



**Board of Directors Meeting
Ali'i Place, Suite 150
1099 Alakea Street
Honolulu, Hawaii 96813
Thursday, October 23, 2014 10:00 am**

MINUTES

PRESENT:	Donald G. Horner Michael Formby Keslie Hui Ford Fuchigami	William "Buzz" Hong Carrie Okinaga Robert "Bobby" Bunda Damien Kim
ALSO IN ATTENDANCE: (Sign-In Sheet and Staff)	Daniel Grabauskas Brennon Morioka Diane Arakaki Gary Takeuchi Joyce Oliveira Melinda Alonzo Sally Roush Gary Matthews Tom LeBeau	Breene Harimoto Rose Pou Barbara Armentrout Morris Atta Paul Migliorato Lorenzo Garrido Russell Honma Cindy Matsushita Andrea Tantoco
EXCUSED:	Ivan Lui-Kwan	George Atta

I. Call to Order by Chair

HART Board Vice Chair Donald G. Horner called the meeting to order at 10:44 a.m.

II. Public Testimony on All Agenda Items

Mr. Horner called for public testimony.

Councilmember Breene Harimoto provided testimony regarding his impending transition from the Honolulu City Council to the State Senate. He thanked HART Executive

HART Board of Directors Meeting
October 23, 2014

Director and CEO Daniel Grabauskas for his leadership, and stated his intention to continue his involvement with the rail project in the Senate.

Mr. Horner then acknowledged the Mayor's reappointment of Board member William "Buzz" Hong to the HART Board of Directors. He also acknowledged the appointment of Board member Ford Fuchigami as the Director of the City Department of Enterprise Services.

III. Approval of the Minutes of the October 9, 2014 Board of Directors Meeting

Mr. Horner called for approval of the minutes of the October 9, 2014 Board of Directors meeting. There being no objections, the minutes were unanimously approved.

IV. Presentations by Arizona State University, San Diego State University, and University of California, San Diego on the Benefits of Rail to Their Campuses

HART Deputy Executive Director Brennon Morioka said that as the rail project would have three stations adjacent to colleges in the University of Hawaii system, one within a few blocks of the John A. Burns School of Medicine, and a downtown station adjacent to Hawaii Pacific University facilities, connectivity with those institutions would be a vital part of rail's success. He introduced three university officials who would make presentations on their institutions' experiences with rail: Sally Roush, former Vice President of Business and Financial Affairs at San Diego State University (SDSU), Gary Matthews, Vice Chancellor for Resource Management and Planning at UC San Diego (UCSD), and Melinda Alonzo, Director of Parking and Transit Service at Arizona State University (ASU).

Ms. Roush gave a PowerPoint presentation that is attached hereto as Attachment A. She began with a brief history of the 1.3 mile Green Line rail extension onto the SDSU campus, which contains an underground station with an at-grade rail entrance. Ms. Roush said that the community was in favor of rail because of the parking intrusion into the community presented by the university. SDSU worked in partnership with Metropolitan Transit Service (MTS) to mitigate noise and traffic impacts, and negotiated a \$1.1 million easement onto the campus in exchange for operating agreement terms. The construction lasted five years, with much of the work scheduled around the school calendar.

The extension opened in 2005 to much success. Annual passes rose from 1,422 in 2004 to 6,061 in the first year of operation. Ridership far exceeded estimates: the entire Green Line was projected to have 11,000 weekday boardings, but that number was met at SDSU alone. Ms. Roush said the current relationship between SDSU and MTS is one of a mutual commitment to safe and efficient operation of the rail system. The station and surrounding plaza lends a sense of place to the campus.

Ms. Roush outlined some lessons learned in the process of having rail built. She stressed the importance of integrating design into the campus. She also spoke of the importance

of having an effective security program in place. Lastly, she said it is critical to have a comprehensive written operating agreement in place that articulates respective responsibilities and dispute resolution.

Mr. Horner asked about the cost for students to ride rail. Ms. Roush said that although a transit pass is more costly than a parking pass, SDSU still enjoys great ridership numbers. Board member Robert "Bobby" Bunda asked whether students pay the same rate for a transit pass as the rest of the community. Ms. Roush responded that SDSU student passes are sold by semester, based on a set number of rides. She stressed that rail has had a positive impact on parking and traffic overall.

Mr. Matthews made his PowerPoint presentation, a copy of which is attached hereto as Attachment B. He said that UCSD is in the planning phase of light rail, which is scheduled to arrive in 2019. He outlined the many regional transportation initiatives UCSD is involved with, which involve partnerships with many different stakeholders. Mr. Matthews said that the UCSD students will utilize universal passes for bus and rail; strong student support resulted in a students-approved transit fee of \$59 per quarter.

Rail will benefit the UCSD community by providing access and affordability to programs, health care, educational, and cultural events, as well as housing, and shopping. It will benefit staff recruitment, and create diversity opportunities. Some of SDSU's concerns regarding rail are security issues, construction-related issues such as noise and vibration, and realizing a fair value for the campus land utilized.

UCSD transit passes will be offered at a discount to students, faculty, and staff. UCSD has purchased 25,000 passes at a discounted rate from MTS for this purpose. Stations on campus will be connected via the "Coaster" connector. SDSU is exploring the possibility of purchasing naming rights for the stations and line that would associate them with the campus and adjacent VA Medical Center. SDSU has also been engaged in service enhancements prior to the inception of rail, which has increased ridership 17% over last few years, as people become more familiar and receptive to public transportation.

Ms. Alonzo then made a PowerPoint presentation, a copy of which is attached hereto as Attachment C. Ms. Alonzo provided an overview of the connectivity provided by light rail to the five ASU campuses. She said that rail has changed the demand for parking on campus; while enrollment of ASU has risen by 18% since 2006, parking permit sales have dropped approximately 40%. Despite that change, ASU still realizes net revenue due to a change in price structuring for parking permits, designed to discourage driving and encourage transit use. Parking passes cost \$780 per year as opposed to the \$200 yearly cost for transit passes. As ASU's system wide enrollment is projected to rise by 120,000 students by 2025, it also offers programs such as the Zip car and car sharing to mitigate traffic concerns.

Ms. Alonzo said that rail contributes to the core ASU values of sustainability, collaboration, and connectivity.

HART Board of Directors Meeting
October 23, 2014

Ms. Alonzo shared that in the cost negotiations with the transit authority Valley Metro, ASU offered to pay a flat fee versus a per-transit pass tap fee, which the authority rejected. Ultimately, ASU paid less for the tap-based fee, which resulted in a considerable cost saving to the university.

Ms. Alonzo said that lessons learned by ASU in the implementation of light rail include the convenience of integrating the transit pass with the student identification cards, and including amenities such as Wi-Fi on the train.

Mr. Grabauskas thanked all the presenters.

Board member Michael Formby said that he had met many people at the Rail-Volution conference who had experiences with universities that did not believe in rail. He asked the presenters their views. Ms. Roush said that the administration of SDSU believed in rail, but that the challenge was surviving construction. She noted the importance of good communication between all parties. Mr. Matthews said that although he was a believer in rail, one chancellor at UCSD was not. Ms. Alonzo said that although ASU was not against rail, there were concerns over how it would work. Those concerns, however, are no longer present as rail has become a way of life for ASU.

Mr. Formby asked if any of the schools made transit passes mandatory. Ms. Roush said that passes are optional at SDSU, and Ms. Alonzo said it is optional at ASU as well. Mr. Matthews said that the students of UCSD voted to impose a mandatory transit fee. Mr. Formby asked if any of the passes were line-limited by location, and all presenters responded that their passes were open for use on all transit lines.

Mr. Hong thanked the presenters. He asked if there was a formula for ridership goals. Mr. Matthews said that while there is no magic formula, UCSD had long range development plans for enrollment.

Mr. Horner asked if ridership at any of the universities had exceeded projections. Ms. Roush said that because of budget considerations, SDSU had deliberately held back on enrollment, which resulted in a general decline in ridership. Ms. Alonzo said that at ASU, ridership has exceeded expectations and the university and its related business now represent a third of total rail ridership.

Mr. Fuchigami asked about hours of rail operation. Ms. Roush said that although rail does not run at SDSU 24 hours a day, seven days a week, MTA adds trains for special events. Mr. Fuchigami asked if there are limited use passes available for part-time students. Ms. Alonzo said that as ASU is an agent for the transit authority, it offers a variety of passes.

Board member Carrie Okinaga asked about the pricing structure for passes. Ms. Alonzo said that ASU pays the transit authority a per-tap rate, and the university subsidizes the cost for transit passes. Mr. Matthews said that UCSD students negotiated directly with

the MTA for the \$59 rate. In addition, UCSD is negotiating for a bulk price for faculty and staff.

Mr. Hong asked about security issues. Ms. Roush said that there were security concerns related to SDSU being the last stop of the day at one time, but that working in partnership with MTA had resolved those issues. Mr. Hong asked if the campus police have jurisdiction at the campus rail station, and Ms. Roush said that campus police officers do.

Mr. Horner asked the presenters about their pass technology. Ms. Roush said while the SDSU transit passes are smart cards they are not integrated with student identification cards. Ms. Alonzo said that Valley Metro and Metro utilize a tap chip card or mag strip card; ASU would like to go to an integrated student/transit smart card. Mr. Matthews said that UCSD is exploring smart cards that integrate with student identification cards.

Mr. Horner asked about the hospitals that are part of the UCSD campus. Mr. Matthews said that clinics and post-op visits will be helped by rail, which will be supplemented by a shuttle fleet of 55 buses. Mr. Matthews said that UCSD generates 95% of its own electricity utilizing micro grids, with a goal to become carbon neutral by 2025.

Mr. Horner asked what percentage of folks have gotten out of cars and now use rail. Ms. Roush said that SDSU saw 10% of people giving up their cars in favor of rail. Ms. Alonzo noted the decline in campus parking passes being issued as indicative of the move from cars to transit.

Mr. Horner thanked the presenters.

V. Right of Way Update

Deputy Director of Right of Way Morris Atta provided a PowerPoint update on right of way efforts, a copy of which is attached hereto as Attachment D. He began with an update on contractor Paragon, whose contract amendment has been executed. Paragon has hired local clerical support, and its expenditures for labor and other costs remain within the budgeted amount.

Mr. Atta reported that overall acquisition progress was up by a couple of percentage points. Survey mapping was 66% complete, and 25% of appraisals were complete, with 75% in progress. Seven percent of offers had been made and completed, with 24% in progress.

Mr. Atta outlined the parcels relative to landowners: 42 parcels are owned by five owners.

Of the total 231 parcels needed, 69 parcels have been acquired. However, in terms of land area acquired, the majority of the square feet required have been obtained, as many of the remaining parcels needed are sliver takings in the City Center area. He reported that only ten full takes remain.

Mr. Horner noted that of the parcels already acquired, HART was \$7.3 million under budget.

Mr. Hong asked about the September 22, 2014 data date. Mr. Atta replied that the September 22nd date was utilized for consistency with HART's reporting to the Federal Transit Administration (FTA) and the Project Management Oversight Contractor. He pointed out that since that date, six more appraisals and ten more offers have gone out, and four more parcels have been acquired. Mr. Horner asked about budget, and Mr. Atta replied that all have been below budget, in an amount that he would report back to the Board.

Mr. Horner asked whether HART was on track to obtain the required parcels to meet its schedule. Mr. Atta replied that although HART faced challenges, its goal was to deliver the needed real estate for its contractor. Mr. Horner requested information showing right of way progress relative to the contractor's schedule.

Mr. Atta said that HART was exploring the possibility of utilizing rights of entry, and was seeking FTA's concurrence in the matter.

Ms. Okinaga noted that the right of way risk rating had gone up in August. Mr. Grabauskas said that the information was lagging, and that staff would update it.

Mr. Hong asked if the right of way division had enough staff and support, and Mr. Atta said it did.

VI. Construction and Traffic Update

Deputy Director of Design and Construction Tom LeBeau and Information Specialist Scott Ishikawa provided the Construction and Traffic Update, a copy of which is attached hereto as Attachment E.

Mr. LeBeau reported on the Rail Operations Center (ROC) construction status, which is 28% complete overall. Mr. Horner opined that as that number didn't include offsite construction and risk, it may be understated. He asked how much of the \$250 million budgeted for the ROC has been drawn down, and Mr. LeBeau responded that 49% has been drawn down. Mr. LeBeau reported that 130 columns and 165 foundations have been constructed, 1,485 segments have been cast, and 37 spans have been built.

Board member Damien Kim asked about the timing of the lane closures for the balanced cantilever construction, and Mr. LeBeau said that Mr. Ishikawa would speak to that.

Mr. Horner asked how many segments were needed, and Mr. Grabauskas said that approximately 5,200 were needed in first ten miles. Mr. Horner noted that the construction pace was slower than planned, and Mr. LeBeau said that following the resolution of wet shaft issues, the pace was picking up in the West Oahu/Farrington

HART Board of Directors Meeting
October 23, 2014

Highway section. Mr. Horner asked how delayed construction was, and Mr. LeBeau said that an update would be given the following month.

Mr. Ishikawa reported on the old Farrington Highway detour and closure, which would begin on November 1st. He also reported on the construction on Farrington Highway near Leoku Street, as well as the lane modifications on Farrington Highway between Waipahu Depot Road and Mokuola.

Mr. Hong asked whether HART would need another precast yard. Mr. Garrido said that the current precast yard would be sufficient for the first ten miles.

Mr. Kim asked about the balanced cantilever. Mr. Ishikawa said that crews were working on the pier table, with guideway work tentatively scheduled by the end of the year. Mr. Garrido said that HART was coordinating with the State Department of Transportation on the balanced cantilever work.

Ms. Okinaga asked about the number of traffic complaints. Mr. Ishikawa said that since its last reporting, HART had received about 20 calls per week on its hotline, mostly for general information.

