THIS STAFF REPORT COVERS CALENDAR ITEM NO.: 8
FOR THE MEETING OF: April 22, 2010

TRANSBAY JOINT POWERS AUTHORITY

BRIEF DESCRIPTION:

Presentation by Fred Clarke of Pelli Clarke Pelli Architects, Inc., on the progress of design of the Transbay Transit Center through the completion of the Design Development.

REPORT ON KEY DESIGN CHARACTERISTICS OF THE TRANSBAY TRANSIT CENTER:

The Transit Center Design Team, headed by PCPA, concluded the Design Development Phase on February 16, 2010. The Design Development submittal is the culmination of the efforts of 24 consultants, including architects, engineers, sustainability consultants, landscape designers and risk and vulnerability experts.

Since we completed the Design Development Phase, the design team has undertaken an extensive cost estimating process and embarked on the Construction Documents Phase to prepare the final design documents to be packaged for bidding by the Construction Manager/General Contractor (CMGC). We are pleased to report that while the 100% Design Development includes all of the design attributes first proposed in the Design Competition plus many other components that will make the Transit Center unique in the United States and the world, we are on budget.

This report describes the significant design features of the Transit Center.

The Transit Center

The Transbay Transit Center Project will create a modern state of the art transit hub connecting nine counties in the Bay Area and the State of California through 12 transit systems: Muni, AC Transit, Greyhound, WestCat, SamTrans, Caltrain, Golden Gate Transit, Bart, Muni Metro, ParaTransit, Amtrak shuttle bus service and the future California High Speed Rail. A future connection to Amtrak's Coast Daylight train line is also possible. In addition, the Transit Center will provide ample accommodation for bicyclists and taxis.

The Transit Center will have a gross area of 1.4 million square feet with three levels above grade, plus its rooftop park, and two levels below grade. It has been designed to be highly accessible at all levels.

The Transit Center has been designed to accommodate all projected passenger traffic for at least 50 years. By 2030, we expect 18,000-20,000 peak hour trips (boardings and

alightings) and a weekday total of 114,000 weekday trips – 33,000 Caltrain, 25,000 AC Transit, 6,500 Muni Treasure Island, 48,000 High Speed Rail, and 1,500 Intercity Bus – to be easily handled by the Transit Center, The Transit Center can also comfortably accommodate an anticipated 50 million passengers by 2065. In accordance with State law, the Transit Center has been designed to allow a future rail connection to the East Bay.

Architecture and Engineering

In addition to serving the region's transportation needs, the Transit Center will be the focal point of a new San Francisco neighborhood and a destination for retail, art, community and cultural activities. Therefore, it must be not only an excellent transit center, but also a friendly building people will want to use or be near. The design team has gone to great lengths to make the Transit Center graceful, luminous, welcoming and safe. Its undulating glass exterior wall, with forms like petals of a flower, reduces the scale of the structure.

The undulations also respond to the structural system of the building. This robust system, comprised of concrete and steel, is central to the Transit Center's performance, particularly in the event of an earthquake. Initially, the Center was designed with a seismic importance factor of 1.25, which is common for public assembly buildings, versus 1.00 for a private office building. After extensive discussion with TJPA, however, the Transit Center is being designed to satisfy more exacting seismic performance objectives. The building will therefore likely exceed the earlier 1.25 criteria. The Center is engineered to be operational within a very short time after a significant earthquake, with no loss of function due to structural damage. In addition, its exterior wall is designed to allow the glass panels to remain intact in the event of significant movement.

The Transit Center's interiors are suffused with natural light. This is accomplished with large skylights, which bring columns of sunlight deep into the interior of the building. The largest of the Light Columns, 4,000 square feet in size, is also the central gesture in the Grand Hall, the Center's primary space. This Light Column will become the orientation device for a majority of the users of the building, much like the clock at Grand Central Terminal in New York City, but with a contemporary architectural expression. Soaring nearly 120 feet in height, the Grand Hall also approaches Grand Central Terminal in scale and dimension.

The exterior wall of the Grand Hall will be comprised of a highly transparent glass and metal system that maximizes openness. Entrances and exits will be clearly marked. Once inside, vertical transportation up to the Bus Desk and Park, as well as down to the Lower Concourse and Rail Platform, will be highly visible and accessible. The floor will be terrazzo, comprised of light, and occasionally bright, colors. The Grand Hall will glow on overcast days and in the evenings.

