivery models;
- **Update project cost estimates**, with consideration of significant external market drivers, for use as the basis for future metrics to evaluate the success and progress of agency cost control efforts;
- **Confirm the method for providing estimate ranges,** as appropriate, for major projects in all phases of delivery (planning, design, and construction);
- **Propose processes that support cost control efforts** and indicate which processes effectively build upon previous department-specific approaches, including the adoption and updates of comprehensive checklists within the current stage gate and corresponding readiness review procedures;
- **Conduct project-focused reviews** to align EIT interventions and discussions more quickly with immediate and longer-term project needs; and
- **Identify required resource needs to implement the scope** of recommended EIT processes and procedures.

2.4 SUMMARY OF OCTOBER 2022 BOARD MEETING

During the October Board meeting, the DCEO gave the Board an update on the formation, establishment, and anticipated benefits resulting from the EIT initiative. In addition, the objectives and actions, both ongoing and planned, of the EIT were described. During the presentation, the DCEO discussed how the greatest potential for influencing a project – through scope, cost, schedule, and risk – is in the early project life cycle phases, particularly planning and engineering, and explained the specific reasoning for the selection of certain projects to undergo the first EIT Project Reviews.

The Board was then updated on the work that has been performed by the EIT as of October 2022, including:

- Initial assessment of cost drivers and corresponding mitigation actions for key project lifecycle phases (Planning, Engineering, Construction, Operations);
- EIT meetings conducted to facilitate cross-department discussion and collaboration related to these initial assessments;
- Program Controls process of updating project cost estimates to current market conditions; and
- Initial EIT Project Review conducted for the East San Fernando Valley (ESFV) Transit Corridor.

Lastly, the Board was informed on the EIT's next steps over the coming 3-6 months, including:

- Continue to advance agency processes and procedures that support cost control efforts;
- Follow-up with EIT feedback on the ESFV;
- Perform additional project-focused reviews for other select projects (I-105 Express Lanes and East Side Transit Corridor Phase 2 (ESP2));
- Continue the full update of Measure M capital project cost estimates; and
- Report back to Board on the overall EIT effort.

3 EIT PROJECT REVIEW PROCESS & WORKFLOW

3.1 OVERVIEW LA METRO PROJECT LIFE CYCLE

The LA Metro project life cycle process spans from project initiation through operations. This life cycle can be broken down into six phases; each phase possesses a separate set of critical activities, cost drivers, challenges, risks, and opportunities to create value.

At a high-level, the six project life cycle phases are listed below, along with a sampling of key activities within each phase:

- **Initiation** is focused on identifying project requirements, stakeholders, and potential funding sources
- **Planning** develops project alternatives to meet the identified project objectives through the completion of the environmental approval process. This includes the development of the Locally Preferred Alternative (LPA) and the subsequent environmental approval document
- **Engineering** refines the scope of the selected LPA into an actionable design, including an updated cost and schedule estimate
- **Procurement** advances the selection of the consultant and/or contractor for project execution, given the project scope and chosen delivery method
- **Construction/Integration** delivers the physical asset, including integration testing as appropriate, according to the project's defined scope, schedule, and cost
- **Operations/Activation/Integration** prepares for the acceptance of an operating transportation system into revenue service, as well as continued asset operation

Throughout the six project life cycle phases, the project's scope, cost, schedule, and risk profile can be revised over time as more information and detail become available. Therefore, the project has a continuous need for cost and schedule control throughout its lifecycle and should begin at the earliest phase of project development, project initiation. The potential for positive influence on project outcomes is highest in the earliest phases of project development, particularly during the planning phase as key information is discovered, alternatives are developed, and high-level delivery methods are evaluated. For this reason, the EIT is best positioned early in the project life cycle to ensure LA Metro is creating the foundation for successful project execution across its capital program portfolio. In later phases of the life cycle, the EIT would remain an available forum for consultation to support cross-functional problem-solving if major design changes occur and/or help is needed to monitor progress against important metrics, for example.

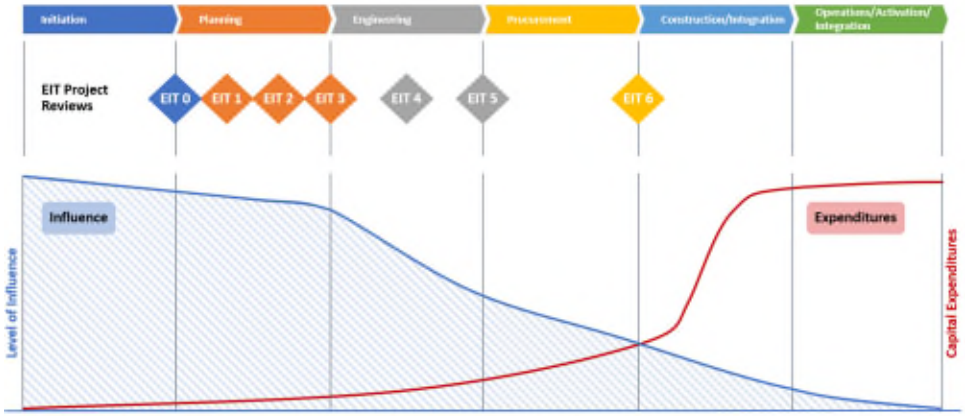

Figure 1. Project Influence Curve with EIT Project Review Timing

3.2 Overview of EIT Project Review Process

In the development of the EIT Project Review Process, each project life cycle phase was assessed to determine where key scope, schedule, cost, and risk determinations are made, as well as the evolution of underlying factors that drive the project team's ability to deliver the intended project outcomes effectively and successfully. Within the project life cycle phases, the EIT members collectively identified a set of junctures when engagement with the cross-departmental EIT members can help to accelerate, protect, and enhance the project outcomes by surfacing and pressure testing assumptions and options. An initial set of intervention points for EIT Project Reviews were identified that span the project life cycle and are concentrated in the early project phases where there is greater ability to influence the project outcomes (Figure 2).