VII. August and September Monthly Progress Report

In the interest of time, Mr. Horner suggested dispensing with the presentation on the Monthly Progress Report, to which there were no objections. He asked members if there were any questions, and there were none.

VIII. Resolution 2014-2 Adopting a Six-Year Capital Program for FY 2016 – 2021

Mr. Hui suggested deferring the adoption of the Six-Year Capital Program until final approval of the Operating and Capital Budgets. A copy of the draft resolution is attached hereto as Attachment F. There being no objections, the matter was deferred.

IX. HART's Annual Report

HART Board Administrator Cindy Matsushita said that HART's Annual Report, a copy of which is attached hereto as Attachment G, had been presented to the Board the previous month. Following input from members, it was now being presented for approval. Mr. Horner called for the approval of the report. Mr. Bunda so moved, and Mr. Hui seconded the motion. The motion carried unanimously.

X. Report of the Fare Policy Permitted Interaction Group

Ms. Okinaga said that the Board would be discussing adoption of the Fare Policy Permitted Interaction Group report, which contained the Group's two recommendations. She noted that there had been some non-substantive tweaks to the report since it was submitted for Board review at the prior Board meeting, and the corrections were shown

in the members' meeting materials. The report and PowerPoint presentation are attached hereto as Attachment H. The recommendations were for the design of the fare collection system to plan for operations that maximize use of existing expertise and capacity at the City, Oahu Transit Services and HART, and to utilize fare gates.

Mr. Horner opened the floor to public testimony. Rose Pou asked whether the rail and The HandiVan would have a unified fare. Mr. Horner said although that was not within the scope of the Group's recommendation, the matter would be addressed.

Ms. Okinaga moved to adopt the report of the permitted interaction group appointed to investigate fare system strategies and the two policy recommendations of the report (to design a fare collection system that maximizes use of existing expertise and capacity at the City, Oahu Transit Services and HART, and to utilize fare gates). Mr. Horner seconded the motion. All being in favor, the motion carried. Mr. Horner thanked Ms. Okinaga for her leadership.

Mr. Grabauskas asked if there was further action required to conclude the permitted interaction group. Ms. Okinaga said that with the adoption of its report and recommendations, the Group was dissolved. Mr. Horner noted the need for further work on fares. Ms. Okinaga agreed and said that there would be a need for another permitted interaction group in the future. Mr. Grabauskas thanked the Group on behalf of the staff.

XI. Executive Director and CEO's Report

Mr. Grabauskas said that the supplemental Archaeological Inventory Survey work of 15 trenches would be concluded by November 7, 2014. To date, one find of *'iwi* had been made, which was left in place according to protocol.

Mr. Grabauskas said that community outreach continued, with HART participating in two well-attended community meetings in last two weeks for the initial designs of last eight stations.

Mr. Horner noted that there had been considerable testimony regarding backup generators. Mr. Grabauskas said that staff would report back to the Board on backup generators, as it was exploring options and always mindful of the safety of passengers.

Ms. Okinaga asked about the results of the recent meetings with the University of Hawaii (UH). Mr. Grabauskas reported that HART had made good progress on the UH rights of entry for construction, and thanked David Lassner, David Lonborg, and Brian Minaai of UH, as well as Mr. Morioka and Deputy Corporation Counsel Gary Takeuchi for their efforts.

Mr. Horner asked about the quarterly General Excise Tax receipt. Mr. Grabauskas said it would be forthcoming that day or the following day. HART Chief Financial Officer Diane Arakaki said it was \$48.5 million. Mr. Horner asked about federal funding. Mr.

HART Board of Directors Meeting
October 23, 2014

Grabauskas said that there was nothing new to report, but that Congress was moving forward with the next \$250 million appropriation.

XII. Executive Session

There was no need for executive session.

XIII. Adjournment

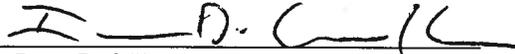
There being no further business before the Board, Mr. Horner adjourned the meeting at 12:37 p.m.

Respectfully Submitted,



Cindy Matsushita
Board Administrator

Approved:



Ivan Lui-Kwan, Esq.
Board Chair

DEC 18 2014

Date

ATTACHMENT A

SAN DIEGO STATE UNIVERSITY AND SAN DIEGO METROPOLITAN TRANSIT SERVICES

A PARTNERSHIP IN PERPETUITY



HART BOARD MEETING AND UNIVERSITY OFFICIALS MEETING October 2014

presentation by

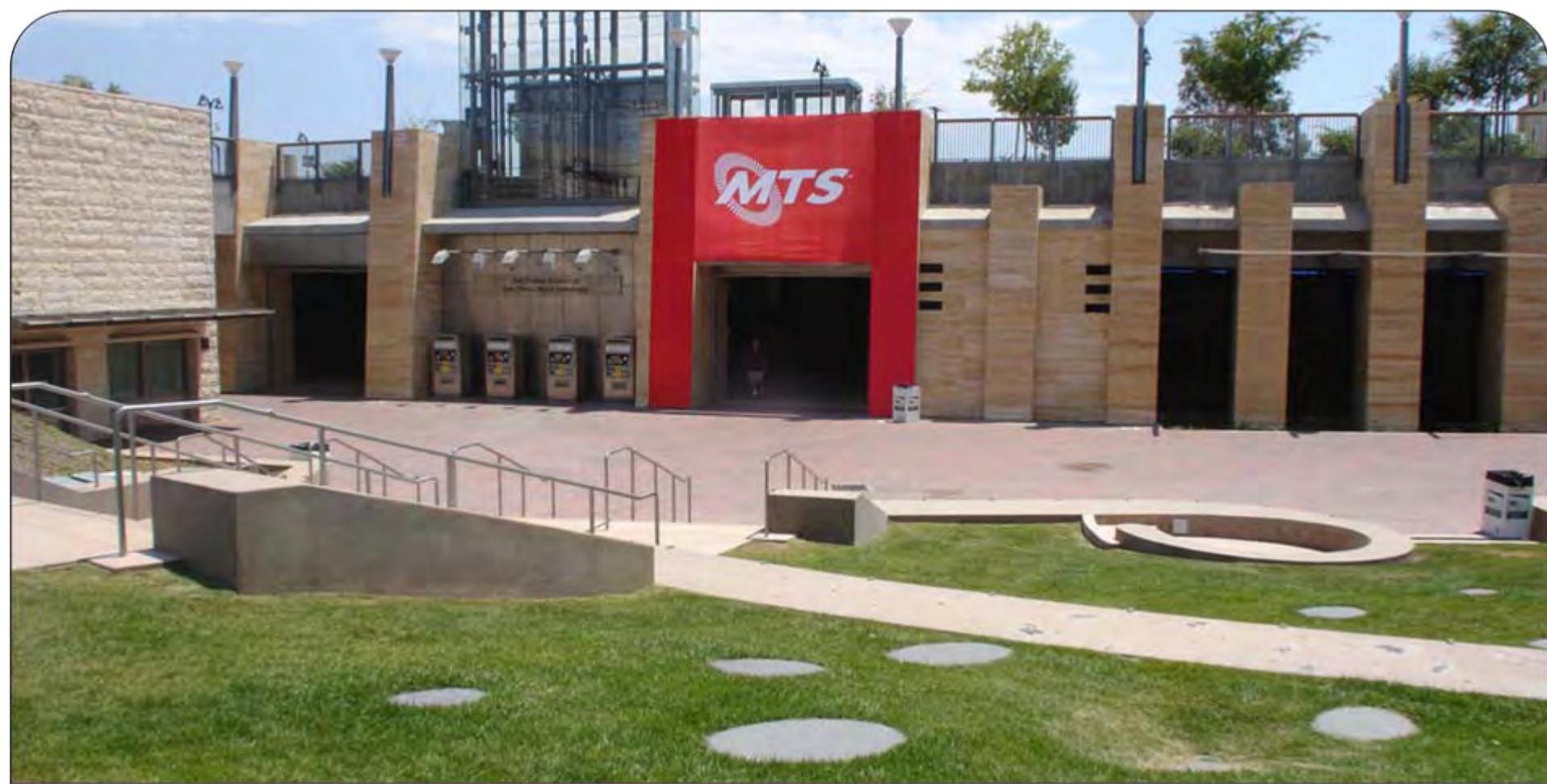
Sally Roush

Vice President Emerita

San Diego State University



SAN DIEGO STATE
UNIVERSITY



Entrance onto Aztec Green from SDSU Station

An “event space” also

SDSU Station History

- Part of 5.8 mile “Green Line” LRT extension
- Multi-year discussion and planning
- University supportive of light rail, cautious about construction and operating impacts
- SDSU portion of Green Line is 1.3 miles, traversing from border to border of campus via elevated and underground tracks



SDSU Campus Map showing 1.3 mile LRT route

Station is in the heart of the campus

SDSU Station Planning

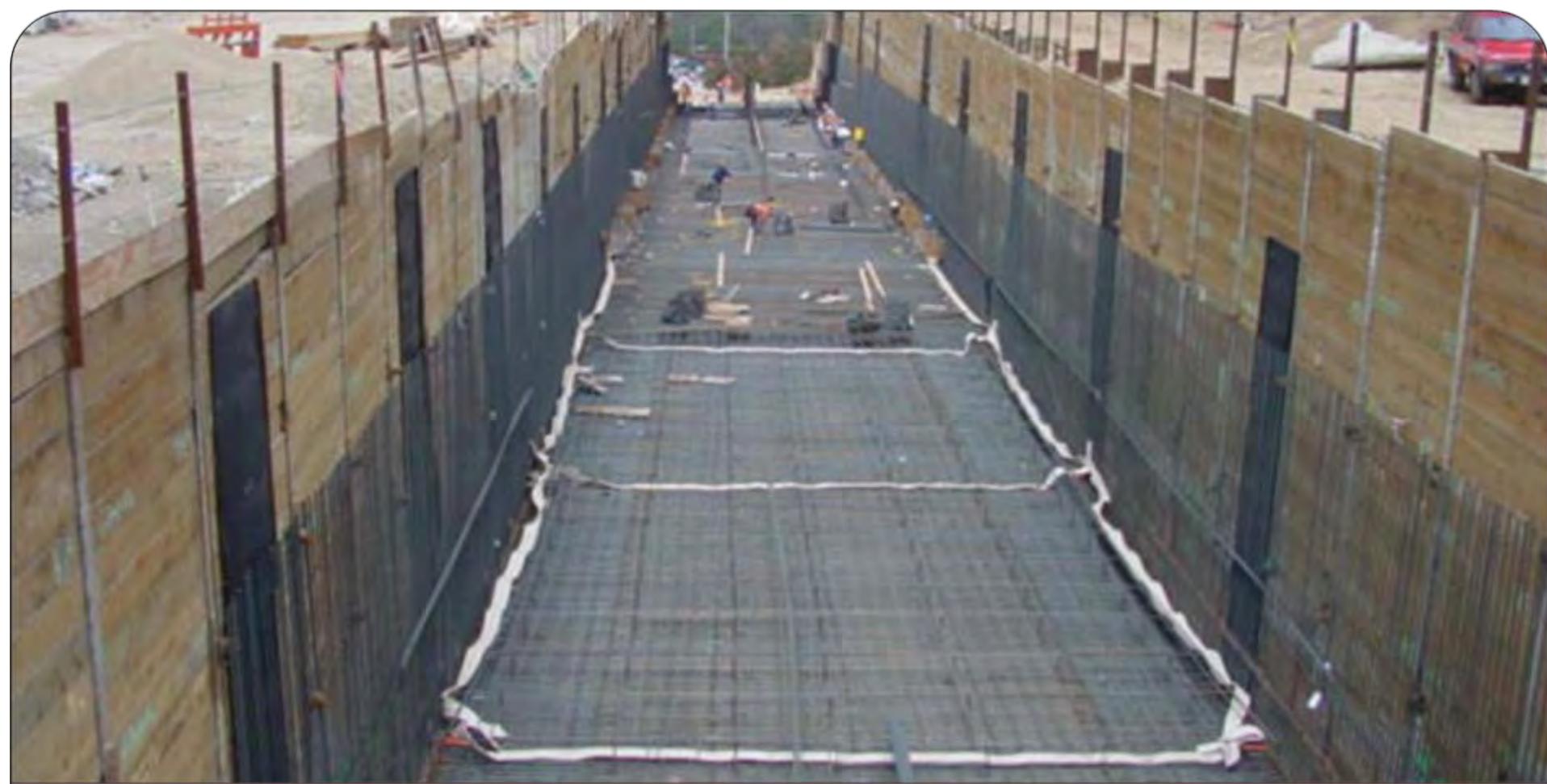
- Years of community and campus input
- Significant efforts to resolve community issues result in final alignment traversing the campus
- Major efforts to resolve university construction impacts and operational concerns

Temporary Access Permit and Construction Agreement

- Hours and specifics of construction developed around university calendar and events
- Noise and traffic impacts mitigated
- Project funded 5-year communication program regarding construction impacts and benefit of light rail service

Post Construction Easement and Operating Agreement

- Value of easement (\$1.1 million) contributed to project in exchange for operating agreement terms
- Operating agreement addresses facility maintenance, security, access issues
- “A Document for the Ages”



Cut and Cover Construction

Most challenging aspect of construction

Five Year Construction Period

- Construction at both western and eastern borders of campus for elevated tracks
- Construction extended through center of campus using both cut and cover and tunneling methodologies
- Tunnel alignment required relocation of major university utility lines
- Cut and cover immediately adjacent to major buildings, student union and (brand new) student resident halls
- Tunneling adjacent to 12,400 seat arena, 2000 car parking garage and under major public street



Cut and Cover at Center of Campus

Effective mitigations helped manage the impacts



Tunnel Under Construction

Excavation was extensive

Truck traffic was a major mitigation issue



Laying the Underground Tracks

Tunneling was an impressive engineering accomplishment



Night Time Construction On/Over/Under College Ave

Coordination with University and City Crucial



Current SDSU/MTS Partnership

- SDSU and MTS are committed to safety, cleanliness and efficient operation of station and surrounding area
- Frequent and effective communications regarding security issues
- Transit passes ease parking and traffic congestion for off-campus students and faculty/staff
- LRT gives on-campus resident students safe and reliable transportation
- Extra trains and schedule adjustments for university events including commencement, football, basketball, and concerts



SDSU Station opens adjacent to Student Union

Staging area during much of construction

SDSU Station Opening

- Grand Opening in Summer 2005
- Annual **Transit Passes** rose from **1422 year prior** to station opening to **6061 first year** of operation
- Ridership **planning** estimates were **11,000 weekday** boardings for **entire Green Line**
- That number was **met at SDSU alone** nearly from the beginning.
- In 2013, average weekday boardings were 39,000 for the Green Line
- After nearly 10 years of operation, SDSU station remains the crown jewel of the LRT system!



