

**STAFF REPORT FOR CALENDAR ITEM NO.: 8  
FOR THE MEETING OF: June 14, 2012**

**TRANSBAY JOINT POWERS AUTHORITY**

**BRIEF DESCRIPTION:**

Resolution approving, with conditions, a Memorandum of Understanding between the TJPA and the California High-Speed Rail Authority, the Metropolitan Transportation Commission, and six other local and regional entities to establish a funding framework for a high-speed rail early investment strategy for a blended system in the Peninsula corridor.

**SUMMARY:**

In order to facilitate the early delivery of the necessary improvements to the Peninsula corridor to allow for high-speed rail and Caltrain operations, the TJPA, along with the Metropolitan Transportation Commission (MTC), the Mayor's Office, the California High-Speed Rail Authority (CHSRA) and five other local and regional entities, have developed a memorandum of understanding (MOU) to establish a funding framework for the blended system's development. The MOU provides that the parties will work to fully fund all of the projects identified as priorities in the MOU, including the Downtown Rail Extension Project (DTX).

MTC approved the MOU on March 28, 2012, the CHSRA Board of Directors approved on April 12, 2012, the San Francisco County Transportation Authority approved on April 24, 2012, the City and County of San Francisco approved on April 24, 2012, the Peninsula Corridor Joint Powers Board approved on May 3, 2012, the San Mateo County Transportation Authority approved on May 3, 2012, and the Santa Clara Valley Transportation Authority (VTA) approved on May 3, 2012.

**REPORT:**

As part of the Transbay Program, the TJPA will design, build, own, and operate a new Transbay Transit Center at First and Mission Streets (Transit Center), including design and construction of the DTX to accommodate Caltrain commuter rail and high-speed rail. The CHSRA is the state entity responsible for planning, constructing and operating a high-speed train system serving California's major metropolitan areas.

On November 4, 2008, the voters of California approved Proposition 1A, a state general obligation bond measure to provide a portion of the costs of construction of a high-speed train system that connects the State's major population centers. Prop. 1A states that the CHSRA shall initiate construction of a high-speed train project that connects the San Francisco Transbay Terminal to Los Angeles Union Station and Anaheim.

The CHSRA's Program EIR/EIS for the Bay Area to Central Valley portion of the high-speed rail system identifies the Transbay Transit Center as the preferred San Francisco terminus for the

high-speed rail system. The Transbay Transit Center is currently under construction and the TJPA is actively engaged in Preliminary Engineering Design for the DTX.

On April 12, 2012, the California High-Speed Rail Authority (CHSRA) Board approved a revised 2012 Business Plan that proposes the development of a blended high-speed rail system by coordinating high-speed rail construction and operations with existing passenger rail systems, principally Caltrain on the San Francisco Peninsula and Metrolink in Southern California. The blended system will remain substantially within the existing Caltrain right-of-way and will accommodate future high-speed rail and modernized Caltrain service along the Peninsula corridor by primarily utilizing the existing track configuration on the Peninsula.

The MOU, found in Attachment 1, commits the parties to support and pursue implementation of the blended high-speed rail system in the Peninsula. The MOU parties agree to describe, identify and work to fully fund an Inter-related Program of Projects for the Peninsula corridor that includes:

- Extension of rail service to the new Transbay Transit Center (the DTX),
- Electrification of rail service (including new electric rolling stock) along the corridor,
- Deployment of an Advance Signal System,
- New high-speed rail stations at Diridon Station in San Jose and in Millbrae, and
- Core Capacity project to upgrade stations, tunnels, bridges, tracks, and to construct selected grade separations.

The MOU establishes an Initial Investment Strategy to fund the Advance Signal System and Electrification projects because these projects are essential, system-wide improvements that will yield early benefits for the public and provide the groundwork for future construction. Electrification of the Peninsula corridor is a long-standing regional priority having been identified in MTC's 2001 Resolution 3434 as a regional priority for transit expansion and in the Regional Rail Plan. Caltrain electrification is also identified as a priority project in the Prop K Expenditure Plan for San Francisco's half-cent sales tax as well as in the transportation sales tax expenditure plans of Santa Clara and San Mateo counties.