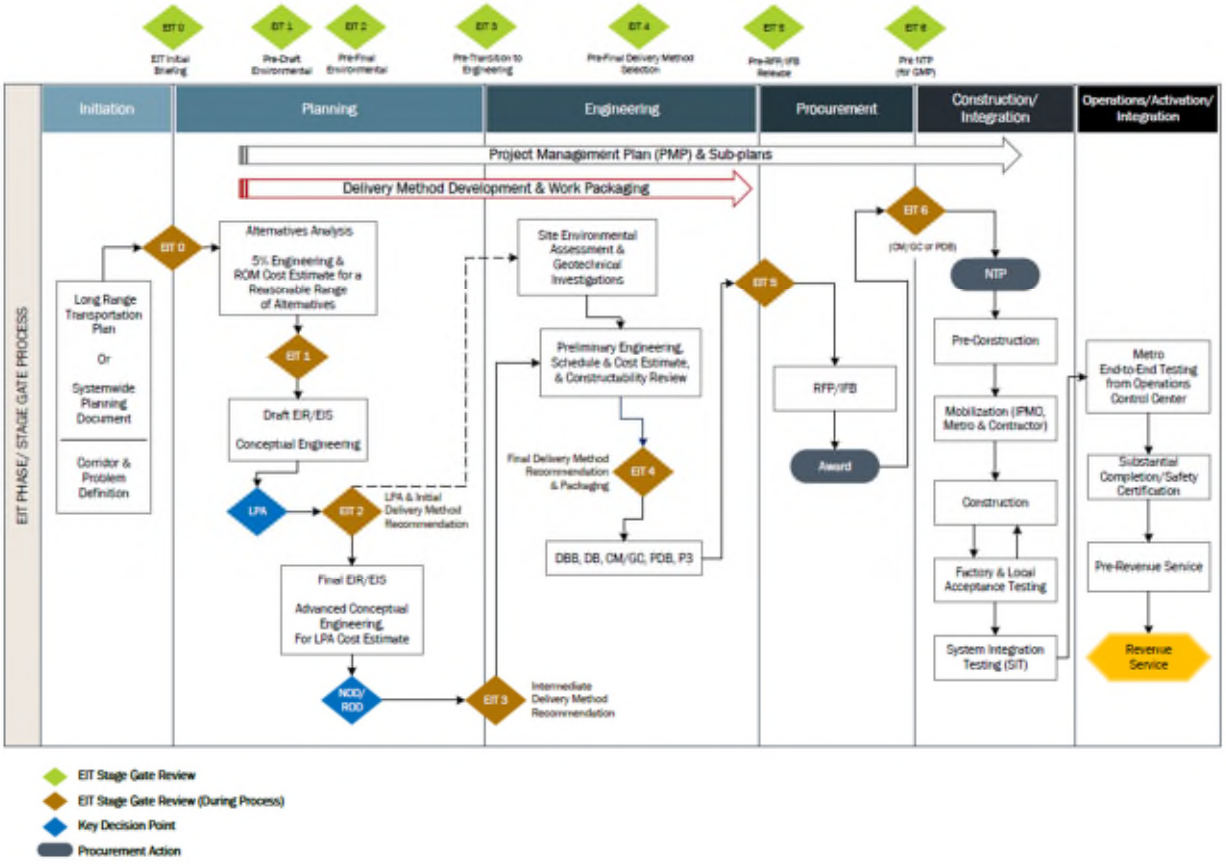

Figure 2. Project Phases & Identified EIT Reviews

To facilitate the EIT Project Review process, a set of targeted questions was developed to foster discussion and understanding of project cost and schedule drivers at each EIT Project Review. These questions are circulated to project teams in advance of the EIT Project Reviews and form the basis for discussion in the review. EIT findings and recommendations are synthesized and shared back to project teams after the review. These findings and recommendations form a component of the next EIT Project Review. Given the importance of the project delivery method decision to future project success, these EIT Project Review questions include focused discussion to support the successful progression of the Delivery Method Process through evaluation, recommendation, and execution. Particularly when assessing alternative delivery methods, the EIT can bring the collective expertise and experience across the agency to inform team discussion on which methods could best enable project success.

The proposed EIT Project Review process and targeted questions encompassed in this status report are being continuously improved and expanded upon based on EIT discussions, industry best practice comparisons, and learnings from initial and planned project reviews – the results of which are outlined in Section 4.

The EIT Project Review process seeks to complement and enhance the existing LA Metro procedures developed and executed by working teams and the project team leadership. The EIT brings an executive and cross-functional viewpoint to critical stages of the project in concert with the ongoing work executed by the project teams. Examples of existing procedures the EIT supports include:

- PC04 - Project Management Plan,
- PM01 – Project Delivery Selection Procedure, and
- PC14 – Program Control: Readiness Review Procedure.

3.3 INITIATION PHASE

3.3.1 Project life cycle phase overview

For the purpose of this document, the Project Delivery Process begins with the Initiation phase. Also referred to as the project's inception phase, it is the critical first step to understanding the need for the project and defining the project's basic requirements, stakeholders, and potential funding sources. Potential project solutions and alternatives are assessed, and if an infrastructure solution is required, the project planning phase can commence. Key output from this phase includes the corridor and problem definition, laying the groundwork for the full project planning effort. A feasibility analysis might occur during this phase to help develop the key outputs and confirm that there are potential project solutions and where those solutions might be constrained.

3.3.2 EIT Project Review #0 (EIT 0): Initial Briefing

To support long-term project success, EIT involvement starts at the transition point from initiation to planning. This early involvement of the EIT intends to set the stage for successful execution of an upcoming project.

Intended EIT 0 outcomes are to:

- Establish a cross-functional executive leadership team from across the project lifecycle to define and agree on intended project benefits from project inception;
- Develop a high-level assessment of potential project solutions to deliver on intended project benefits, informed by a broad set of LA Metro stakeholders; and
- Set and agree to project KPIs and identify points in the project lifecycle where the EIT can support the project team.

Markers of success during this phase could include:

- Defined cross functional team that defines and aligns on intended project benefits;
- Clearly defined and properly constrained corridor with clear end points, and operational performance goals (i.e., passengers per hour at peak load);
- General characteristics of potential solutions, including mode types, potential system interfaces, and feasible configurations; and
- Clear set of KPIs to gauge project success over the course of the project's lifecycle.

This EIT 0 acts to generate support for the project team as they begin advancing alternatives in the planning phase, enabling the project to generate maximum value from inception.