Arriving at SDSU Station

A benefit for SDSU and the surrounding community

Challenges Met and Lessons Learned

- Design and Integration Issues are important
 - SDSU station “fits” into campus without duplicating university architectural style
- Security Concerns are Real
 - Security cameras inside and outside tunnel
 - Extra university police hired
 - MTS and University Police radio frequencies addressed
 - Effective incident and communication and management

LRT Station Adds to Sense of Place

- Design and artwork
- Cleanliness
- Maintenance and Operating Policies

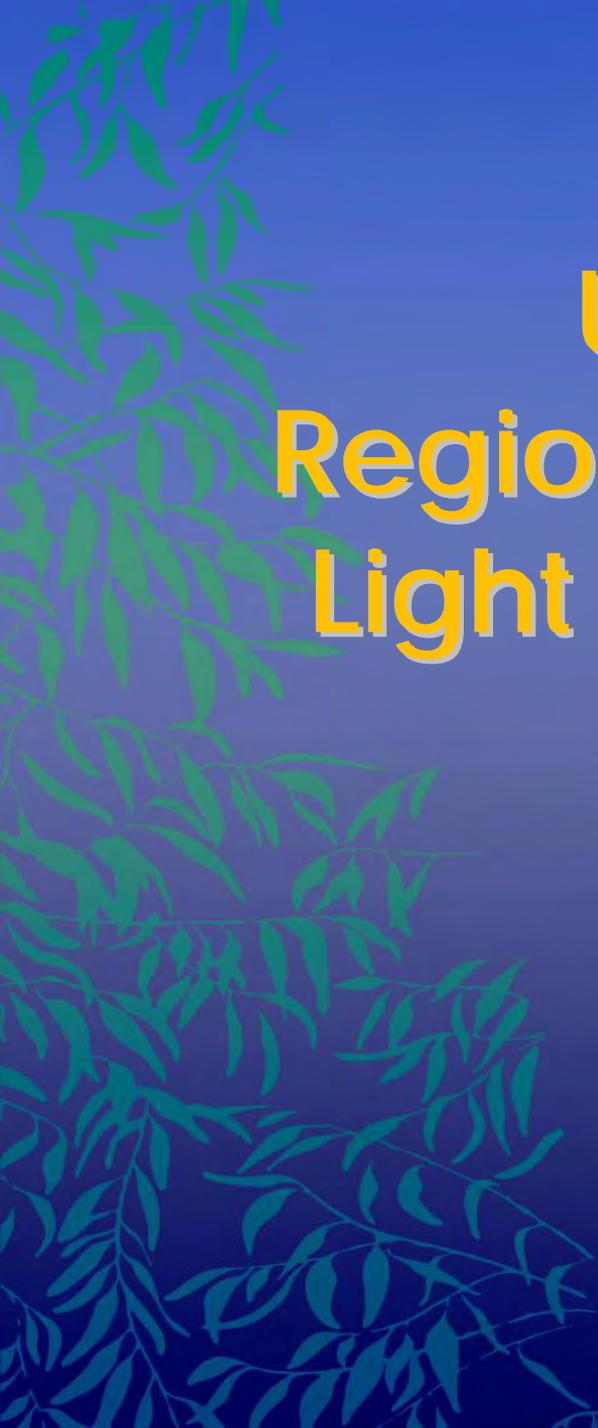
Written Operating Agreement

- An invaluable document
- Open ended
- Easement issues
- Responsibility articulation
- Dispute resolution

Careful, Detailed Planning Led to a Successful Project!

QUESTIONS?

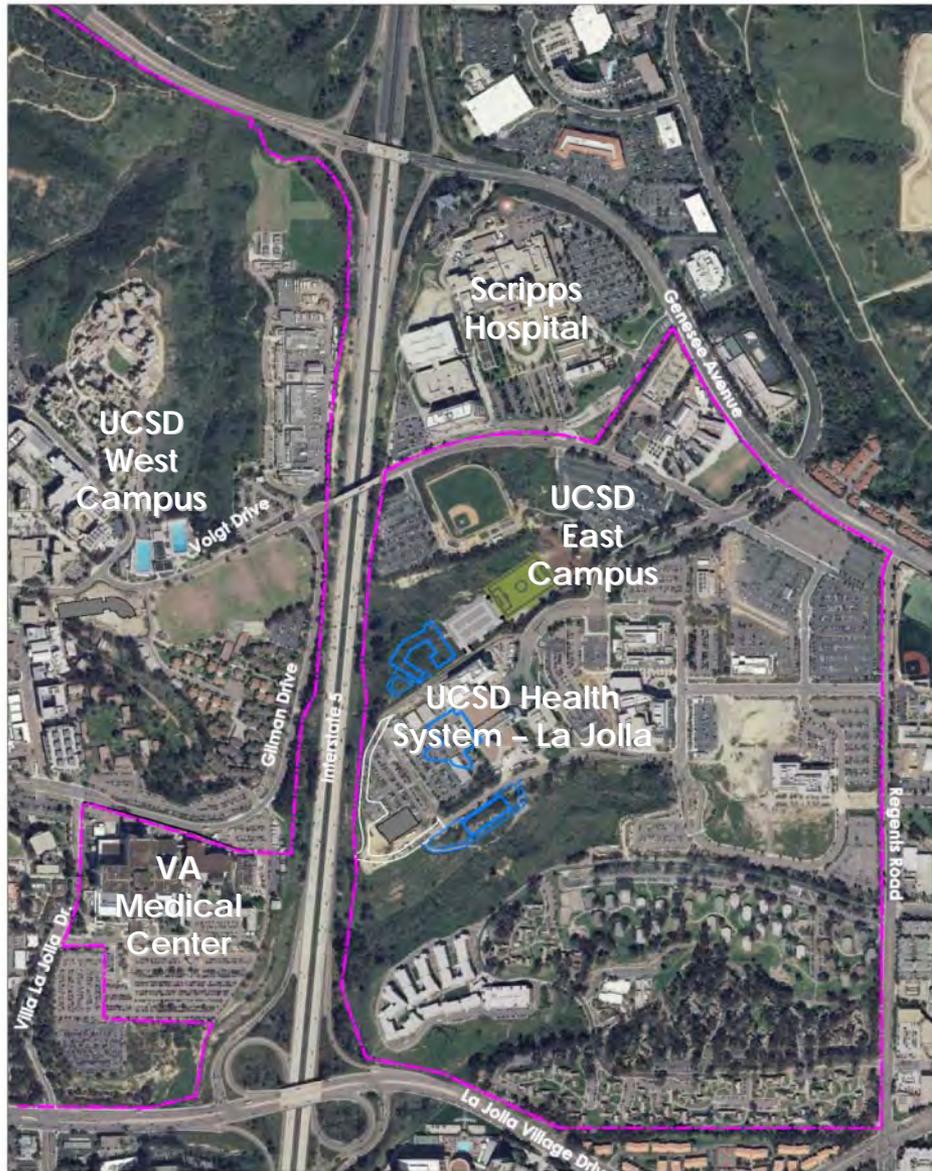
ATTACHMENT B



UC San Diego Regional Transportation/ Light Rail Transit Project

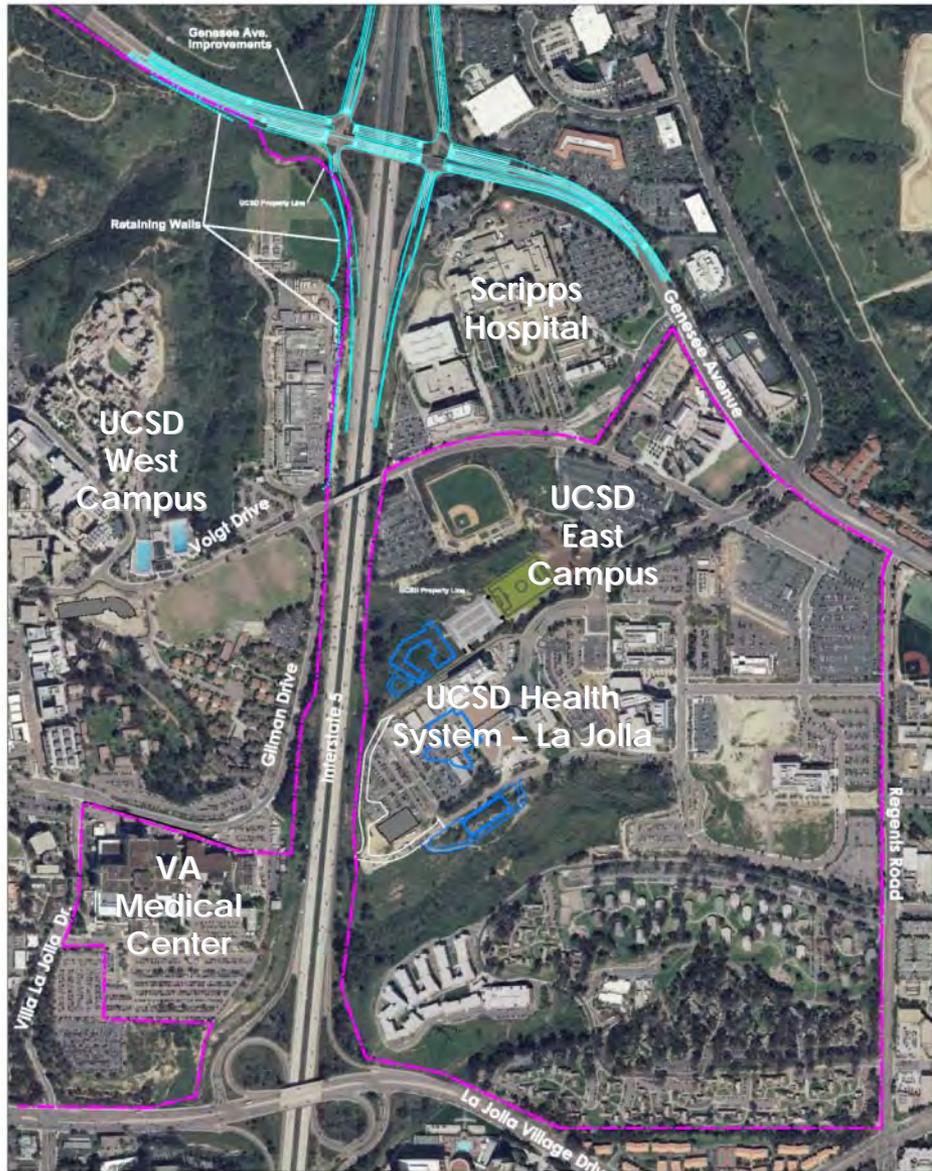
HART
October 2014

Regional Transportation Initiatives



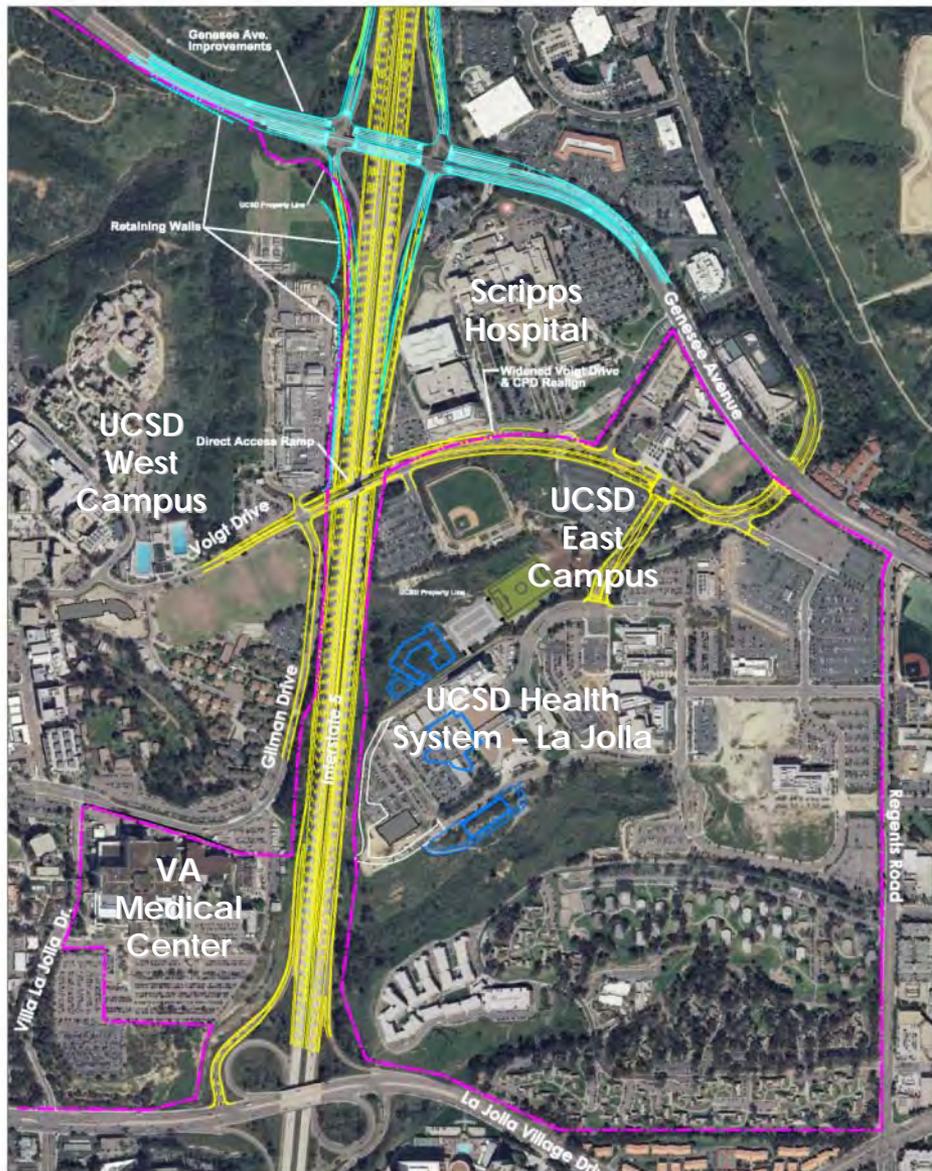
- Interagency collaboration
 - UC San Diego
 - SANDAG
 - Caltrans
 - MTS
 - City of San Diego
- Interconnected
- Complex and Dynamic