The MOU includes adoption of a Funding Plan, found in Attachment 2, for the Electrification and Advance Signal System projects as part of the Initial Investment Strategy. The Funding Plan includes \$706 million of Proposition 1A bond funds and a \$60 million contribution from each of the three Peninsula Joint Powers Board member counties, including San Francisco. The Funding Plan does not include any funds directly from the TJPA. Parties to the MOU will work towards implementation of the Initial Investment Strategy and incorporate the Electrification and Advanced Signal System projects into their respective plans.

Every four years the MTC updates its Regional Transportation Plan to provide guidance for transportation investments within the Bay Area. The Sustainable Communities and Climate Protection Act of 2008 requires that the Regional Transportation Plan include a Sustainable Communities Strategy showing evidence of integrated land use and transportation planning. On May 17, 2012, the MTC approved a draft Regional Transportation Plan/Sustainable Communities Strategy, known as Plan Bay Area, that designates the DTX as a regional priority

for \$650 million in New Starts funds. The MTC expects to approve the Final Plan Bay Area in April of 2013 after environmental review is complete.

Staff recommends execution of the MOU contingent upon MTC's continued support for funding the DTX, specifically, upon MTC designating the DTX as a regional priority for not less than \$650 million in New Starts funds in the Final Plan Bay Area. SFCTA's approval of the MOU was also contingent upon the MTC's support for funding the DTX.

**RECOMMENDATION:**

The Staff recommends that the Board approve, with conditions, the Memorandum of Understanding between the Transbay Joint Powers Authority, the California High-Speed Rail Authority, the Metropolitan Transportation Commission, and six other local and regional entities regarding establishment of a funding framework for high-speed rail in the Peninsula corridor.

**ENCLOSURES:**

1. Memorandum of Understanding between the Transbay Joint Powers Authority, the California High-Speed Rail Authority, the Metropolitan Transportation Commission, and six other local and regional entities regarding establishment of a funding framework for high-speed rail in the Peninsula corridor
2. Proposed funding plan for the Initial Investment Strategy described in the MOU
3. Project fact sheets for Electrification and Advanced Signal System Projects
4. Resolution

**TRANSBAY JOINT POWERS AUTHORITY  
BOARD OF DIRECTORS**

**Resolution No. \_\_\_\_\_**

WHEREAS, The Transbay Joint Powers Authority (TJPA) is a joint powers agency organized and existing under the laws of the state of California to design, build, own, and operate a new Transbay Transit Center at First and Mission Streets (Transit Center), including the design and construction of the Downtown Rail Extension Project (DTX) to accommodate Caltrain commuter rail and high-speed rail; and

WHEREAS, The California High Speed Rail Authority (CHSRA) is the state entity responsible for planning, constructing and operating a high-speed train system serving California's major metropolitan areas; and

WHEREAS, The CHSRA's Program EIR/EIS for the Bay Area to Central Valley portion of the high-speed rail system identifies the Transbay Transit Center as the preferred San Francisco terminus for the high-speed rail system; and

WHEREAS, In November 2008, California voters approved Proposition 1A, the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, which authorized the State to issue up to \$9.95 billion worth of state general obligation bonds to partially fund the construction of an 800-mile statewide high-speed rail network stretching from San Francisco and Sacramento in the north to Los Angeles, Anaheim, and San Diego in the south; and

WHEREAS, Prop 1A designated the Transbay Transit Center as the northern terminus of high-speed rail; and

WHEREAS, The revised CHSRA Business Plan approved in April 2012 proposes to incrementally develop the high-speed train network utilizing a blended system approach that will coordinate the development and operations of high-speed trains with existing passenger rail systems that improves, enhances and expands the integration of high-speed and regional/local passenger rail systems in the San Francisco Peninsula corridor; and