3.4 PLANNING PHASE

3.4.1 Project life cycle phase overview

The next phase of planning involves developing project alternatives to meet the need and objectives identified in the preceding initiation phase. The first step of this phase is developing a reasonable range of alternatives that take into consideration different alignments, configurations,

station locations, and mode alternatives and still meet the intended project outcomes. This is intended to support future phases of the project to demonstrate that all "reasonable" alternatives were considered per California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). To assess the proposed alternatives and select which to move forward to the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) evaluation phase, the project team develops evaluation criteria and engages the community through public meeting(s) while researching and conducting design studies. The Alternatives Analysis reports the results of screening process and recommends a reasonable range of alternatives to evaluate if the efforts move on to the environmental process, the Draft EIR.

The Draft EIR/EIS is developed to analyze each alternative' specific impacts on the environment and community and develop mitigation measures that could be implemented to address those impacts. During the scoping period, the alternatives are presented to the public for input. After the environmental analysis is complete and the Draft EIR has been circulated and public input received, the LPA can be selected. An LPA is selected to advance one main alternative through advanced conceptual engineering, and initial cost estimating, prior to handover to project management.

In this phase, project teams are already considering which delivery methods could be more suitable for each alternative and creating initial recommendations, in support of future Board decision making.

Maximum value is created in the Planning phase by:

- Considering the full range of alternatives and fully understanding their potential order of magnitude for scope, cost, and schedule, particularly considering integration with exiting assets;
- Ensuring alternatives' scope is aligned to consumer needs and project intended outcomes;
- Building well-developed feasibility studies, leading to correct material take-offs (MTO) / bill of materials (BOM) and accurate budget allocation and schedule duration;
- Identifying all key stakeholder and integrating their respective requirements;
- Setting up clear governance structures and KPIs to track cost, schedule, risk, and stakeholder collaboration across the project lifecycle; and
- Assessing potential delivery methods and contracting arrangements for all alternatives, in service to end-to-end value creation.

There are several key touchpoints with the Board in this phase, including decision points to 1) review and release funds for Alternatives Analysis initiation, 2) select the LPA, and 3) approve fund release and progression to the Engineering phase.

With this in mind, EIT has identified three initial intervention points where it can enhance project value and support successful project outcomes in the Planning phase.

3.4.2 EIT Project Review #1 (EIT 1): Pre-Draft Environmental

EIT 1 was developed to ensure clear project governance and sufficient project alternatives are reviewed. This early Project Review is positioned to ensure the initial trajectory of the project is on a successful path, supporting the identification of alternatives and understanding the initial order of magnitude of project scope, schedule, and costs. Alternatives are developed in support

of project needs and environmental considerations, and the EIT aims to ensure the potential magnitude of each alternative is understood.

Intended EIT 1 outcomes are to:

- Confirm a compelling, feasible set of project alternatives to consider, given NEPA/CEQA requirements, project magnitude, potential delivery methods, and the integration with existing infrastructure and communities;
- Test project alternatives against intended project benefits by ensuring alternatives meet project needs and objectives, have no non-value-added cost elements, and scope is well-defined and controllable (measurable and assignable); and
- Ensure robust stakeholder engagement (particularly with relevant external third parties, Construction, and Operations) to pressure test project alternative outcomes and likely impact on project benefits.

Markers of success during this phase could include:

- Objective set of measures to gauge intended project benefits, inform project alternative development, and guide project selection:
    - High level quantified project impacts and benefits by relevant demographic or asset,
    - Rough order of magnitude (ROM) cost and schedule developed for each alternative,
    - Consideration of potential delivery methods for each alternative,
    - High level estimation for construction feasibility,
    - Assessment on impact of current operations / asset base,
- Execution of any needed memorandums of understanding (MOUs).

Positioning of EIT 1 after alternative development and prior to LPA selection allows the EIT to provide feedback and encourage refinement of alternatives under consideration or introduction of a new alternative, if needed.

Following EIT 1, significant work is done by project teams to advance the understanding of each alternative, continue engagement with the full suite of stakeholders, and inform the decision of an LPA. Once the LPA has been decided, there is another opportunity for EIT to enhance project value, support scope development and cost refinement, and enable further refinement of delivery method options.

3.4.3 EIT Project Review #2 (EIT 2): Pre-Final Environmental

After LPA selection, EIT 2 aims to engage project teams to support in the development of a robust LPA scope, schedule, cost estimate and risk plan. The EIT seeks to understand and help identify actions that can advance the project delivery and reduce costs, while ensuring the project team is considering a comprehensive list of value and cost drivers. In the case additional design options were identified in LPA selection, the EIT can aid the team in evaluation of associated customer, cost, schedule, and risk impact.

Intended EIT 2 outcomes are to:

- Refine project scope, schedule, and cost for LPA: As a project advances through the phases, EIT continues to confirm there is adequate advancement and specificity of project scope, schedule, and costs, as well as documentation of potential project risks;
- Iterate and syndicate list of project risks and mitigation strategies: ensure all key project risks have been identified and concrete and feasible mitigation strategies are being considered across each;
- Identify actions to advance project delivery to minimize cost and ensure on-time delivery; and
- Inform initial project delivery recommendation: leverage existing agency and peer learnings to support development of first set of potential delivery methods to consider.

Markers of success during this phase could include:

- Refined preliminary cost estimate and staffing plan for LPA, based on deeper understanding of project scope;
- Plan for tracking KPIs progression against initial estimates and established performance objectives;
- Thorough list of project acceleration activities to unlock long term schedule and cost savings; and
- Draft list of benefits and challenges identified for each delivery model recommended.

3.4.4 EIT Project Review #3 (EIT 3): Pre-transition to Engineering

Following the finalization of environmental studies and conceptual development per approval of the project and Final EIR, the project is intended to transition to the Engineering phase. Value is elevated and protected though seamless handover from Planning to Engineering project team, which EIT 3 aims to facilitate.

Intended EIT 3 outcomes are to:

- Monitor project risks and mitigation strategies: confirm risks identified in earlier phases are being tracked and adjusted on an as-needed basis, given project progress;
- Ensure smooth project handoff to Engineering team through best practice knowledge transfer across teams; and
- Inform viability of project delivery methods being considered, given additional information.