I-5/Genesee Interchange



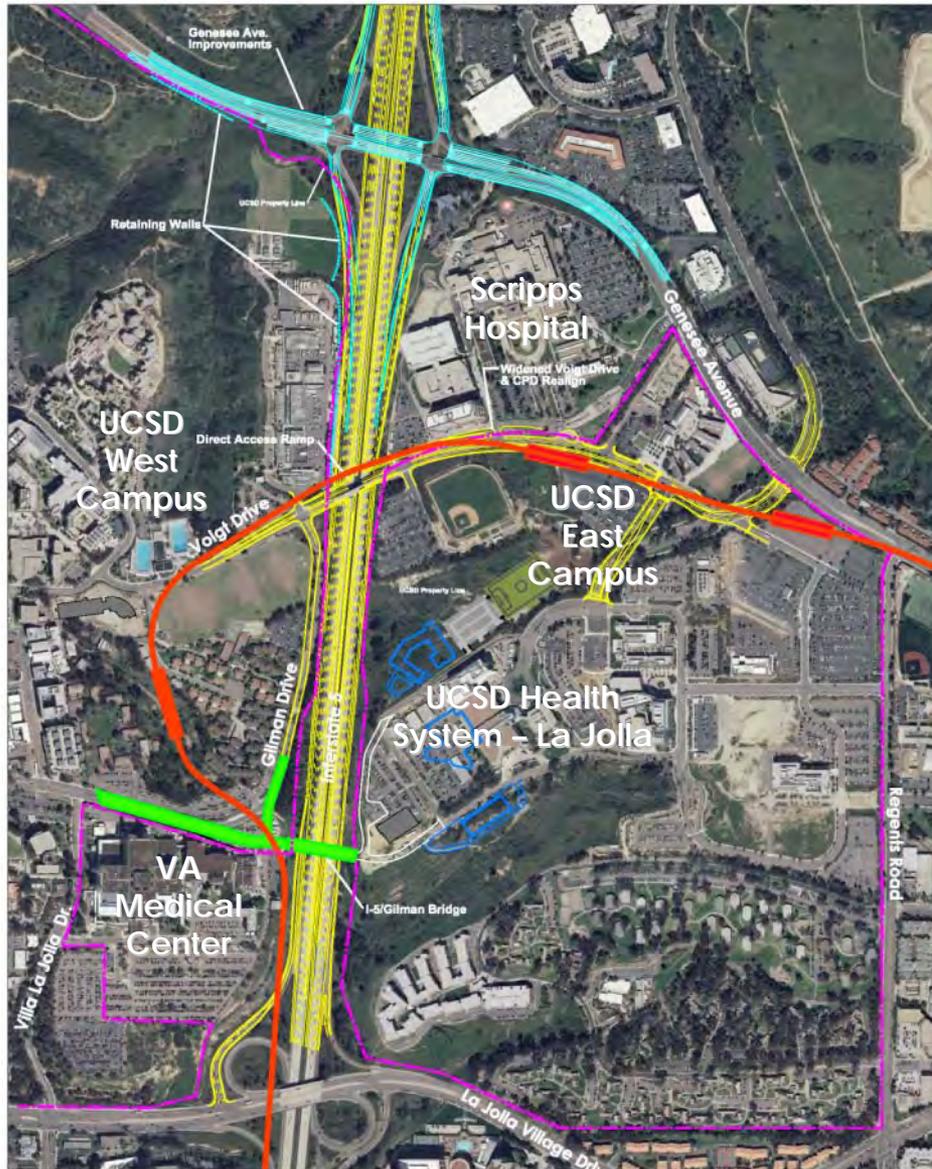
- City/Caltrans project
- Identified in Facilities Benefit Assessment (FBA)
- UC San Diego participating in planning and funding

I-5 North Coast Corridor



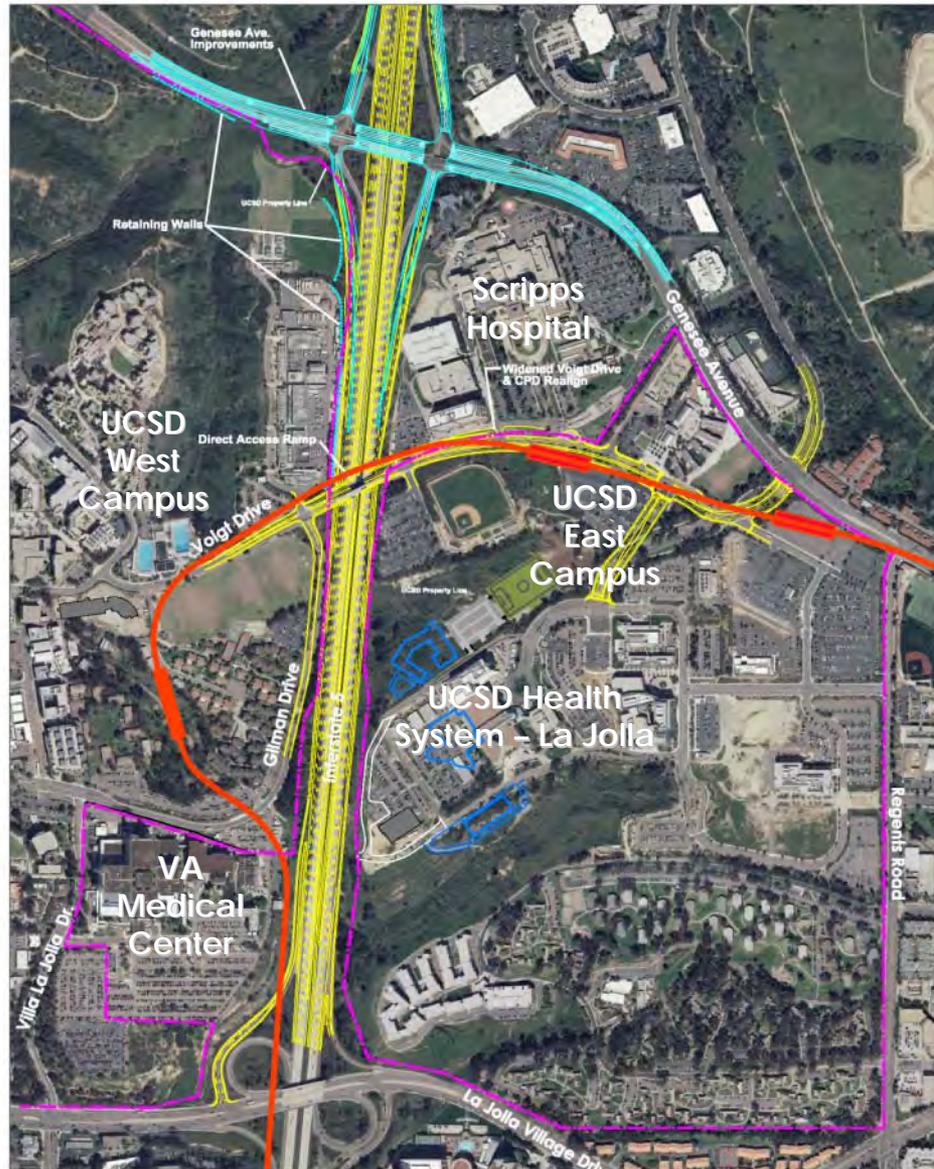
- Caltrans project
- 27 miles of improvements
- Voigt Direct Access Ramp
 - Pros
 - Commute alternatives
 - Improved access
 - Regional benefit
 - Cons
 - Traffic impacts to campus
 - Infrastructure impacts to campus
- UC San Diego identifying right-of-way

I-5/Gilman Bridge



- Diverts UC San Diego traffic from Genesee/La Jolla Village Drive/Voigt Drive
- Second connection between East and West Campus
- Coordination w/SANDAG, Caltrans, and VA
- Hired Executive Engineer
- UC San Diego funding design and environmental

Mid-Coast Light Rail Transit



- SANDAG project
- 11 mile extension
- Alignment refinements
- West Campus Station
 - Pedestrian connections
 - Safety/Security
- East Campus Station
- Design options
 - Proximity to destinations
 - Pedestrian connections
- Integration w/North Coast

LRT Operational Components

Project-related considerations that are “operational” in nature but add long term value (supports ridership and reduces financial burdens)

- Transit passes
- LRT stations
- Dedicated services

Benefits and Major Concerns

- Access and affordability to programs
- Health Care, Educational and Cultural
- Housing, Shopping
- Staff recruitment
- Diversity opportunities

Benefits and Major Concerns

- Safety and Security, unwanted visitors
- Impact to campus environment, EMF
- Vibration, Noise
- Fair value for campus land utilized
- Impact on campus business operations

Transit Passes

- Discounted transit passes for students, faculty and staff
- Upass Program
- Preuss School student passes
- “Free Fare Zone” LRT access between two stations for all UC San Diego staff, faculty and students

LRT Stations

- No “last stops” at UCSD stations
- Coaster connector service from a coaster station to the LRT
- Branding/Naming rights – Opportunities will be provided to name the stations and line to associate it with the University and the Medical Center

Dedicated Services

- Provide buses/shuttles for circulation through the Heath System neighborhood where a significant number of staff, patients and visitors would have access to LRT service.
- Dedicated LRT trains: During heavy travel times, one or two cars could be dedicated specifically for student travel (i.e. Preuss students at UCSD).
- 17% increase in ridership over the last few years.

Community Involvement

- Town meetings
- Environmental impact study and review presentations
- Review by Faculty Senate
- Presentation within our Transportation Demand Programs to faculty and staff

Innovative Ways to Generate Excitement and Improved Ridership

- Service enhancements to the campus prior to rail arrival
- New services increase available routes providing access to new areas that will interest with the light rail in the future
- Physical improvements



Associated Regional Transportation Components

- Completion of retail/security space at Pepper Canyon LRT station
- Lyman Walk Realignment: A “roadway” that would be realigned to provide better wayfinding and improve pedestrian access to/from LRT station
- Transit Walk and Plaza: Interconnects LRT station to the Gilman Transit Center which improves wayfinding and access between two major transit areas and links to the School of Medicine neighborhood

Summary

UC San Diego is an active partner in the region:

- Provides research affiliations, innovations and economic development
- Collaborates with regional partners to achieve mutually beneficial solutions



Thank you

Supplemental Information

- [Construction Alert – LRT Project](#)
- DAR Letter
- NCC Comment Letter
- SANDAG Letter
- Steering Committee Summary
- UHWO Development Plan
- UHWO Aerial

DAR Letter

Attachment A

UNIVERSITY OF CALIFORNIA, SAN DIEGO

UCSD

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

OFFICE OF THE VICE CHANCELLOR
RESOURCE MANAGEMENT AND PLANNING

9500 GILMAN DRIVE
LA JOLLA, CA 92093-0057
(858) 534-6820 • 534-9836 FAX
<http://www.vcrmp.ucsd.edu>

July 26, 2012

LAURIE BERMAN
District 11 Director
California Department of Transportation
4050 Taylor Street
San Diego, CA 92110

Subject: Voigt Drive Direct Access Ramp (DAR)

Dear Laurie:

The purpose of this letter is to express UC San Diego's support of the Voigt Drive Direct Access Ramp (DAR) being designed as a component of the North Coast Corridor Project. UC San Diego supports the development of regional transportation solutions that improve access and allows for the continuing sustainable growth of the campus. The proposed DAR would provide both northbound and southbound access via ramps to the I-5 freeway high occupancy vehicle (HOV) lanes. The project would enable carpools, vanpools and buses to connect directly with the HOV freeway lanes and avoid crossing multiple lanes of traffic. The overriding benefits of the DAR include improved safety, reduced congestion at existing interchanges in the area, and increased reliability for both HOVs and general-purpose traffic. In addition, the DAR would improve regional access to the UC San Diego campus by providing an alternate means of accessing the freeway from campus, would improve access to the UC San Diego Medical Center, and would decrease campus parking demand by encouraging use of alternative transportation.

Through continued collaboration, it is our desire that the DAR and associated improvements be designed in a manner that reflects community character, creates a campus gateway on Voigt Drive, and enhances safe and efficient travel of bicyclists and pedestrians.

The Voigt DAR project would result in increased vehicular traffic, including non-affiliated trips on Voigt Drive and Gilman Drive, in particular. The campus engaged the services of a traffic engineer to study the implications of the DAR and to provide recommendations. In order to accommodate the increase in traffic volume, the project would require the following improvements at the identified segments or intersections:

1. Voigt Drive and Gilman Drive Intersection (west of I-5)
 - A second west bound left turn lane from Voigt Drive onto Gilman Drive which would require the widening of Gilman Drive to accept two turning lanes.
 - New traffic signal.
2. New Gilman Drive and I-5 Bridge Intersection (near VA Hospital)
 - A second east bound left turn lane needed at new intersection which would require the widening of Gilman Drive to accept two turning lanes.