WHEREAS, This blended approach requires a series of incremental investments in the Peninsula corridor to prepare for integrated service and operations and the CHSRA recognizes the need for a collaborative effort with regional and local agencies to identify early investment projects along existing rail corridors that improve service, safety and efficiency, as well as creates linkages between high-speed trains and local passenger train service; and

WHEREAS, The blended system will remain substantially within the existing Caltrain right-of-way and will accommodate future high-speed rail and modernized Caltrain service along the Peninsula corridor by primarily utilizing the existing track configuration on the Peninsula; and

WHEREAS, The TJPA, CHSRA, Metropolitan Transportation Commission (MTC), the San Francisco County Transportation Authority, the City and County of San Francisco, the Peninsula Corridor Joint Powers Board, the San Mateo County Transportation Authority, the Santa Clara Valley Transportation Authority and the City of San Jose (MOU parties) worked together to develop the Memorandum of Understanding regarding a High Speed Rail Early Investment Strategy For a Blended System in the San Francisco To San Jose Segment Known As the Peninsula Corridor of the Statewide High-Speed Rail System (MOU); and

WHEREAS, The MOU parties agree to generally describe, identify and work to fully fund an Inter-related Program of Projects, which includes the Downtown Extension to the Transbay Transit Center, Corridor Electrification Infrastructure Project, Advanced Signal System (also known as Positive Train Control), new high-speed stations at San Jose Diridon Station and a Millbrae BART/Caltrain Station with a connection to San Francisco International Airport, and a Core Capacity project of needed upgrades to stations, tunnels, bridges, potential passing tracks and other track modifications and rail crossing improvements including improvements and selected grade separations required to accommodate the mixed traffic capacity requirements of high-speed rail service and commuter services; and

WHEREAS, The MOU parties recognize that of the set of Inter-related Program of Projects, the Advance Signal System and Electrification projects are essential, systemwide improvements that will yield early benefits for the public and provide the groundwork for future construction and thus an Initial Investment Strategy for these projects is needed; and

WHEREAS, The MOU does not constitute approval of a project by the TJPA for purposes of the California Environmental Quality Act because the TJPA does not commit to implement any of the Inter-related Program of Projects in advance of having conducted environmental review; and

WHEREAS, The MTC has approved a draft Regional Transportation Plan/Sustainable Communities Strategy, Plan Bay Area, that designates the DTX as a regional priority for \$650 million in New Starts funds; and

WHEREAS, The TJPA's support for the MOU is contingent upon MTC's continued support for funding the DTX, specifically, upon MTC designating the DTX as a regional priority for not less than \$650 million in New Starts funds in the Final Plan Bay Area; now, therefore, be it

RESOLVED, That the Executive Director is hereby authorized to execute the MOU and to take such actions necessary to implement the MOU so long as the MTC continues to designate the Downtown Extension as a regional priority for not less than \$650 million in New Starts funds in the Final Plan Bay Area.

I hereby certify that the foregoing resolution was adopted by the Transbay Joint Powers Authority Board of Directors at its meeting of June 14, 2012.

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Secretary, Transbay Joint Powers Authority

## MEMORANDUM OF UNDERSTANDING

### HIGH SPEED RAIL EARLY INVESTMENT STRATEGY FOR A BLENDED SYSTEM IN THE SAN FRANCISCO TO SAN JOSE SEGMENT KNOWN AS THE PENINSULA CORRIDOR OF THE STATEWIDE HIGH-SPEED RAIL SYSTEM

BY AND AMONG THE FOLLOWING PARTIES (PARTIES)

CALIFORNIA HIGH SPEED RAIL AUTHORITY (AUTHORITY)  
METROPOLITAN TRANSPORTATION COMMISSION (MTC)  
PENINSULA CORRIDOR JOINT POWERS BOARD (JPB)  
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY (SFCTA)  
SAN MATEO COUNTY TRANSPORTATION AUTHORITY (SMCTA)  
SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)  
CITY OF SAN JOSE  
CITY AND COUNTY OF SAN FRANCISCO  
TRANSBAY JOINT POWERS AUTHORITY (TJPA)