Markers of success during this phase could include:

- Clearly understood scope communicated to project management team;
- Refined cost estimates to support forward-looking cost controls through the Engineering phase; and
- Refined list of pros and cons identified for all potential project delivery methods.

EIT 3 aims to be a launching point for a streamlined Engineering phase, with clearly defined scope, cost and schedule targets, well-defined risks and mitigations, and a clear path to optimal delivery method selection

3.5 ENGINEERING PHASE

3.5.1 Project life cycle phase overview

The Engineering phase can kick off once alternatives have been evaluated and an LPA has been selected. The first step in the Engineering phase includes the site environmental assessment and geotechnical investigations. This work happens parallel to the finalization of the EIR/EIS and advanced conceptual engineering in the Planning phase. Once that is completed, the Planning team hands off the project to the Engineering team to move forward with preliminary engineering, schedule and cost estimate, and constructability review.

With this work completed, the team can perform a more complete risk assessment which is intended to determine if the risks for the project have been identified and that the mitigation process has commenced through the project development process. At this stage, market and construction risks are reviewed as they may influence the decision on the project delivery method. The adequacy of schedule and cost contingencies and specific plans to mitigate the remaining project risks are evaluated. The analysis determines if the project delivery method, schedule, and cost estimate reflect an effective allocation of risks to the parties with the best capability to control each risk and a final delivery method is recommended to the Board for endorsement and final selection.

Maximum value is created in the Engineering phase by:

- Evaluating and executing activities identified in the Planning phase that can begin early (e.g., utility investigation, Master Cooperative Agreement's (MCAs), etc.) to accelerate project timeline and help reduce costs;
- Ensuring timely communication, collaboration, and adequate syndication with internal and external stakeholders throughout the Engineering phase to reduce late-stage scope revisions;
- Considering full range of delivery methods and understanding their potential impact on project execution in support of the final delivery method recommendation; and
- Advancing engineering sufficiently to enable a robust procurement process, depending on the delivery method selected.

EIT engages in the engineering phase at two key points, 1) in support of the final delivery method selection and 2) in preparation for an effective Request for Proposal ("RFP")/ Invitation for Bid ("IFB") process:

3.5.2 EIT Project Review #4 (EIT 4): Pre-Final Delivery Method Selection

As a project progresses through the development cycle, robust work is done to assess which delivery method unlocks the optimum value for the project. The EIT engages with the project team to ensure design and risk considerations are fleshed-out to enable an informed final recommendation.

Intended EIT 4 outcomes are to:

- Support the creation of a well-informed final delivery method recommendation, given preliminary engineering impact assessment, work packaging and phasing strategies, schedule and cost estimates, and constructability reviews across each delivery method being considered; and

- Drive continued stakeholder engagement with internal and external stakeholders to ensure clear project scope and agreement prior to selection of the delivery method.

Markers of success during this phase could include:

- Analysis of all potential delivery methods to guide final selection;
- Robust scope/risk matrix and mitigation actions being actively tracked; and
- Clear set of internal and external stakeholders engaged.

Following the delivery method recommendation and selection, additional clarifying work is completed by the teams, depending on the chosen delivery method. To ensure a robust and fruitful procurement process, the EIT engages again, prior to RFP.

3.5.3 EIT Project Review #5 (EIT 5): Pre-RFP/IFB Release

EIT 5 is intended to be the final team review prior to moving the project forward to procurement. In this checkpoint, the EIT wants to confirm that information and level of engineering have not deviated from original project definition and support the transition from engineering to procurement to ensure a successful RFP/IFB process.

Intended EIT 5 outcomes are to:

- Confirm scope with the original project definition team; ensure engineering innovations and preliminary engineering presented in RFP/IFB aligns with the original project definition and what is supported from prior environmental and funding project reviews;
- Confidence that the proposed procurement strategy has appropriately allocated the project scope, schedule, and cost risk between Metro and Contractors; and
- Assess project readiness for a successful procurement phase by confirming adequate management and controls are in place and identifying opportunities for improvement.

Markers of success during this phase could include:

- Complete engineering package to enable execution of chosen delivery method;
- Target baseline schedule and cost estimate for comparison with proposal/bid submissions.
- Update of the Project Management Plan and required resourcing to enable procurement and construction; and
- Clear RFP/IFB strategy, with specific assessment criteria, and defined response management plan.

3.6 PROCUREMENT PHASE

3.6.1 Project life cycle phase overview

Selecting the adequate project delivery method is critical to a successful procurement and succeeding Construction phase. Evaluating and understanding project risks, complexities, and unique needs enables the project team to identify if the different delivery methods could be suitable to provide opportunities for cost and schedule efficiencies, risk allocation, and increased owner and contractor collaboration. The Procurement phase is intended to assess and select the optimal contractor(s) to deliver on the project's scope, given the chosen delivery method. The procurement team issues an RFP or IFB, depending on the delivery method selected, that

contains all information necessary to enable prospective contractors to prepare and properly submit competitive proposals for review and award by the Board. Contract award and pre-construction preparation is the key output from this phase. After award, the inflection point between level of influence and commitment for expenditures is reached which means the ability to influence remaining project costs decreases as execution begins in earnest.

EIT's involvement in the Procurement phase is focused on protecting and enabling the value created by the selected delivery method during the following Construction phase. Targeted support is provided to projects with alternative delivery methods that may require further definition, either post-RFQ (as described in EIT 5) or even post-award, and prior to giving notice to proceed with a commitment for a negotiated guaranteed maximum price.

3.6.2 EIT Project Review #6 (EIT 6): Pre-NTP

In the case of alternative delivery methods where engineering is not fully developed prior to award (I.e., Construction Manager/General Contractor, Progressive Design Build), EIT reengages post-award to ensure design has been progressed to enable successful evaluation of innovations, confirm cost and schedule remain on track, and identify risks with more certainty. This is done in support of the Notice to Proceed (NTP) decision point and Guaranteed Maximum Price (GMP).