Attachment A

LAURIE BERMAN
July 26, 2012
Page Two

3. Voigt Drive and Campus Point Drive between I-5 and Genesee Avenue
 - Voigt Drive widening from 2 to 4 lanes and realignment of Campus Point Drive.

To minimize impacts to the campus community and UC San Diego Medical Center, all DAR related site improvements on East Campus would be constructed as part of the Mid-Coast Light Rail Transit (LRT) project. The realignment of Campus Point Drive is a critical component of the LRT project and is needed to provide direct pedestrian access to the Medical Center. This was a condition for the support of the proposed East Campus LRT station location. The realignment of Campus Point Drive impacts the location identified for a future track and field that is in design. As a result of the realignment of Campus Point Drive, the facility would need to be shifted north, impacting wetlands located adjacent to Voigt Drive. To ensure the viability of the track and field project we would ask Caltrans and SANDAG to work with the appropriate resource agencies to mitigate and secure wetland permits.

Based on the traffic analysis, approximately 62% of Voigt DAR users would not be affiliated with UC San Diego. Given the increase in traffic volume on the Voigt Bridge, the one connection between East and West Campuses, we would anticipate that regional funding would be allocated for the construction of the Gilman Bridge and site improvements. This bridge project is necessary to maintain safe, efficient campus circulation that would be otherwise impacted by the increase in non-affiliated vehicle trips. The campus would like to advance the Gilman Bridge project as expeditiously as possible (and in advance of the Voigt DAR) and appreciates Caltrans support in this effort.

We have completed our due diligence at the campus level to understand the technical aspects of the project and the affect that it will have on our campus community. We feel that with the inclusion of the aforementioned elements that it will be a benefit to the campus as well as the region. While the land use and planning considerations have been analyzed, there remains to be significant work in regards to real estate matters that include land appraisal and valuation, land disposition and ownership, compensation, as well as ongoing maintenance responsibilities.

Notwithstanding future real estate negotiations, agreements and transactions, UC San Diego supports the Voigt DAR based on the conditions that 1) there is continued collaboration on the planning, design, and construction; 2) necessary intersection and road segment improvements are included in the scope of the project; 3) all site improvements and necessary permits on East Campus are implemented with the LRT project; and 4) funding is allocated from SANDAG for the construction of the Gilman Bridge and improvements. Please do not hesitate to contact me if you have any questions.

Sincerely,

Gary C. Matthews
Vice Chancellor

cc: Chancellor Marye Anne Fox
G. Gallegos
G. Gastelum
B. Gregory
A. Jacobo
N. Kossan
A. Kosup
B. Werdick

NCC Comment Letter

October xx, 2012

Shay Lynn Harrison, Chief
Environmental Analysis, Branch C
California Department of Transportation, District 11
4050 Taylor Street, MS 242
San Diego, CA 92110

Re: Interstate 5 North Coast Corridor Project Supplemental Draft Environmental Impact Report/Environmental Impact Statement (SEIR/EIS)

Dear Ms. Harrison:

Thank you for the opportunity to review and comment on the Supplemental Draft Environmental Impact Report/Environmental Impact Statement (SEIR/EIS) for the Interstate 5 North Coast Corridor Project (I-5 Project). UC San Diego supports the development of regional transportation solutions that improve access and allow for continued, sustainable growth of the campus.

The I-5 Project proposes a Direct Access Ramp (DAR) at Voigt Drive in proximity to the UC San Diego campus. On July 26, 2012 the campus contacted Caltrans District 11 Director Laurie Berman to express its conditional support of the Voigt Drive DAR as described in the attached letter (Attachment A).

Specific to the I-5 Project SEIS/EIR document we provide the following comments:

The Impact/Benefits described in Table 2.2.4 (page 2-38) for Traffic/ Transportation/ Pedestrian/ Bicycle Facilities, does not identify on-campus roadway deficiencies for Voigt Drive DAR implementation, and excludes needed on-campus roadway infrastructure improvements required to accommodate DAR on campus. Needed improvements include the following, and should be included in Table 2.2.4 as Avoidance/Minimization measures:

1. Voigt Drive and Gilman Drive Intersection (west of I-5)
 - A second west bound left turn lane from Voigt Drive onto Gilman Drive which would require the widening of Gilman Drive to accept two turning lanes.
 - A new traffic signal.
2. New Gilman Drive and I-5 Bridge Intersection (near VA Hospital)
 - A second east bound left turn lane is needed at the new intersection which would require the widening of Gilman Drive to accept two turning lanes.

NCC Comment Letter

Shay Lynn Anderson
October 15, 2012
Page 2

3. Voigt Drive and Campus Point Drive between I-5 and Genesee Ave.
 - Voigt Drive widening from 2 to 4 lanes and realignment of Campus Point Drive.

The SEIS does not appear to take into consideration biological impacts associated with the widening of Voigt Drive east of I-5 nor the realignment of the Voigt Drive/Campus Point Drive intersection to accommodate the DAR connection on the UCSD east campus. The necessary modifications to Voigt Drive would impact approximately 0.25 acre of wetland habitat located south of Voigt Drive. Please modify Table 2.2.4 (and anywhere else in the SEIS as applicable) to disclose this impact and the applicable mitigation.

Traffic noise associated with freeway widening, the Voigt DAR and other related improvements east of I-5 are not included in Table 2.2.4 of the SEIS/EIR. Student housing facilities are located east and west of the project and the UC San Diego Preuss School is located along Voigt Drive. Noise impacts to these facilities should be disclosed and properly addressed.

Table 2.2.4 Biological Resources Mitigation for Voigt Drive DAR includes mitigation for the coastal California gnatcatcher. UC San Diego is unaware of any occupied gnatcatcher habitat on campus lands located within the impact footprint of the I-5 widening, Voigt Drive DAR, or the associated necessary campus roadway improvements described above.

Pedestrian safety and traffic impacts to the UC San Diego Preuss School are not addressed in the SEIS/EIR. The realignment of Campus Point Drive and the widening of Voigt Drive would create increased vehicular traffic in close proximity to the Preuss School facility and the SEIS/EIR contains no discussion of potential impacts or avoidance measures.

Access long-term and during construction to the UCSD Medical Center for emergency vehicles and patients has not been considered. The realignment of Campus Point Drive and widening of Voigt Drive has the potential to significantly impact access to these facilities. UC San Diego seeks continued discussion of phasing and other logistical considerations to best implement the DAR and associated improvements to minimize impacts to the campus to the extent feasible.

The SEIS/EIR briefly discusses the bike facility that would be part of the I-5/Genesee Avenue Improvement project. UC San Diego has been working with Caltrans to address siting concerns with respect to the bike facility that would run just east of the UC San Diego Campus Services Complex. There are concerns given the proximity of the freeway and bike facility retaining walls to an existing fueling station, fuel tanks and Emergency Management Facility (EMF) gas cylinder storage. The campus will continue to work with Caltrans to identify a mutually acceptable solution to this issue. In addition the campus previously discussed with Caltrans a potential grade separated bicycle and pedestrian bridge that would be located under Voigt DAR and go over I-5. The campus supports bicycle and pedestrian circulation at street level along Voigt Drive within bike lanes, sidewalks/crosswalks; no separate dedicated path would be necessary.

NCC Comment Letter

Shay Lynn Anderson
October 15, 2012
Page 2

Project coordination with UC San Diego is imperative regarding planned utility relocations and shutdowns. Any utility interruptions and lack of vehicular access during the Voigt Bridge replacement will need to be minimized and coordinated. Access to the UC San Diego Medical Center will need to be maintained during construction.

Parking on the UC San Diego campus is especially constrained and the permanent displacement of parking is problematic. As a result impacts to campus parking should be avoided to the greatest extent possible. There are various surface parking lots that would be affected by the project. Any impacts to parking would need to be replaced by the I-5 Project.

There are several major transportation improvement projects planned within the I-5 corridor adjacent to or on University property including the Mid-Coast Light Rail Transit, I-5/Genesee Avenue Improvements, I-5/Gilman Drive Bridge and the I-5 Project. It is imperative that the design solutions to these projects are coordinated to minimize land use and visual impacts. Recent discussions between the campus and Caltrans have taken place to consider design solutions in the corridor adjacent to UC San Diego. Through continued collaboration on the project design, UC San Diego would expect the DAR, retaining walls and associated freeway improvements to be designed in a manner that reflects community character, are sensitive to the surrounding campus environment, create an appropriate campus gateway, and complement one another. More specifically, Caltrans should consider the use of columns in lieu of retaining walls for the Voigt DAR to minimize a concrete canyon effect. The proposed retaining walls should undulate and follow the topography to better reflect the natural character of the corridor. These recommendations are reflected in Attachment B. Please do not hesitate to contact me if you have any questions.

Sincerely,

Gary C. Matthews
Vice Chancellor
Resource Management and Planning

NCC Comment Letter

Shay Lynn Anderson
October 15, 2012
Page 2

Project coordination with UC San Diego is imperative regarding planned utility relocations and shutdowns. Any utility interruptions and lack of vehicular access during the Voigt Bridge replacement will need to be minimized and coordinated. Access to the UC San Diego Medical Center will need to be maintained during construction.

Parking on the UC San Diego campus is especially constrained and the permanent displacement of parking is problematic. As a result impacts to campus parking should be avoided to the greatest extent possible. There are various surface parking lots that would be affected by the project. Any impacts to parking would need to be replaced by the I-5 Project.

There are several major transportation improvement projects planned within the I-5 corridor adjacent to or on University property including the Mid-Coast Light Rail Transit, I-5/Genesee Avenue Improvements, I-5/Gilman Drive Bridge and the I-5 Project. It is imperative that the design solutions to these projects are coordinated to minimize land use and visual impacts. Recent discussions between the campus and Caltrans have taken place to consider design solutions in the corridor adjacent to UC San Diego. Through continued collaboration on the project design, UC San Diego would expect the DAR, retaining walls and associated freeway improvements to be designed in a manner that reflects community character, are sensitive to the surrounding campus environment, create an appropriate campus gateway, and complement one another. More specifically, Caltrans should consider the use of columns in lieu of retaining walls for the Voigt DAR to minimize a concrete canyon effect. The proposed retaining walls should undulate and follow the topography to better reflect the natural character of the corridor. These recommendations are reflected in Attachment B. Please do not hesitate to contact me if you have any questions.

Sincerely,

Gary C. Matthews
Vice Chancellor
Resource Management and Planning

SANDAG Letter

DRAFT

February 21, 2014

Gary L. Gallegos
Executive Director
San Diego Association of Governments
401 B Street, Suite
San Diego, CA 92101

RE: Advancement of the Mid-Coast Light Rail Transit Project at UC San Diego

Dear Gary:

I understand that you have requested to meet with me on April 9, 2014 to discuss the draft Mid-Coast LRT Preliminary Appraisal conclusions. We appreciate that SANDAG is moving forward with the appraisal process, and staff and consultants at both of our organizations have been diligently working together to advance the process.

I have discussed with my staff the current status of outstanding items that UCSD has requested from SANDAG, and attached is a summary list of items grouped into two areas: 1. items that are needed in order to advance the Preliminary Appraisal, and 2. Other items requested by SANDAG.

Given the list of outstanding items, I think that it is too early to schedule a meeting to discuss the Preliminary Appraisal. SANDAG's draft Preliminary Appraisal schedule (dated 2/11/14) shows that the earliest that the draft Preliminary Appraisal would be available is April 8th, and some of the scheduled dates have already passed without task accomplishment. Once the draft Preliminary Appraisal is available for UC review, we have shared with SANDAG staff that we will need approximately four weeks to review the draft appraisal including time for a meeting with the appraiser and SANDAG.

UC San Diego continues to look forward to working together with SANDAG to advance the Mid-Coast LRT Project through the approval process.

Sincerely,

Gary C. Matthews
Vice Chancellor

SANDAG Letter

DRAFT

ADVANCEMENT OF THE MID-COAST LRT PROJECT AT UC SAN DIEGO

ITEMS NEEDED TO ADVANCE THE PRELIMINARY APPRAISAL:

1. **Preliminary ROW Maps mutually agreed to by SANDAG AND UCSD.** UCSD provided comments on SANDAG's draft Preliminary ROW Maps (dated 12/6/13) on 12/20/13. SANDAG provided a Revised Preliminary ROW Map to UCSD on 1/30/14, 2014 incorporating some of UCSD's comments. UCSD provided comments (within its 10-day review period) on the Revised Preliminary ROW Map to SANDAG on 2/12/13 with redline comments of the UCSD 12-20-13 comments indicating a number of outstanding items that SANDAG is to provide.
 - a. **SANDAG to stake Preliminary ROW Areas.** As soon as mutually agreed upon updated Preliminary ROW Maps are available, SANDAG to stake of all proposed Right-of-Way areas (permanent and temporary) so it can be walked end to end with technical team to further evaluate direct and secondary impacts (and recommend modifications). Requested on 12/20, and agreed to by SANDAG on 1/22. SANDAG to coordinate scheduling of staking in advance with UCSD when mutually agreed upon updated Preliminary ROW maps are available.
2. **Draft Easement Document.** SANDAG is to provide a draft easement document for UCSD review with the mutually agreed to easement document to be attached to the Final Appraisal Instructions. This document has been requested of SANDAG many times over the past year, and most recently on 12/20/14, 1/22/14, and 2/12/14.
3. **Joint Appraisal Instructions.** At the 1/22/14 meeting with SANDAG, UCSD and SANDAG agreed in order to expedite the preliminary appraisal process, SANDAG would advance its Task Order to procure the draft appraisal of UC property, and follow with providing the appraiser mutually agreed upon joint appraisal instructions. SANDAG provided Draft Joint Appraisal Instructions to UCSD on 2/6/14. UCSD provided comments on the Draft Appraisal Instructions and Attachment A on 2/18/14 and 2/20/14 with placeholder exhibits for the Preliminary ROW Maps (mutually agreed to by SANDAG and UCSD), Permanent Easement document and License Agreement with the understanding that the appraiser would be provided Final Appraisal Instruction that include these items. UCSD requested a copy of SANDAG's Task Order that the Attachment A (and Draft Appraisal Instructions) would be attached to on 2/18/14 and 2/20/14.
4. **EMF Studies.** UCSD has requested that SANDAG provide EMF readings taken at the Structural & Material Engineering Building, and EMF Studies that SANDAG is preparing with the realignment of the LRT, and SANDAG's recommendations for mitigations at both of the UC San Diego stations. In addition UCSD has requested EMF "contours" for the entire alignment through the campus to identify any potential impacts to future development. These have been requested many times most recently on 1/22/14 and 1/30/14.
5. **Proposed Traction Power Substation Easement to SDG&E.** SANDAG has proposed to locate a traction power substation (TPSS) in parking lot P701 (west of baseball field). UCSD has requested on many times, most recently 1/22/14 and 2/12/14 that SANDAG provide

DRAFT

information regarding source of SDG&E connection and to identify proposed SDG&E easement on UCSD property. Appraiser would need to value any easement granted by UCSD to SDG&E. UCSD has requested that SANDAG also consider the alternate location on Scripps Hospital property.