The Bus Deck level, housing 37 bus bays, will also be an open and luminous space, organized so that users will be in an open, secure and, friendly environment with intuitive wayfinding and orientation. Sunlight will be the largest source of illumination, brought

in through large skylights and smaller fixtures that bring light from the Park. The floor will be multicolored terrazzo, predominately in warm, reflective colors.

Environmental Sustainability

Twelve smaller gardens placed throughout the Park will be keyed to a variety of plant life and environmental conditions, including Australian, Mediterranean, and South African gardens; palm, flower, and grass gardens; and gardens keyed to wetlands and environments typical of the Bay Area. The Park is seen as a significant teaching tool; its environments will be extensively labeled to allow for formal and informal educational opportunities.

The Park is also symbolic of the Transit Center's considerable commitment to environmental quality and sustainability. Several other components of the building's design contribute to its sustainability program. The project is on track for Gold certification under the LEED 2009 rating system.

A massive geothermal heat exchange installation, built into the building's foundation and running its entire length of 4 ½ city blocks, will significantly reduce energy usage. The installation will be one of the largest and most prominent geothermal power plants in the world.

A greywater biological recycling facility will recycle water used in the building. The greywater recycling system is the first of its kind in the United States. It is the first project in San Francisco to reuse stormwater and greywater for toilets. The facility will be located on the Transit Center roof and will have sufficient capacity to service the entire building. The water conservation and reuse system will reduce potable water used for bathrooms, irrigation, and air conditioning by 9.2 million gallons per year, or the equivalent of 19 Olympic-sized swimming pools.

We also propose to save water in the roof Park through the use of native and adapted plant species and high-efficiency irrigation equipment. We expect to reduce current stormwater runoff to city sewers from the existing Transbay Terminal by 70 percent. The above grade public areas of the building will also be naturally ventilated. When interior temperatures need to be regulated, sensors will open or close the vents and modify the flow of air throughout the interior spaces.

The building's annual energy consumption is projected to be up to 25 percent lower than the 2008 Title 24 Energy Efficiency Standards. This reduction is a result of:

- Energy efficient lighting design
- Natural daylighting in the Bus Deck and Grand Hall
- Self shading of the building (roof Park, enclosure and overhangs)
- Low-energy natural ventilation in the Grand Hall
- Premium efficiency motors

Finally, we will select sustainable, durable materials for all areas of the project. We intend to use recycled, local, low-emitting and other low-impact materials to the maximum extent feasible.

The combination of significant geothermal, greywater and ventilation systems and other sustainable strategies within the building and the Park in a great urban, intermodal transit center will symbolize the TJPA's and City's commitment to the environment and set a high standard for sustainability that will serve as a model for the nation and the World.

Rooftop Park

The roof of the Transit Center will be an urban park dense with nature and activities. The Park will serve passengers and residents, workers, shoppers, and students from the new transit-oriented neighborhood. The park will be 5.4 acres in size, 1,400 feet long and 170 feet wide. The walking path around its perimeter will be approximately one half mile long. This would allow an annual 5K race to be conducted in approximately six laps. With over a dozen entry points, it will be highly accessible. In addition, the San Francisco Planning Department supports the idea of future bridge connections to adjacent buildings.

Active and passive uses will be carefully woven into the natural landscape, with features ranging from a music amphitheater for up to 1,000 people, evening film screenings, cafes and a children's playground. Passive uses such as reading, picnicking or simply taking a break for lunch will be encouraged in numerous quiet areas. A 1,000-foot-long fountain whose jets of water will be triggered by the movement of buses on the Bus Desk will be a central feature. Children will be able to race the length of the fountain as buses move below.

NEXT STEPS:

The cost estimating company, Davis Langdon, a member of the PCPA team, has completed its 100% Design Development Phase cost report. Langdon's cost estimate for the project, including the train box, was based on extensive PCPA documentation and research into the current state of the San Francisco construction market. It also examined in detail further potential cost-saving measures. We will incorporate several value engineering suggestions in the Construction Documents going forward.

The Design Team has prepared the first bid package for the buttress, shoring walls, excavation and bracing for the below-grade Train Box. The Construction Documents Phase will continue for the other components of the project. We expect to achieve 100% Construction Documents in approximately one year. The drawings have been organized to allow the below grade and foundation package to precede the other contract documents. Below grade work is a long lead item and must commence as early as possible.