Intended EIT 6 outcomes are to:

- Satisfactory project design to enable successful Construction phase: Assess the further design development completed after award is suitable to negotiate GMP and advance project into Construction phase;
- Confidence in construction readiness / contractor handover: Scope, schedule, cost, and potential risks identified and confidently controlled by the project team; and
- Define clear roles and responsibilities across critical stakeholders to guide decision-making rights, improve collaboration, and strengthen construction performance management and risk mitigation processes to enable project delivery success.

Markers of success during this phase could include:

- Defined roles, responsibilities, decision-rights, and collaboration methods across key stakeholders;
- Baseline schedule and GMP for delivery are within LOP, including acceptable level of contingency for risks.
- Focused and actionable mitigation plans to manage potential risks; and
- Defined, robust contractor and claims management procedures.

Completion of EIT 6 supports transition from procurement to Construction phase, where the EITs ability to influence the project is minimal, project teams are already starting to capture the value set up early in the project life cycle, and LA Metro has other project control procedures that cover construction and beyond.

3.7 CONSTRUCTION / INTEGRATION PHASE

3.7.1 Project life cycle phase overview

Following successful procurement and contractor engagement, the project enters the Construction phase, where the value generated in earlier project phases is acted on. At this point,

construction management is overseeing contractor progress and project controls is tracking cost, schedule, and risks, in line with the previous defined scope and intended project outcomes. Construction management has a robust set of Project Readiness Reviews and project control procedures that track project schedule and costs and manage risks through the risk matrix and mitigation strategies.

EIT's final formal Project Review occurs in the Procurement phase, prior to the inflection point in the project cost influence curve. However, the EIT team remains available to support and guide ongoing projects at the request of project teams. With the collective history and experience in the early project phases, the EIT is well positioned to aid project teams in case of major changes to project needs during the construction and integration phase.

Feedback from project teams throughout the Construction phase and beyond allows the EIT to integrate and improve the ongoing Project Review Process for projects in earlier phases, as well as confirm that the expected project outcomes have been achieved.

3.8 OPERATIONS / ACTIVATION / INTEGRATION PHASE

3.8.1 Project life cycle phase overview

After satisfactory completion of construction and integration of all components, the Activation phase of a project accepts an operating transportation system in accordance with the pre-determined criteria. Testing and commissioning can then review and test all elements of the system to identify problems prior to revenue service. In support of delivering safe, reliable, and quality service, start-up teams are cross-functional.

Following satisfactory commissioning and start-up, Operations/Activation/Integration is the end user of Metro facilities. This team oversees the Revenue Service Phase once normal system operations commence after the transit capital project has been completed. During the early part of this phase, the construction contractor or supplier will complete all warranty items, consistent with the terms of the construction or equipment/materials supply contracts.

While the EIT's mandate does not extend to normal system operations, the Project Review Process creates a feedback loop where lessons-learned and operation's insight are continually incorporated in the inception, development, and execution of new project development.

4 EIT Status of Pilot Project Reviews Completed & Underway

4.1 Overview of EIT Project Reviews

The EIT team selected three projects to undergo the initial EIT Project Reviews with the intentions of (1) beginning to improve cost and schedule outcomes by providing a forum for meaningful cross-departmental dialogue in advance of approaching key project decision points, and (2) testing and improving the EIT processes to make the EIT more useful for future projects' early interventions. The projects selected for this round of feedback from the EIT include:

- East San Fernando Valley (ESFV) Transit Corridor project,
- East Side Transit Corridor Phase 2 (ESP2), and
- I-105 Express Lanes.

These projects were carefully selected to ensure diversity in EIT's first engagements by including different project types and sizes of project scope. Most importantly, each of the projects selected was within the EIT time window (between EIT 0 and EIT 6) so that intervention from the EIT would have the opportunity to meaningfully impact the project outcomes. The final EIT is prior to the procurement release, which is an inflection point for the ability to influence the direction of the project – after procurement the influence steeply decreases.

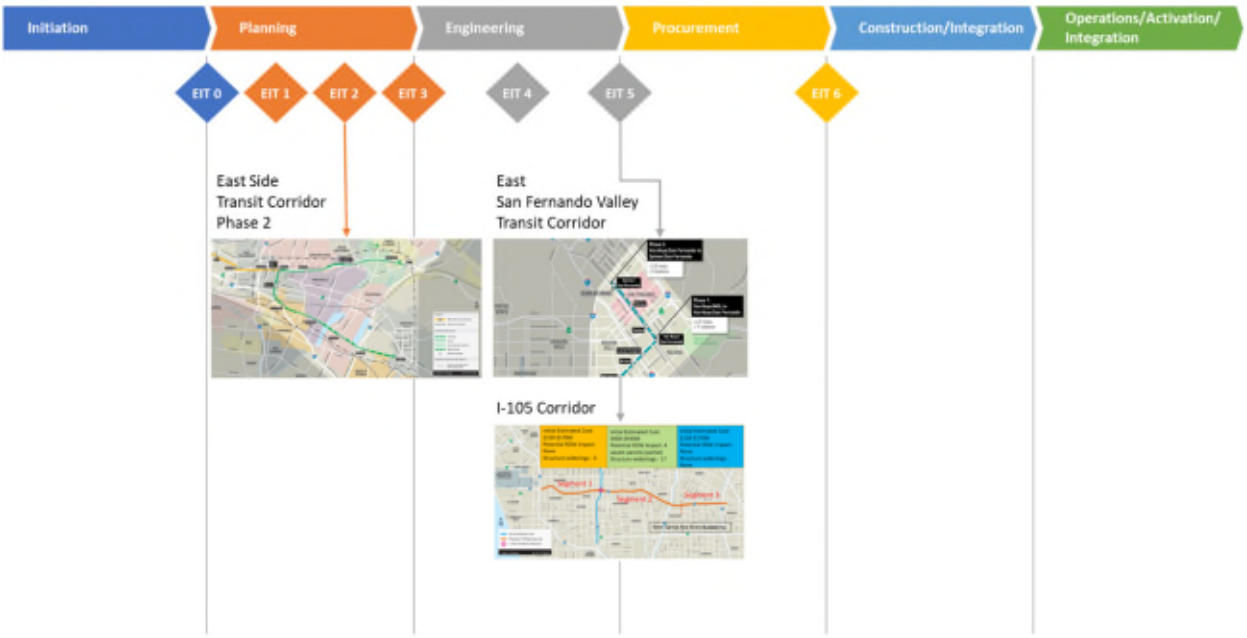

Figure 3. EIT Review Meetings for 3 In-flight Projects

More specifically, each project was selected for the following reasons:

- **ESFV Transit Corridor project** was selected as both the pilot project for EIT and the initial project within EIT 5 because it was experiencing significant growth in its forecasted costs and was approaching the key project award decision point. Therefore, the EIT had an opportunity to confirm project readiness prior to the procurement decision. In addition,

this is the first megaproject that is being delivered using the Progressive Design Build (PDB) alternative delivery method. Thus, the EIT had the opportunity to provide a cross-functional forum to create a better understanding of the alternative delivery method and garner cross-departmental buy-in on the path forward.