OTHER ITEMS REQUESTED FROM SANDAG:

6. **Station Design Concepts for UCSD Pepper Canyon and East Campus Stations.** UCSD needs to review to more fully understand the extent of needed site improvements. UCSD also needs to understand the design of the actual station which we have not yet seen any concepts. We have had a couple of meetings (11.19.13 and 12.11.13) in which we shared our design concepts for the sites and approach to the station designs. It's our understanding that we will be part of the development of these stations, but we have not yet been included in any design meetings. The SANDAG team was scheduled to meet in early February but we haven't had any follow-up discussions. We have communicated our discretionary review process to the SANDAG team.
7. **Schedule Development Workshop.** Schedule development workshop for the regional transportation projects with the intent of developing a master schedule with key milestones and critical dates so that the work plans of individual projects are coordinated with each other. Requested on 12/20/13, 1/22/14 and 1/30/14.
 - a. **Right-of-Way Schedule Workshop held on 1/22/14.** UCSD provided input at workshop and on 1/17/14. SANDAG to make revisions discussed and provide to UCSD. UCSD requested on 1/30/14. SANDAG provided draft portion of schedule on 2/11/14 of which several dates have passed.
8. **Schedule Utilities Workshop** – UCSD requested separate UCSD/SANDAG meeting to be set up in January to discuss proposed temporary and permanent utilities for Mid-Coast LRT Project. Requested on 12/20/13, 1/22/14, and 2/12/14.
9. **Project Construction.** Please provide the current construction estimates for the SANDAG projects on UC San Diego. Requested on 1/30/14.

Steering Committee Summary

**Mid-Coast Corridor Transit Project:
Estimating Regional and UC San Diego-Specific Economic Benefits
UC San Diego-SANDAG Steering Committee Meeting 2
April 2, 2013 (2:30 to 4:30 p.m. at UC San Diego)**

Summary of Meeting—DRAFT

Attendance:

Brian Gregory, Assistant Vice Chancellor, Strategic Campus Resource Initiatives, UC San Diego,
Mark Jacobsen, Assistant Professor, Department of Economics, UC San Diego
Laurie Berman, District Director, District II, Caltrans
Allen Kosup, I-5 Corridor Director, Caltrans
Paul Jablonski, Chief Executive Officer, MTS
Brent Boyd, Senior Transportation Planner, MTS
Gary Gallegos, Executive Director, SANDAG
Jim Linthicum, Director of Mobility, SANDAG
John Haggerty, Director of Rail, SANDAG
Greg Gastelum, Project Manager for Engineering for Mid-Coast
Marney Cox, Chief Economist, SANDAG
Sonya Smith, Economic Research Analyst, SANDAG
Cheryl Mason, Senior Research Analyst, SANDAG

Purpose and Objectives of Study:

SANDAG and Caltrans are requesting that UC San Diego provide right of way (ROW) and access to land in support of the Mid-Coast Corridor Transit Project and North Coast Corridor (NCC) project. UC San Diego representatives have indicated support for the project and have offered to work with SANDAG to determine if the ROW can be provided in light of project benefits. SANDAG, Caltrans, UC San Diego, and MTS mutually agreed to create this Steering Committee to oversee a process that would analyze and estimate the benefits of the projects by determining their value to both the region and specifically to UC San Diego. The goal of this process will be to create a cooperative procedure for evaluating the specific economic benefits of the projects that will aid in an equitable exchange of land for all parties. Specifically, the process will look at completing a joint-appraisal but will go beyond the appraisal process to monetize benefits of the project to UC San Diego. This will support the objective of moving the Mid-Coast Corridor Transit Project and the NCC project forward in a cost-effective manner.

Highlights and Agreements:

- Steering Committee Co-Chair Gary Gallegos and Acting Co-Chair Brian Gregory (acting for Gary Matthews) provided opening remarks.
- Gary Gallegos stated that the light rail project and improvements along I-5 have important benefits to the region and to UC San Diego. He emphasized that the way the project is budgeted today does not assume that we will be covering public ROW costs. Incurring these costs will be negative for the project and it may not be cost effective to build it. He is hopeful that this collaborative effort will provide tools that will help us understand the economic benefits the university will gain out of the light rail and I-5 improvements. In turn, this will allow us to value the land and assets (which includes the ROW, improvements, and other benefits) and determine in an equitable exchange that offsets the value of the land with the improvements and

benefits the projects will bring to UC San Diego. The goal is for all parties to see there is more value than the taking at the end.

- Brian Gregory confirmed UC San Diego's commitment to the effort and the Chancellor's support. He acknowledged that there is a real estate process that this effort will need to address as part of the larger process to evaluate economic benefits. UC San Diego would like all projects to be reviewed by the chancellor at same time (such as Voigt DAR and Gilman Bridge) to understand the comprehensive nature of these projects.
- The Steering Committee reconfirmed its commitment to the objective of the study and to work together to find workable solutions to move closer to building Mid-Coast.
- The Steering Committee discussed the establishment and role and organization of a Technical Committee. The Technical Committee will comprise representatives from the same four agencies (UC San Diego, SANDAG, Caltrans and MTS.) The Technical Committee's role is to focus on the details the analyses, dig deeper into specific issues, share information, vet ideas, and agree on approaches and concepts to help shape the study. Technical Committee meetings will occur prior to Steering Committee meetings. Issues that arise for which the Technical Committee is unable to reach consensus will be elevated to the Steering Committee for resolution.
- The Steering Committee agreed to extend the study schedule for producing a draft report from July 31, 2013 to October 9, 2013 in order to incorporate the UC San Diego specific compensation process into the micro analysis and to accommodate meetings of the Technical Committee. A schedule of meeting dates was included in the agenda package.
- The Steering Committee requested that staff review other projects with similar circumstances, including Genesee Avenue interchange improvement, the trolley extension to Mission Valley and San Diego State University, and other projects at other UC campuses. Gary Gallegos encouraged staff to be creative in identifying benefits to include emerging trends that the project could aid in achieving.
- Staff reminded the Steering Committee that the study is a two pronged economic analysis approach. The first part examines impacts and benefits at the San Diego regional level. The regional level analysis includes an economic impact analysis and a benefit-cost analysis. The second part is a micro level analysis that focuses on the benefits specific to UC San Diego.
- Regional Level Analysis: preliminary results of the regional analyses were discussed.
 - Economic Impact Analysis:
 - Staff presented preliminary findings of the regional level economic impact analysis, which are produced from the IMPLAN Input-Output model. This model estimates how the economy would likely respond to a stimulus (i.e., construction of the Mid-Coast Transit Project) in terms of jobs, payroll, output, and taxes. It does not measure the social benefits from the project. Social benefits are estimated using a separate model.
 - The Steering Committee requested staff add sales tax from the purchase of the trolley cars to the economic impact results. SANDAG agreed to incorporate this change.

Steering Committee Summary

- Benefit-Cost Analysis:
 - Staff discussed preliminary findings of the regional level benefit-cost analysis that are produced from the Cal B-C model. The model measures broader social benefits and costs of a project. It uses no-build and build alternatives to measure differences and calculate net benefits and costs. Results are produced for travel time savings, vehicle operating cost savings, accident cost savings, and emission cost savings. Staff discussed the preliminary results as well as provided background on the data and parameters used in the model.
 - Staff will prepare a technical memo describing the results and present it to the Technical Committee for review. Staff will address comments and recommendations from the Technical Committee and update the analysis.
- Micro Analysis: a progress report was discussed.
 - Staff summarized what they had learned about the process that UC San Diego uses regarding compensation for real estate. Information was based on discussion at the March 19, 2013 Technical Committee meeting and on information received from representatives from the UC San Diego Real Estate Department. The information described compensation for real estate and injury to the remaining property in accordance with California law. Steering Committee representatives stated their commitment for SANDAG and UC San Diego Real Estate Department to work together to factor in these specific requirements but also be open to considering other benefits as compensation and include those ideas in the report.
 - Allen Kosup added that part of the conversation at the March 19, 2013 Technical Committee meeting was about appraisals and compensation and how appraisals drive compensation. He added that there is a technical legal definition of an appraisal that needs to be included but that the appraisal is one piece that informs the negotiation. He stated that the analysis coming out of this effort should go beyond the appraisal and an entire package needs to be presented to the Regents.
- The Steering Committee suggested that in addition to the benefits measured from the benefit-cost model, broader benefits should be considered. Representatives mentioned the following for consideration:
 - The regional economic analysis shows that the Mid-Coast benefits the whole region. The University's participation on a project that benefits the whole region could be an important point to make to the Regents.
 - The Mid-Coast infrastructure investment can help better serve UC San Diego students by providing alternative transportation to get to and from campus other than driving. The Mid-Coast provides an opportunity to connect students to the community without them having to rely on cars. Students could live off campus and get to campus using the trolley or get to other areas around the region without having to own a car. Mid-Coast helps to better serve the students, faculty, and staff by providing more choices.
 - The UC System seems to be moving toward maximizing the campuses that it already has rather than building new ones. The Mid-Coast helps UC San Diego develop and expand to meet future needs and get the most out of what land they currently have. By providing students an alternative to auto, available land could be developed for classrooms, laboratories, and research and development facilities rather than parking structures. This provides the University an opportunity to expand beyond what it could without the Mid-Coast. This in turn helps UC San Diego in its mission to educate students, which helps develop the workforce of tomorrow and helps propel the economy. This project is valuable for UC San Diego's future and the region's future.

- UC San Diego is using future development of trolley to offset what otherwise they would have to pay in mitigation. The Mid-Coast helps the University address traffic impact in CEQA documents.
- The Steering Committee reconfirmed its commitment to collaboratively finding workable solutions. They concurred with the overall approach and agreed that staff should move forward with the next steps in the study.
- SANDAG offered to send Mark Jacobsen, UC San Diego Economist, the regional models, output, and spreadsheets so that he can review in detail and provide input.

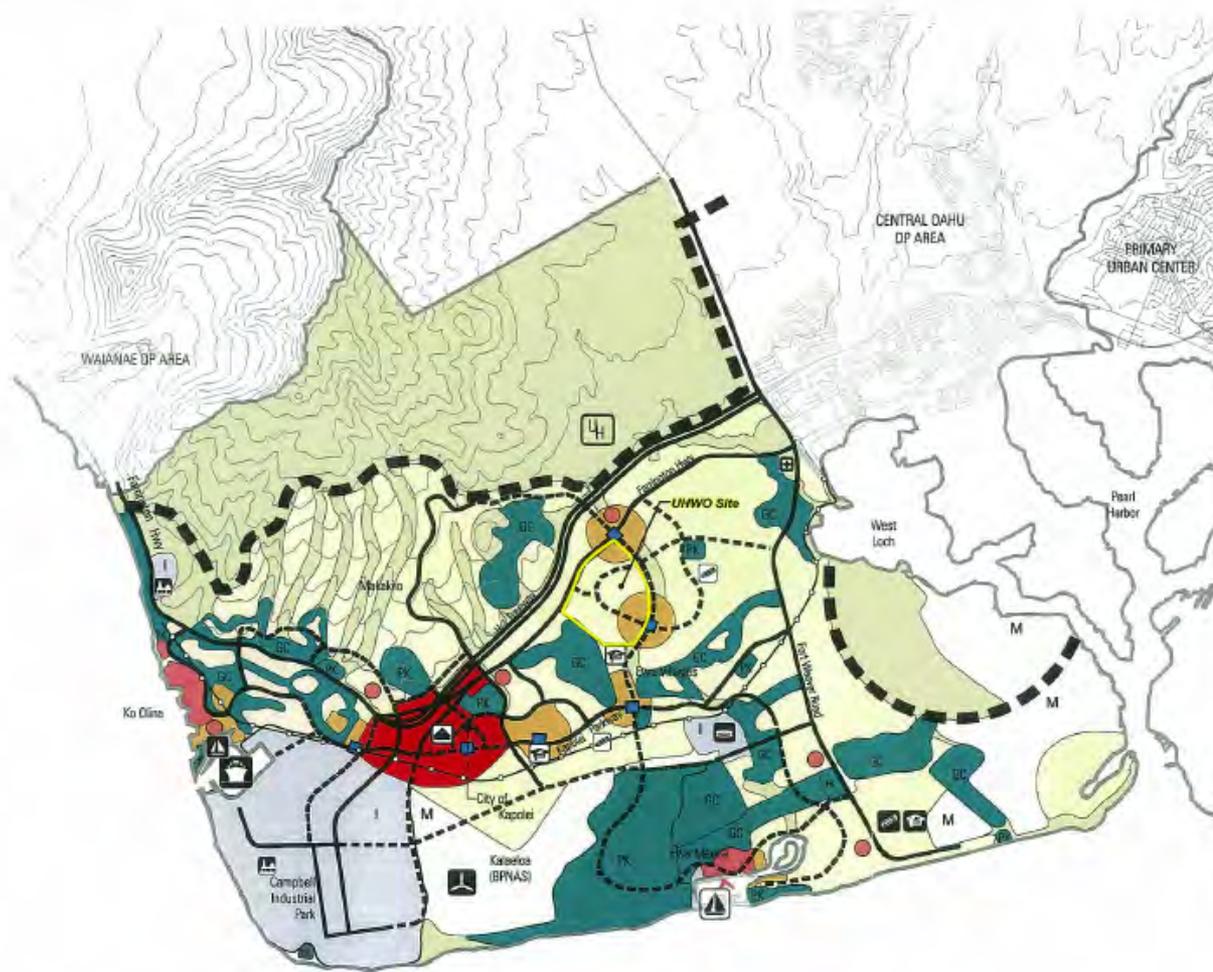
Next Meeting Date and Location:

The next Steering Committee meeting is scheduled for Wednesday, July 31, 2013 from 1 to 3 p.m. at SANDAG. The next Technical Committee meetings are scheduled for Wednesday, April 24, 2013 from 3 to 4:30 p.m. and for Wednesday, June 5, 2013 from 3 to 4:30 p.m. Technical Committee meetings are held at UC San Diego, Faculty Club.