#### Recitals

**Whereas**, the California High-Speed Rail AUTHORITY (AUTHORITY) is responsible for planning, building and maintaining an 800-mile statewide high-speed rail system and improved mobility through the development of safe, clean, reliable rail technology; and

**Whereas**, the AUTHORITY, in partnership with the Federal Railroad Administration is advancing a California High-Speed Train (HST) network that links the major metropolitan areas of the State of California utilizing corridors into and through Southern, Central and Northern California; and

**Whereas**, the AUTHORITY has responsibility for planning, construction and operation of high-speed passenger train service in California and is exclusively charged with accepting grants, fees and allocations from the state, from political subdivisions of the state and from the federal government, foreign governments, and private sources; and

**Whereas**, the AUTHORITY's 2012 Business Plan proposes to incrementally develop the HST system utilizing a blended system approach that will coordinate the development and operations of HST with existing passenger rail systems, improving, enhancing and expanding the integration of high-speed and regional/local passenger rail systems; and

**Whereas**, this blended approach requires a series of incremental investments in the Peninsula corridor to prepare for integrated service and operations and the AUTHORITY recognizes the need for a collaborative effort with regional and local agencies to identify early investment projects along existing rail corridors that improve service, safety and efficiency, and create linkages between HST and local passenger rail service; and

**Whereas**, a blended system will remain substantially within the existing Caltrain right-of-way and will accommodate future high-speed rail and modernized Caltrain service along the Peninsula corridor by primarily utilizing the existing track configuration on the Peninsula; and

**Whereas**, this MOU is specific to project investments that upgrade existing rail service and prepare for a future high-speed train project that is limited to infrastructure necessary to support a blended system, which will primarily be a two-track system shared by both Caltrain and high-speed rail and will be designed to continue to support existing passenger and freight rail tenants; and

**Whereas**, local transportation improvement projects are required to be included in a Regional Transportation Plan (Plan), and the Metropolitan Transportation Commission, working closely with local agencies is charged with developing the Plan every four years to provide guidance for transportation investments within the San Francisco Bay Area and with development of regional transportation strategies to address the needs of the Bay Area; and

**Whereas**, on December 19, 2001, MTC adopted the Regional Transit Expansion Program of Projects (Resolution 3434) which includes the Transbay Transit Center Phase 2 Downtown Extension and Caltrain Electrification projects as regional priorities for transit expansion; and

**Whereas**, the Sustainable Communities and Climate Protection Act of 2008 (SB 375, Steinberg, Statutes of 2008) requires the Plan to include a Sustainable Communities Strategy (SCS), showing evidence of integrated planning, goals that establish and strengthen the crucial linkages between the economy, land use development and the regional transportation system to improve access to jobs, education, healthcare, and other amenities in ways that improve the overall quality of life in the Bay Area, and the blended system on the Peninsula corridor in the California High-Speed Rail program is consistent with achieving SB 375 goals to reduce greenhouse gas emissions; and

**Whereas**, all PARTIES are involved in the planning, funding, construction and/or operation of heavy and light rail transit, buses, and/or commuter train services in the Peninsula corridor and are considering intermodal service integration, including linkages to the proposed HST service; and

**Whereas**, it is the intent and purpose of this MOU to strengthen the working relationship between the PARTIES to facilitate the development and implementation of projects that will improve local passenger rail service and operations while preparing designated HST corridors for eventual HST operation to achieve region-wide systems integration of rail service in Northern California; and

**Whereas**, local transportation improvement projects are required to be environmentally evaluated according to CEQA and NEPA regulations and where necessary, existing environmental approval covering incremental improvements to the Peninsula corridor will be updated to reflect evolving local and regional conditions and concerns; and

**Whereas**, incremental improvements and the blended system project will be planned, designed and constructed in a way that supports local land use and Transit Oriented Development policies along the Peninsula corridor; and

Now, THEREFORE, it is mutually understood and agreed to by the PARTIES as follows:

To jointly support and pursue the implementation of a statewide high-speed rail system that utilizes a blended system and operational model on the Peninsula corridor and that has its northern terminus at the Transbay Transit Center in San Francisco as specified in law, and its southern limit at Mile Post 51.4 at the Tamien Station in San Jose. The blended system will support and benefit operation of both Caltrain and future high-speed train service.