- **The East Side Transit Corridor Phase 2** was selected as the second project for an EIT 2 Project Review because it was approaching a different key milestone – the selection of the LPA – and was at an earlier phase in the project development process than the first project. This meant that an EIT Project Review had a greater opportunity to substantially mitigate potential risk by examining the current status and progress of the project. Additionally, the forecasted cost and funding needs were estimated to be higher than the initially available funding. By selecting the project for EIT review, the EIT was able to provide cross-departmental feedback prior to the next funding-related steps, such as the LPA approval.
- **The I-105 Express Lanes project** was specifically selected for an EIT 5 Project Review because it is a highway project and allowed the EIT to test the targeted questions and cost control strategies on a non-transit asset on the same EIT gate as another project and compare the processes. Another important feature was examining this corridor and understanding the risks related to this projects interface with other significant projects like the West Santa Ana Branch and the C-line OCS replacement. Like the ESFV project, the project is also an alternative delivery project; however, it is being delivered using a CM/GC contract, which will be Metro's first CM/GC procurement.

All three projects have already undergone their first EIT Project Review with the full cross-functional EIT team members. For each project, the EIT provided the teams with a list of targeted questions aligned with cost drivers relevant to the project's level of development and invited the project teams to present on the status of their project to the EIT (and therefore, various stakeholders). The project teams prepared a presentation for the EIT discussion and provided written responses to the targeted questions from the EIT. These documents facilitated the dialogue around the key cost drivers and project scoping.

During the EIT Project Review, the project teams walked the EIT through the basis for the selection of the project delivery method, identified project risks, and discussed challenges with select stakeholders. Having senior representatives from all key departments present in the discussion led to cross-departmental engagement on key issues and instant feedback for the project teams.

In addition, the meetings themselves received positive feedback from the project teams, who immediately recognized the benefit of cross-collaboration. Teams mentioned that bringing up issues that the day-to-day project team would normally try to solve on its own received attention during the EIT Project Review from senior leaders, who were able to unlock roadblocks. This accelerated decision-making and delivery timelines of projects.

During the EIT Project reviews, action items were noted, including potential opportunities for improvement (for example, on the ESFV Transit Corridor project, the team identified opportunities related to right-of-way activities and reducing the impact of utilities). Finally, a representative of the EIT reaches out to the leadership of the project team to share their written findings and recommendations as the projects advance to future decision points.

4.2 EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR (EIT INITIAL PILOT PROJECT)

4.2.1 Project Background

The ESFV Transit Corridor project is the largest in LA Metro's near-term project pipeline and is advancing under a PDB contract, which is new to the agency. The project has several significant overlapping third-party stakeholders and a significant increase in projected costs that presented both opportunities and risks.

The ESFV Transit Corridor is a 9.2-mile light rail transit line that will be completed in two phases, the first of which will finish by 2030. It includes a light rail line running in the center of Van Nuys Boulevard and includes 11 new center platform stations. Phase 2, which includes the northern 2.5-mile segment of the LPA along the LA Metro-owned railroad right-of-way, is still under study.

4.2.2 EIT process

When the EIT engaged with the ESFV Transit Corridor project, engineering was reaching final design and RFPs had been initiated, pending contractor response.

During a meeting held on October 5th, the EIT recognized that there was an opportunity for the team to have a focused discussion on the deliverables that would be expected during the EIT 5 check-in. These deliverables included the status of 3rd party agreements, the selection and finalization of a project delivery method, and other significant cost drivers that Metro's engineering team identified as typical areas of issue in this phase.

The next major milestone for the ESFV project will be selecting the Progressive Design-Builder ("contractor") and beginning preconstruction services, where the contractor's input could have the most influence on cost and schedule.

4.2.3 EIT findings and recommendations

During the Project Review, the EIT discovered and learned crucial information about the project by receiving an update from the project team and provided instant feedback to the leadership of the project. Recommendations were on the following topics, some of which had not been thoroughly examined or considered previously:

EIT insights include:	EIT recommendations include:
There are potential utility relocations on the northern end of the project that may cause a significant increase in project cost	Leverage all agency resources to support resolution of utility scope definition
Value Engineering (VE) proposals were expected to come out of the procurement process and the project team identified the need to assess the proposals properly and timely.	Look into the possibility of performing evaluation of deviations VE during blackout phase
With Right-of-way (ROW) resources constrained, ROW acquisitions will be potentially delayed and impact project delivery.	Analyze the option of outsourcing the ROW scope to the PDB contractor
Team highlighted risk associated with evaluating design deviations and value engineering approvals provided current processes and limited Metro resources	Establish working groups, clear workflows, and enforced review times for Metro resources

4.2.4 Potential project improvements and next steps

The above recommendations are anticipated to lead to the following improvements:

- Exploring an alternative solution to the existing ROW acquisition needs by utilizing PDB contractor resources,
- Creation of a Value Engineering process that is optimal for an alternative delivery method
- Early identification and management of project risk by creating opportunities to work with contractors and stakeholders during design development
- Confirm that project outcomes aligned with LA Metro's goals.

The EIT anticipates the next review with the ESFV project team will occur later in 2023. The next EIT review will include an update by the project team on significant project risks and challenges discussed at the first meeting, a discussion about the effectiveness of the alternative delivery processes, and a discussion about concepts proposed by the PDB contractor that could benefit the cost and/or schedule.