Post Meeting Notes from SANDAG:

- Since the April 2, 2013 Steering Committee meeting, SANDAG incorporated sales tax from the purchase of the trolley cars to the economic impact results. In addition, SANDAG incorporated updated expenditure data into the model, converted expenditures into 2011 real dollars rather than 2010 dollars as previously reported, and revised one of the IMPLAN codes used for direct expenditures to a code that staff deemed to be more closely aligned to activities for coordination and oversight and administration of the Mid-Coast. Staff produced a revised draft of the economic impacts and will share it with the Technical Committee at the April 24, 2013 meeting. Staff will address comments from the Technical Committee and update the analysis.
- Due to scheduling conflicts with Steering Committee representatives the July meeting dates was changed from July 9 to July 31. The Attachment on the following page is the revised meeting schedule.

UHWO Dev Plan



EWA DEVELOPMENT PLAN

Urban Land Use Map

- Low and Medium Density Residential
- High Density Residential
- Community Commercial Center
- City of Kapolei (High Density Residential and Commercial)
- Resort/Recreation Area
- Industrial
- Military
- Public Institution
- Agricultural and Preservation
- Parks and Golf Courses
- Transit Node (High Density Residential and Commercial)
- Urban Growth Boundary

EXISTING FUTURE

- | | |
|--|------------------------------------|
| | Civic Center |
| | Electric Power Plant |
| | Wastewater T.P. |
| | Intermediate School |
| | High School |
| | U.H. West Oahu |
| | Hospital |
| | Small Boat Marina |
| | Commercial Harbor |
| | Airfield |
| | Highways, Arterial & Major Streets |
| | Historic Railway |

UHWO Aerial



FUTURE BUS
TRANSIT
CENTER

FUTURE PARKING
(500 SPACES)

FUTURE PARK
AND RIDE
(500 SPACES)

TEMPORARY
PARKING
(300 SPACES)

ATTACHMENT C

transportation

light rail on university campuses

sharing the ASU experience

impact at ASU



connectivity

infrastructure

growth

sustainability



light rail links ASU and community to new athletics district with access to venues such as Sun Devil Stadium



Inter Campus Trips: Monday - Sunday



MAG/ASU Survey

**additional light rail station near ASU
offers commuters greater access to
the core of Tempe campus**





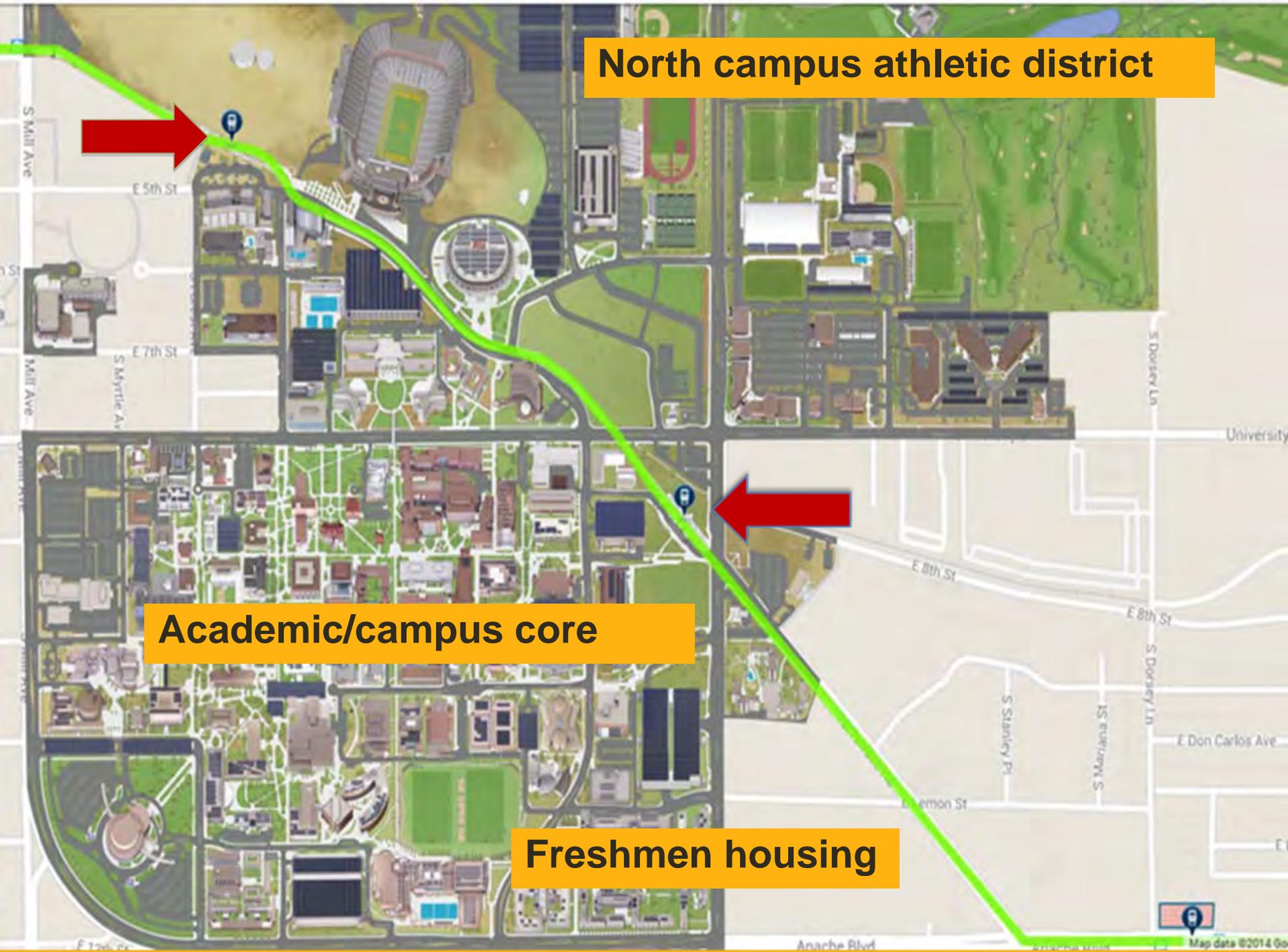
Changes in demand for parking at ASU

North campus athletic district



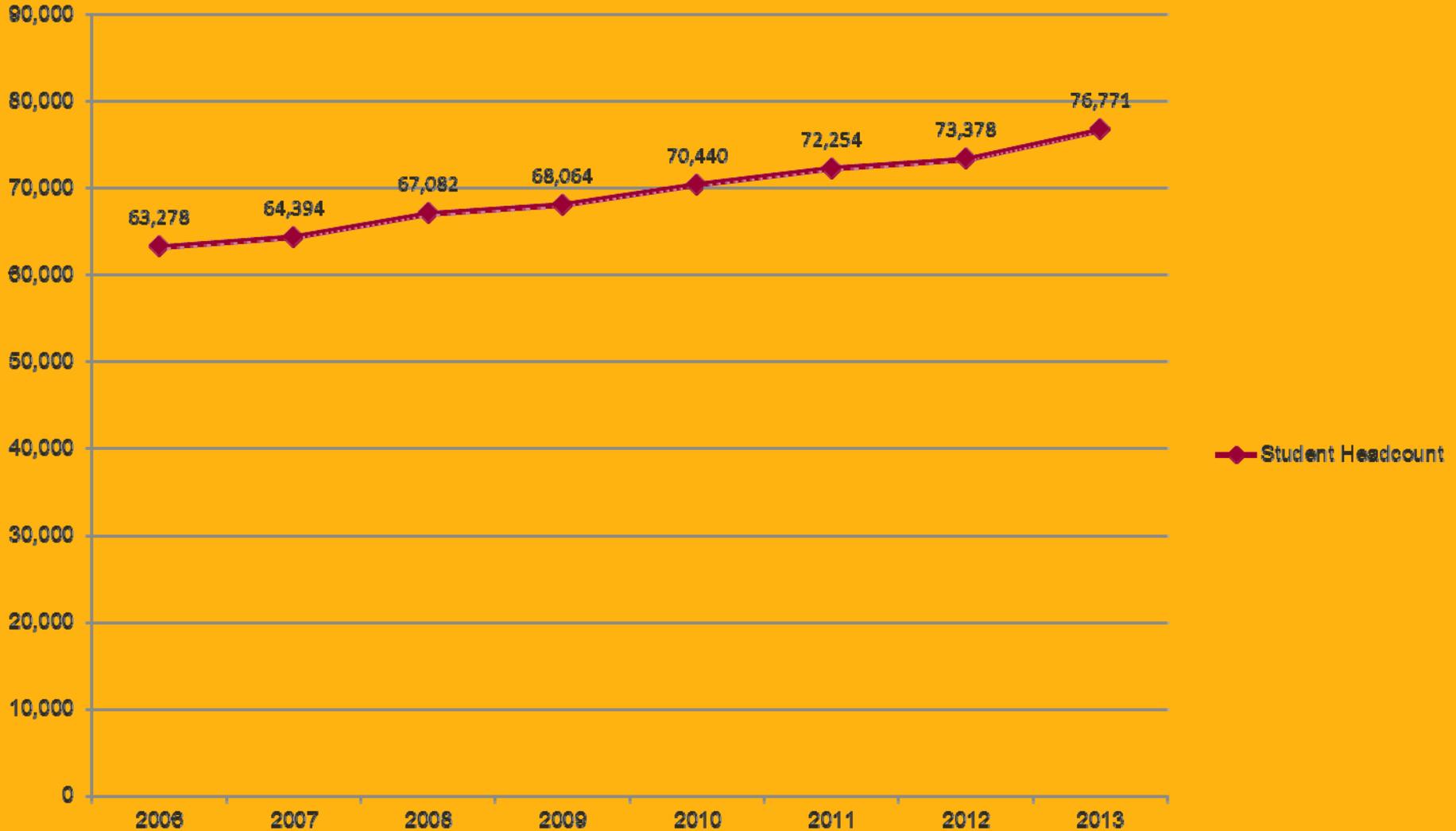
Academic/campus core

Freshmen housing



**asu enrollment:
over 120,000
students by 2025**

ASU enrollment history



Tempe campus fall permit sales



“At ASU, we have established sustainability as a central teaching, learning, and discovery objective that is as important as teaching the concepts of liberty and justice.

We have redesigned the concept of the institution by making sustainability a core value of the university.”

– President Michael M. Crow

willingness to adapt

increased efficiency

collaborative

partnership

key learnings

access

sustainability

long-term solutions

paradigm shift

considerations

future



connectivity

options

sustainability

ATTACHMENT D

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

H O N O L U L U R A I L T R A N S I T P R O J E C T

WWW.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

HART Board Right-of-Way Status Update

October 23, 2014

**Elizabeth Scanlon
Director of Planning & Right-of-Way**

**Morris M. Atta
Deputy Director of Right-of-Way**

H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

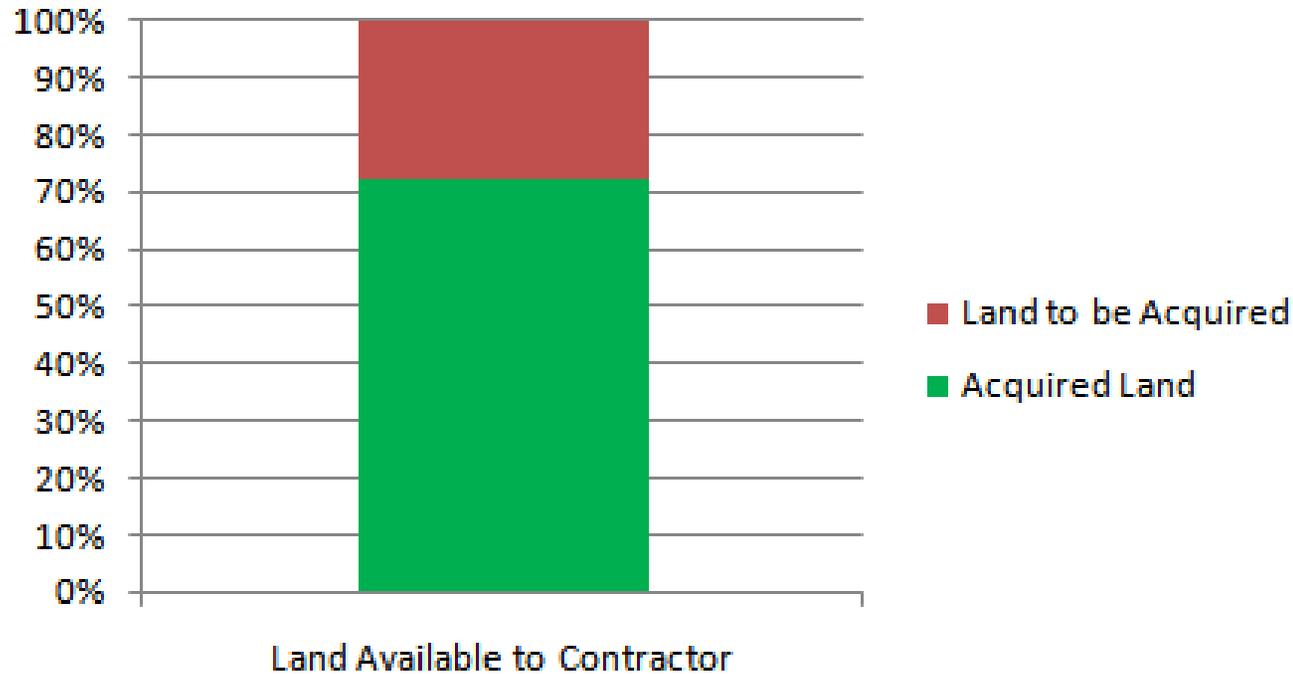
HART
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

Paragon Consultant Update

- Clerical position locally hired as of 10/20/2014.
- Expenditures for Labor and Other Direct Costs incurred within budgeted amount.
- The contract amendment was fully executed on 10/20/2014.