To jointly recognize a defined set of Inter-related Program of Projects that is consistent with the AUTHORITY's phased implementation plan and with a blended system operation of the corridor and achieves objectives that include but are not limited to system capacity and connectivity for Caltrain, HST and freight; public safety; operational efficiency; effectiveness and connectivity.

To generally describe, identify and work to fully fund an Inter-related Program of Projects known as the Corridor Electrification Infrastructure Project, Advanced Signal System (also known as Positive Train Control), the Downtown Extension to the Transbay Transit Center, which is the Proposition 1A designated northern terminus of high-speed rail, new high-speed stations at San Jose Diridon Station and a Millbrae BART/Caltrain Station with a connection to San Francisco International Airport, and a Core Capacity project of needed upgrades to stations, tunnels, bridges, potential passing tracks and other track modifications and rail crossing improvements including improvements and selected grade separations required to accommodate the mixed traffic capacity requirements of high-speed rail service and commuter services.

To recognize that of the set of Inter-related Program of Projects, the most substantial and tangible early-investment benefits will be realized when two essential projects are identified for an Initial Investment Strategy to secure, at the earliest possible date, the benefits of the blended system for the traveling public and an Initial Investment Strategy is needed to provide the groundwork upon which future construction can more readily progress.

To recognize that the two Inter-related projects for Initial Investment Strategy are the Corridor Electrification Infrastructure Project that includes the needed rolling stock to operate revenue service; and the Advanced Signal System project and to adopt as part of this MOU, the funding plans needed to move as expeditiously as possible toward construction of these two essential projects.

To work toward the implementation of the Initial Investment Strategy to the maximum extent feasible and that the PARTIES shall endeavor to incorporate the Electrification Infrastructure and Advanced Signal System projects into their respective plans and that the AUTHORITY shall reflect this MOU in its Business Plan by December 31, 2012.

That the aforementioned projects will need to be environmentally analyzed and cleared according to CEQA and NEPA guidelines as appropriate, including updating and recirculation of the Caltrain Electrification EA/FEIR completed in 2009.

That the AUTHORITY will endeavor in good faith to secure approval and release of \$600 million of Proposition 1A funds and \$106 million of Proposition 1A "connectivity" funds



consistent with the funding plans contained in this MOU as required to complete at the earliest possible date, the Corridor Electrification Infrastructure and Advanced Signal System projects.

That the AUTHORITY will endeavor in good faith to secure approval of Proposition 1A “connectivity” funds for Bay Area project sponsors consistent with and in accordance with the schedule and project expenditure plan approved and as amended by the California Transportation Commission.

That the AUTHORITY will work with funding partners to assist in seeking and releasing the funds necessary to implement the Electrification Infrastructure Project and Advanced Signal System project. Local agencies may provide local funds, real property, or in-kind resources as matching funds where matching funds are required to qualify for grant funds. PARTIES agree to work together to identify the appropriate amounts and types of local resources that may be used to support the completion of the Electrification Infrastructure Project and the Advanced Signal System Project.

That the AUTHORITY and appropriate PARTIES will coordinate to obtain funding using a mutually agreed-upon strategy. In the event that funding for the program is constrained by statute, recession of existing law, change in funding requirements or eligibility, reduction in funding level or availability, the AUTHORITY and the PARTIES shall take steps to notify each other as needed in a timely manner.