4.3 EASTSIDE TRANSIT CORRIDOR PHASE 2

4.3.1 Project Background

Metro is environmentally clearing an extension of the Metro L Line (Gold) further east from its current terminus at Pomona Boulevard and Atlantic Boulevard in East Los Angeles. The new line will follow Atlantic Boulevard to Citadel Outlets, ending at Lambert Road in Whittier.

The project is planned to start construction in 2029 and be open for service in 2035-2037. The CEQA is anticipated to be certified in summer 2023, and NEPA clearance is expected to be completed by 2025.

4.3.2 EIT process

ESP2 was the EIT's second project review and was held on October 25th, 2022. ESP2 presented an opportunity to focus on a project earlier in its project lifecycle than the ESFV project and discuss topics impactful to a project still in the Planning phase with the team preparing for LPA approval.

Top concerns for a project preparing for LPA approval include: scope definition where project teams would want to have a level of design appropriate at this point in the planning process, teams can demonstrate they have made significant progress and have a path to negotiating agreements with 3rd parties and identification of high risk items on a project risk register.

The opportunity for cross-departmental engagement generated valuable dialogue related to ensuring that the project had the intended benefits. This discussion was largely around interface points with the existing transit system, how to create the least disruption for our current customers, and lifecycle and safety considerations for decisions on key features of the system.

4.3.3 EIT findings and recommendations

During the Project Review, the EIT discovered and learned crucial information about the project by receiving an update from the project team and provided instant feedback to the leadership of

the project. Recommendations were on the following topics, some of which had not been thoroughly examined or considered previously:

EIT insights include:	EIT recommendations include:
Better understanding of how the scope has evolved during the environmental process and potential challenges interfacing with the existing system.	Project team to be mindful of future system needs against existing system capacity, and as design progresses continue working with operations to mitigate unintended scope creep.
The project delivery method and contract packaging are still under consideration and not yet decided	Continue constructability assessment and development of detailed project schedule to facilitate an analysis of appropriate delivery method and packaging strategy for the project.
Operations related considerations flagged during the discussion (e.g., potential use of quad gates to run faster frequencies, connecting old system to new extension system)	Follow up with operations team related to potential operational risks highlighted in the discussion and to validate the current design addresses those risks.

4.3.4 Potential project improvements and next steps

The next steps identified for the Eastside Transit Corridor Phase 2 as they prepared for an LPA included executing agreements to progress the engineering and environmental services to begin NEPA and working with local jurisdictions to finalize Master Cooperative Agreements. These actions are anticipated to lead to the following improvements:

- Increased understanding on the complexity of the construction, operations, and engineering associated with the project being an extension of an existing system. (e.g., phasing of work, customer experience component, and potential extension of the fiber network).
- Discussion with EIT assisted with the direction of the recommended LPA to choose a larger yard that accommodated future growth.
- Creation of greater awareness within the team on what work is needed and future steps so that they can effectively integrate them into technical solutions
- Advancement of initial higher risk work such as geotechnical and utility investigation.
- Development of a detailed project schedule and a constructability assessment to support the project delivery selection

The EIT will bring the project team back for a follow up discussion sometime later in 2023 as the project begins to transition into Preliminary Engineering consistent with EIT 3. The next EIT review will include an update by the project team on significant project risks and challenges discussed from the first meeting.

4.4 I-105 EXPRESS LANES

4.4.1 Project Background

The I-105 Express Lanes project aims to convert one existing HOV lane into a two ExpressLane configuration in each direction. This will require ExpressLane toll equipment, signage, pavement

markings, and partial right-of-way acquisition. From more than four alternatives, this option was selected as the preferred alternative by Caltrans and Metro by evaluating the improved mobility, potential environmental impacts, cost, and community benefit for each alternative.

The I-105 Express Lanes project aims to enhance operations, increase trip reliability, improve traffic flow, and decrease travel times. The initiative will also sustain and proactively manage mobility within the corridor. To allow flexibility in work packaging and delivery timing due to funding availability, the project is separated into three different segments, to be completed in sequence from West (I-405) to East (I-605).

4.4.2 EIT process

The EIT's third project-focused discussion featured the I-105 Express Lanes, which was held January 13th, 2022. This was a great opportunity to focus on a highway project that is at a similar point in its project lifecycle as the transit alternative delivery project (ESFV) while also being delivered using another new alternative delivery method to Metro, CM/GC (also known as CM at Risk). Both parties discussed topics impactful to a project transitioning to Construction from Engineering.

This review correlates to the topics critical to the EIT 5 check-in in the EIT's process flow, where the focus was on a project that has been awarded and is preparing for a negotiated GMP. The top concerns for any project preparing for a GMP and NTP for Construction are topics focused on scope clarification and agreed stakeholder interfaces at this point in the Baseline Schedule and Cost negotiation process. Teams can demonstrate they have made their best efforts to plan for and mitigate all known risks and potential cost drivers with the involvement and concurrence of Metro's departmental leadership.

Although this was largely an EIT 5 review, since it was the first EIT Project Review for the I-105 Express Lanes, it also functioned as the initial EIT Briefing (EIT 0) and included fundamental questions from EIT 1 and 2, which begin to set the parameters for project control (e.g., breakdown of work, organization, project management set up, etc.), as the project had not gone through these previously.

4.4.3 EIT findings and recommendations

During the Project Review, the EIT discovered and learned crucial information about the project by receiving an update from the project team and provided instant feedback to the leadership of the project. Recommendations were on the following topics, some of which elaborate or expand on what had already been considered previously:

EIT insights include:	EIT recommendations include:
Segment 1 has a very tight schedule for achieving Ready to List (RTL) through Caltrans review as it was awarded a $150M SCCO grant that requires requesting an allocation from CTC by June 2023 and issuing a construction by December 2023 • RTL requires ROW clearance; however, the process is being delayed due to	Elevate the ROW issue within Caltrans and Metro leadership for urgency of a mitigating action