**FUNDING PLAN**

**Program Costs and Proposed Funding  
for  
Peninsula Corridor Projects:  
Electrification and Advance Signal System**

<b>Program Costs</b> <i>(in \$ millions, year of expenditure)</i>	
Advance Signal System / Positive Train Control (PTC)	\$231
Electrification and Electric Multiple Units (EMUs)	\$1,225
<b>Total</b>	<b>\$1,456</b>

<b>Program Funding</b> <i>(in \$ millions)</i>	
<b>Source</b>	<b>Amount</b>
JPB Contributions	\$180
JPB Local - Currently Available	\$11
Caltrain PTC	\$4
<b>Subtotal Local</b>	<b>\$195</b>
Prop 1A Connectivity	\$106
Prop 1A High Speed Rail Authority	\$600
Prop 1B Caltrain	\$24
<b>Subtotal State</b>	<b>\$730</b>
Federal RR Admin. for PTC	\$17
Federal Transit Admin prior/current obligations	\$43
Federal Transit Admin future obligations	\$440
<b>Subtotal Federal</b>	<b>\$500</b>
MTC Bridge Tolls	\$11
BAAQMD Carl Moyer	\$20
<b>Subtotal Regional</b>	<b>\$31</b>
<b>Total</b>	<b>\$1,456</b>

See Next Page for Notes.

Funding Plan Notes:

1. Caltrain Joint Powers Board (JPB) Local Contribution is \$60 million from San Mateo sales tax, \$60 million from VTA sales tax, and \$60 million from San Francisco (\$23 million from sales tax, \$37 million from Regional Transportation Improvement Program (RTIP)/local/other). Each agency's contribution, including Proposition 1A Connectivity funds as outlined in Note 2, is contingent upon the \$60 million each from the other two JPB partners.
2. Prop 1A Connectivity is \$42 million from Caltrain, \$26 million from VTA, and \$38 million from BART (2<sup>nd</sup> priority for BART after receipt of \$150 million for railcars).
3. Prop 1B Caltrain is \$20 million Public Transportation Modernization, Improvement, and Service Enhancement Account (PTMISEA), \$4 million State-Local Partnership Program (SLPP).
4. FTA Prior/Current Obligations is \$16 million for electrification in prior years, \$27 million for EMUs in FY12.
5. FTA Future Obligations is \$315 million for electric multiple units (EMUs), \$125 million from fixed guideway caps. Funds will be programmed in accordance with MTC Transit Capital Priorities process between approximately FY2012-2013 and FY2022-2023.
6. Bridge Tolls is from Regional Measure 1 (RM1) West Bay Rail Reserve.
7. Bay Area Air Quality Management District (BAAQMD) funds to be confirmed.
8. Assumes that all local sources, Prop 1B PTMISEA, all federal sources, and bridge tolls can be used as match to Prop 1A funds, totaling \$726 million in matching funds for \$706 million in Prop 1A funds.
9. Other potential future funding sources could be substituted if secured, including federal Transportation Investment Generating Economic Recovery (TIGER) funds (such as current Caltrain application for \$44 million), State Interregional Transportation Improvement Program (ITIP) funds, and private financing.

PREPARING THE CALTRAIN CORRIDOR  
FOR HIGH-SPEED RAIL:  
ELECTRIFICATION AND  
ADVANCE SIGNAL SYSTEM PROJECTS  
MARCH 2012

# ELECTRIFICATION INFRASTRUCTURE PROJECT

Electrification of the peninsula rail corridor is a necessary investment to support a blended Caltrain and high-speed rail system. In the short-term, electrification will bring more commuter service to our region in a quieter and greener way. For the long-term, electrification prepares the corridor to receive the high-speed rail system, which will provide a one-seat ride from downtown San Francisco to Los Angeles.

## Project Scope

The electrification infrastructure project includes the installation of traction power facilities, poles and an overhead contact system, and the purchase of electric rolling stock to replace the current diesel trains, known as electric multiple units (EMUs). The project would extend for 52 miles from San Francisco to San Jose.

## Short-Term Benefits

Caltrain electrification and use of EMUs will result in the following benefits:

- Faster and more frequent service
- Reduction of air pollutant emissions
- Reduction of noise and vibration



Caltrain EMU Vehicle

## Project Status

In 2009, 35% design and federal environmental clearance were completed. Board certification of the Environmental Assessment /Final Environmental Impact Report (EA/FEIR) to complete the state environmental process has not yet been obtained. If full funding is secured by Summer 2012, the planned project schedule is:

## Project Status and Schedule\*

Phase	Start	Complete
Environmental Clearance **	2012	2013
Final Design & Procurement	2013	2015
Construction & Vehicle Testing	2015	2019

\*Schedule assumes design-bid-build procurement process.