Caltrans existing easement issues with LA County at Dominguez Channel	
Rail Operations pointed out that shoring installation/removal for foundation excavations can cause vibrations which may change the track elevation	Confirm track monitoring and shoring requirements with Metro's MOW track group
Rail Operations cautioned any related I-105 construction would have to coordinate closely with C-line OCS Operations and MOW projects	Engage early with interfacing project teams (C-Line Ops and WSAB) to minimize multiple disruptions to a portion of the corridor Synchronize C-Line MOW (OCS replacement) single-tracking with I-105 project schedule to optimize schedule, costs, and operations disruptions
Program Controls cautioned that Caltrans Middle-mile Broadband work may add cost to Metro's Express Lanes project without a supplemental funding source	Metro to work with Caltrans on an equitable resolution for this cost driver
WSAB design interface coordination on the critical path is the foundation elements of the future UPRR overcrossing (re-alignment), which must be 100% designed before UP will approve, but cannot be completed until approximately 12-months after ROD. Therefore, any delay to WSAB ROD will impact the follow-on operations for Segment 3 of I-105 Express Lanes	Engage early with interfacing project teams (C-Line Ops and WSAB) to minimize multiple disruptions to a portion of the corridor WSAB team proceed with design early to meet the Segment 3 schedule. I-105 project to build portions of the WSAB interfacing elements to minimize the impacts
Construction of median barrier and foundations requires operations input, to minimize impacts to C-line operations.	Confirm all the correct Ops personnel are given an opportunity to inform decisions on I-105
Bridge widenings in Segments 1 and 2 require close coordination with several municipality and utility stakeholders, which is a significant potential cost driver	Work with the Designer and Contractor to provide a GIS coordination/collaboration platform for design coordination and permitting discussions with the various municipalities and utility owners, especially as the project approaches phase 2 of the CM/GC contract

4.4.4 Potential project improvements and next steps

The above recommendations are anticipated to lead to the following improvements:

- Early engagement of LA Metro's Operations decision makers to problem solve key project scope elements (e.g., West Santa Ana Branch LRT crossing) and identify innovative design solutions to deliver a successful project outcome and mitigate integration risk with the existing system,
- Implementation of a proactive stakeholder engagement process and early coordination discussions with contractors that could reduce cost and schedule, as well as benefit the success of adjacent projects,

- A more complete construction scope definition with buy-in from all third-party stakeholders, and
- Less rework for third parties and owners of adjacent projects, by involving them earlier in the schedule coordination discussions with Metro's contractor.

The next steps identified for the I-105 project as they prepare for a negotiated work package and guaranteed maximum price (GMP) for phase 2 included setup of their open book estimating process to progress the negotiated scope and GMP to begin construction of the first design segment. The EIT will bring the project team back for a follow up discussion sometime later in 2023 as the project begins to transition into NTP with agreed upon GMP for construction of Segment 1, consistent with EIT 6.

5 NEXT STEPS & PRIORITIES FOR EIT

5.1 VALUE OF EIT TO DATE

To date, EIT has focused on understanding the intervention points across the project lifecycle that enable, protect, and enhance project value. By bringing together a group of senior leaders with diverse experience to provide guidance at impactful moments in project trajectory, the initial EIT Project Reviews have started to move the needle, aiding early identification of project improvement opportunities, and receiving positive feedback from project teams.

Examples of the value to date are:

East San Fernando Valley Transit Corridor:

- Exploring an alternative solution to the existing ROW acquisition needs by utilizing PDB contractor resources,
- Creation of a Value Engineering review process that is optimal for an alternative delivery method
- Early identification and management of project risk by creating opportunities to work with contractors and stakeholders during design development

Eastside Transit Corridor Phase 2:

- Increased understanding on the complexity of the construction, operations, and engineering associated with the project being an extension of an existing system. (e.g., phasing of work, customer experience component, and potential extension of the fiber network).
- Discussion with EIT assisted with the direction of the recommended LPA to choose a larger yard that accommodated future growth.
- Creation of greater awareness within the team on what work is needed and future steps so that they can effectively integrate them into technical solutions

I-105 Express Lanes:

- Early engagement of LA Metro's Operations decision makers to problem solve key project scope elements (e.g., West Santa Ana Branch crossing) and identify innovative design solutions to deliver a successful project outcome and mitigate integration risk with the existing system,
- Implementation of a proactive stakeholder engagement process and early coordination discussions with contractors
- A more complete construction scope definition with buy-in from all third-party stakeholders, and
- Less rework for third parties and owners of adjacent projects, by involving them earlier in the schedule coordination discussions with Metro's contractor.

EIT will continue to build on the momentum generated by this initial phase of work with a set of near-term and forward-looking priorities.

5.2 NEAR-TERM PRIORITIES: EIT PLANNED ASSESSMENTS & KPI INTEGRATION

Given the early success of initial Project Reviews, EIT plans to host one project-focused review per month, focused on projects nearing EIT intervention points. Reviews planned for 2023 include:

- North Hollywood to Pasadena BRT,
- C-line Expansion to Torrance,
- LA River bike path,
- Sepulveda Transit Corridor, and
- West Santa Ana Branch.

Future Project Reviews will continue to build on lessons learned from ongoing projects and prior EIT interventions to improve processes with the intention of realizing improved project outcomes. Key Performance Indicators (KPIs) to qualitatively and quantitatively measure and track project outcomes will be introduced in the forthcoming reviews. These metrics will come into play following the ongoing re-baselining activities and enable the EIT and project teams to monitor the effectiveness of Metro's cost containment policies, processes, and procedures.

As the EIT Project Review process and KPIs evolve to better shepherd major projects through critical transition points, the EIT will remain in harmony with existing Metro guidance and procedural documents.

5.3 FORWARD-LOOKING PRIORITIES: CAPITAL PROGRAM

EIT interventions are intended and designed to support project development from the earliest phases. Following the successful initial deployment on in-flight projects, EIT is evaluating how to best provide targeted support to LA Metro's capital program priorities, including Metro's Mobility Concept Plan for meeting the travel demands anticipated from the 2028 Olympic and Paralympic Games, the Measure R and Measure M Expenditure Plans, and the Short- and Long-Range Transportation Plans

The collective effort of the EIT is intended to drive cost and schedule fluctuation stability and improve forecast of LA Metro's Capital Program in support of the successful delivery of LA Metro's capital projects to provide transformative infrastructure to our region and ensure responsible stewardship of taxpayer dollars. The EIT will continue to support the development of a realistic, forward-looking capital portfolio that is well positioned to deliver on projects in service to LA County constituents and riders.