\*\*Update/recirculation of the Caltrain Electrification project EA/FEIR.

# ADVANCE SIGNAL SYSTEM

The advance signal system is needed to support Caltrain and high-speed rail blended services on the peninsula corridor. The system is called Communications Based Overlay Signal System, also known as Positive Train Control (PTC).

## Project Scope

The project serves two purposes. One is to provide enhanced performance attributes to maximize train throughput in the rail corridor. The other is to reduce the risk of train-to-train collisions and prevent trains from exceeding authorized speed limits. The system includes control center upgrades, wayside signals, sensors in the tracks, on-board computers, and connections to global positioning systems. The advance signal system meets a federal mandate to achieve PTC by 2015.

## Project Benefits

The advance signal system will:

- Accommodate blended Caltrain and high-speed trains in the peninsula corridor;
- Increase the safety of the current signal system;
- Enable more frequent and dependable passenger service; and
- Improve grade crossing warning functions.

Additionally, it will enable Caltrain to maintain rail operations during construction, and support faster and more efficient construction schedules in a safer work environment. These capabilities will result in significant project cost savings and minimal service disruptions.

## Project Status

If full funding is secured by Summer 2012, the planned project schedule is:

## Project Phases and Schedule

Phase	Start	Complete
Planning and Preliminary Design*	January 2008	July 2010
Procurement of DB Contractor	August 2010	December 2011
Hardware & Software Engineering	2012	2013
Construction / Installation	2013	2014
System Testing and Integration	2014	2015
Revenue Service		2015

\*Project is exempt from environmental review.

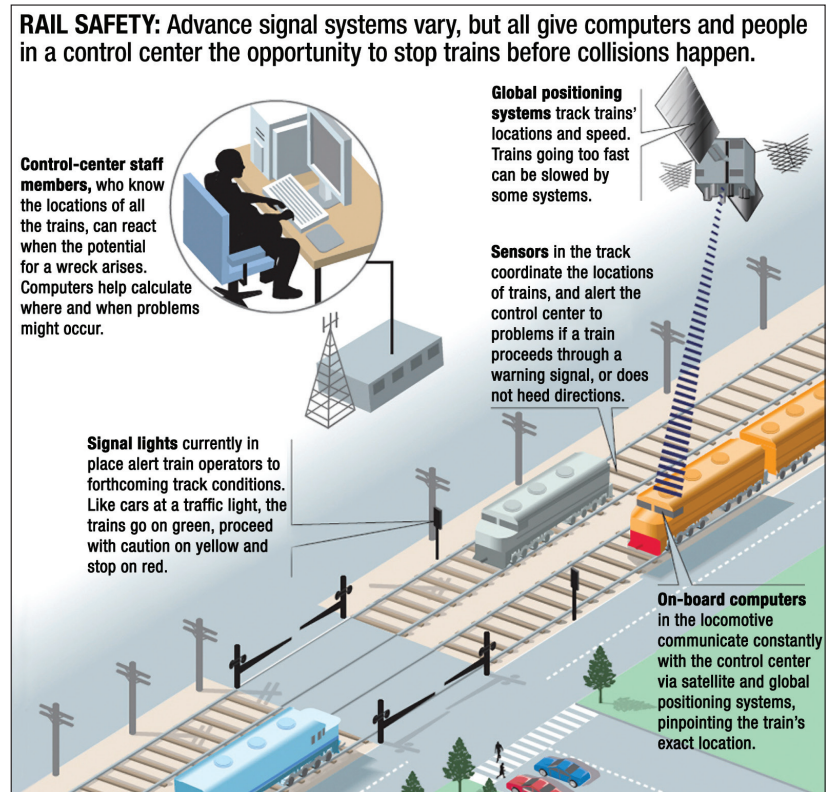


Diagram of how an advance signal system works