Progress Acquisition by Land Area

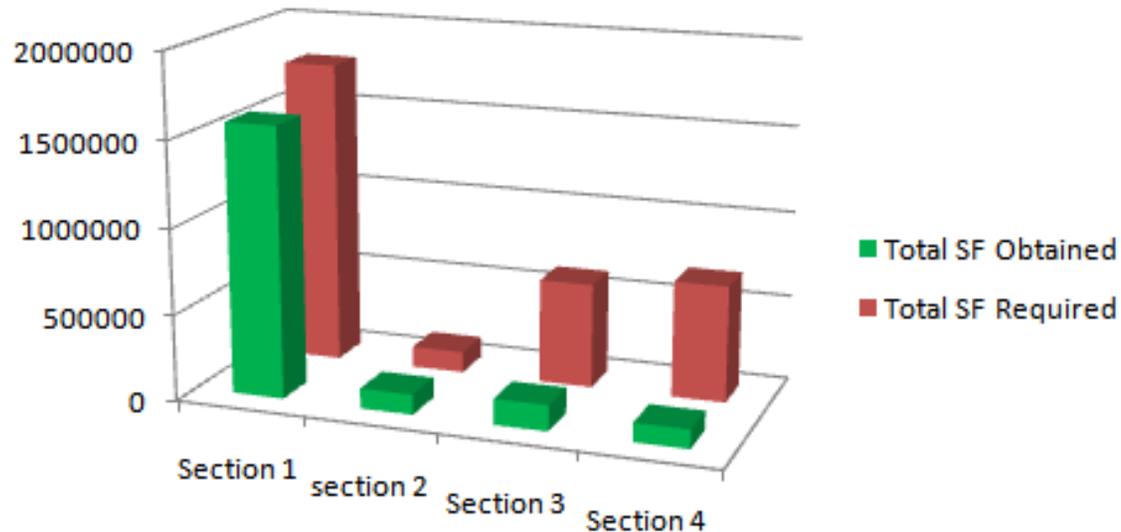
as of 10/21/2014



Permanent ROW (SF)	Total Land Requirement for Project (Entire Alignment)	2,698,088
	Total Available for Contractor	1,957,346
	Total Land Remaining to be Acquired	740,742
	% Complete	73%

Progress Acquisition by Land Area

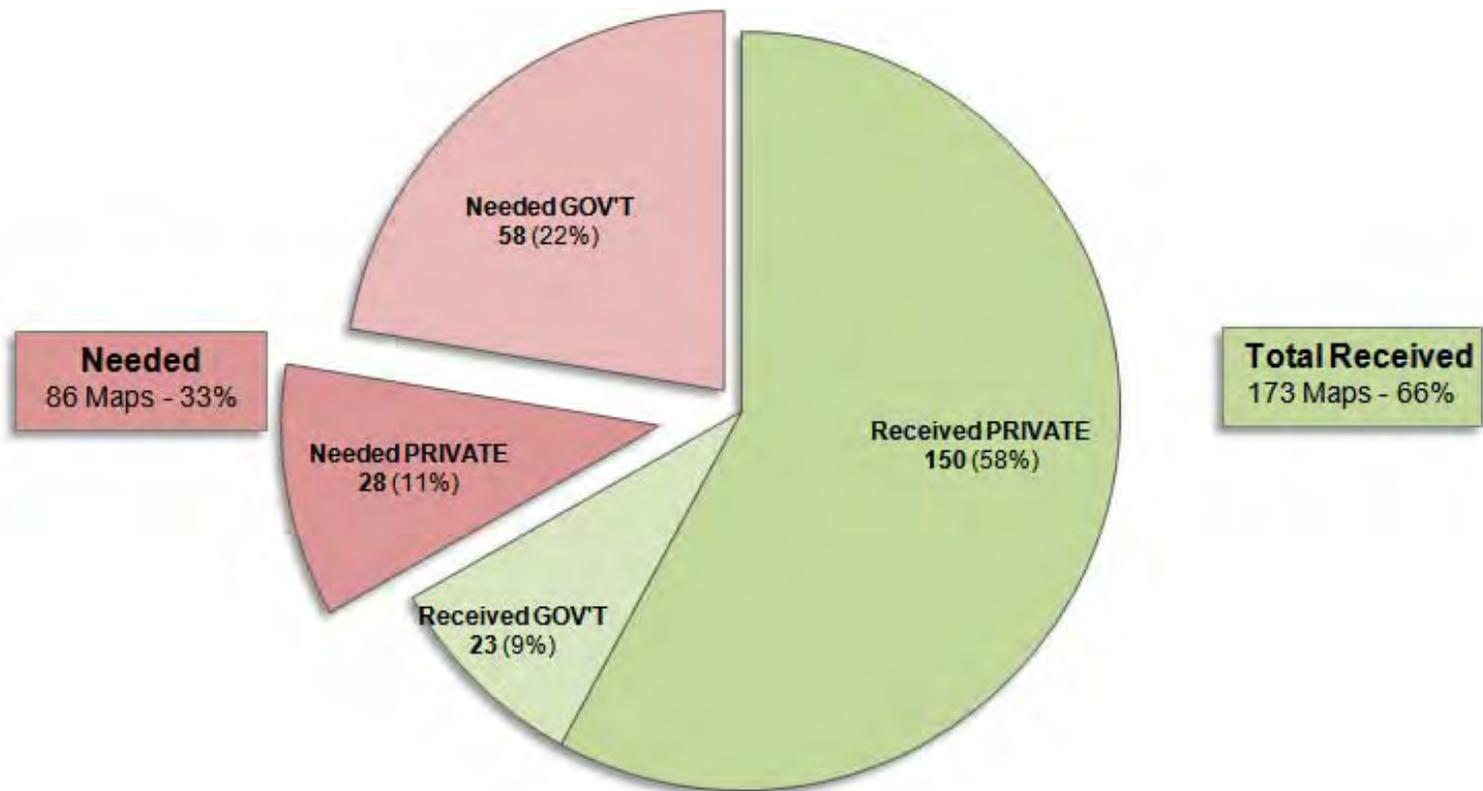
as of 10/21/2014



	Section 1	Section 2	Section 3	Section 4
Total SF Obtained	1,578,404	117,271	150,861	111,024
Total SF Required	1,778,460	122,187	611,093	680,776
% Progress	89%	96%	25%	16%

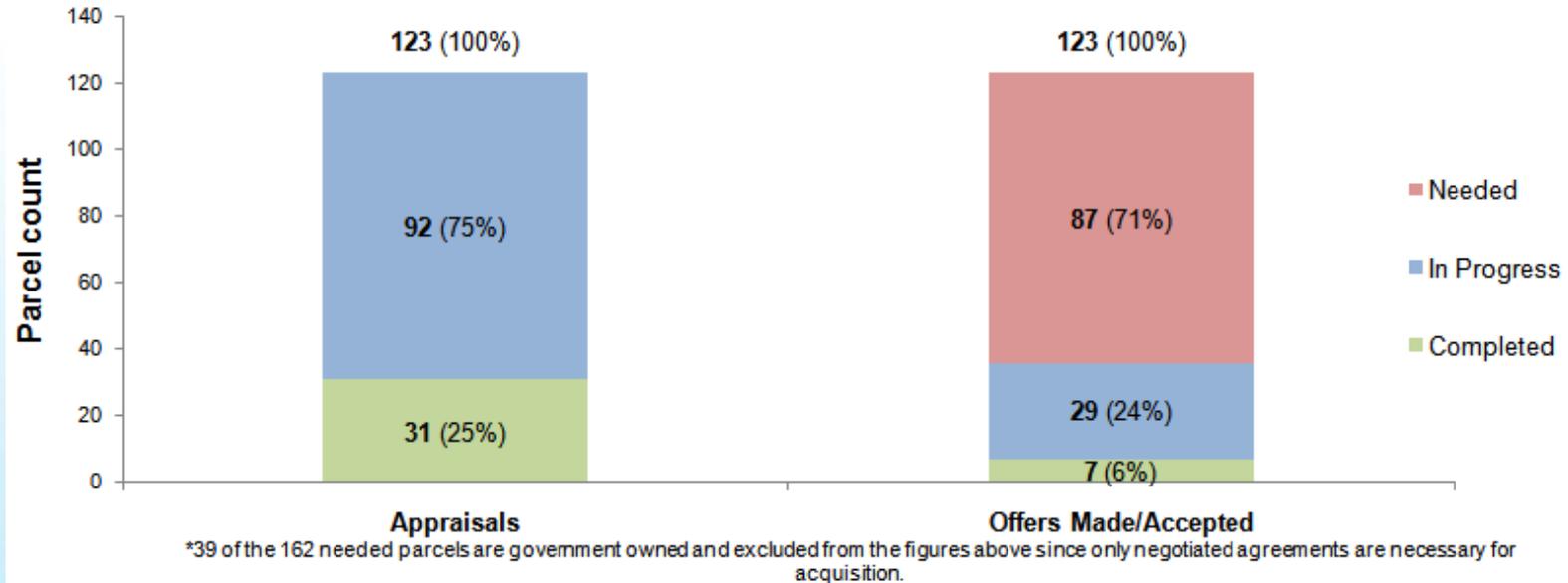
Survey Maps

(Privately Owned + Government Parcels)
as of 10/17/2014

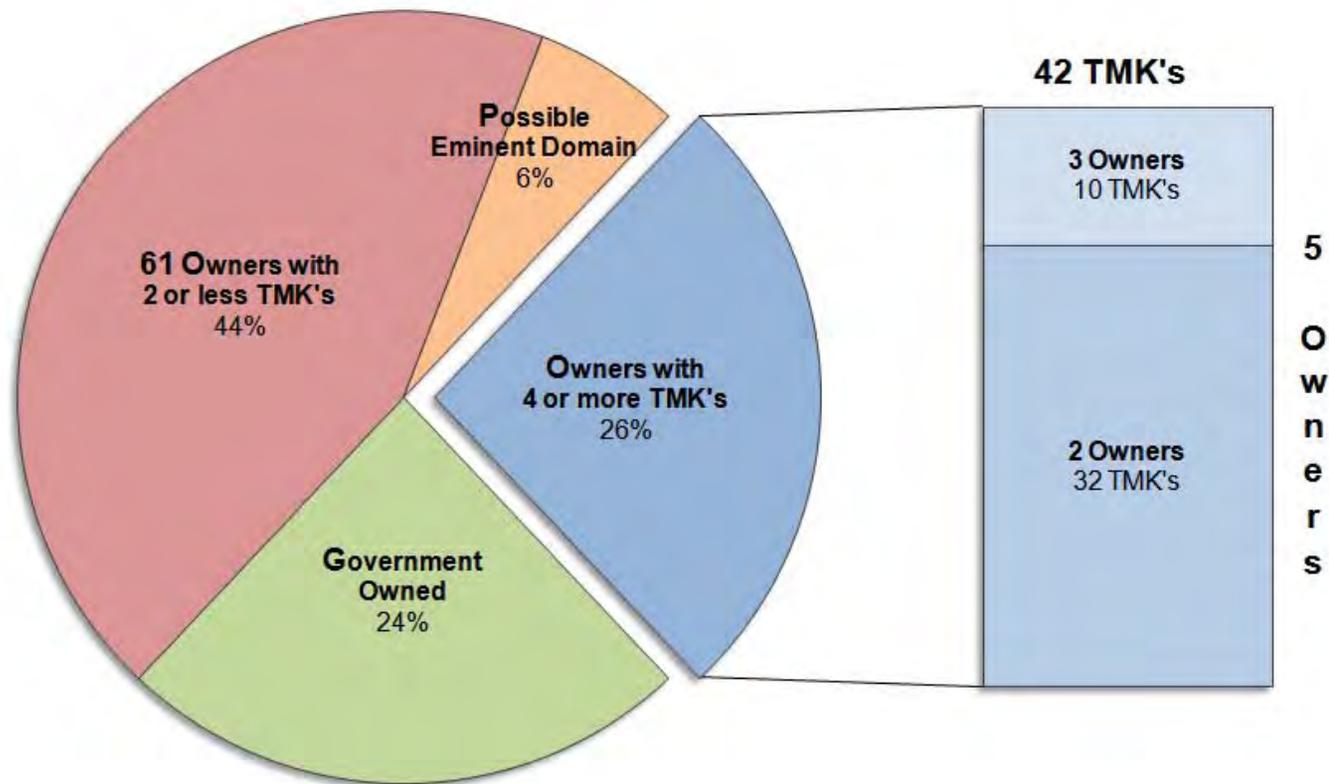


Appraisal and Offer Status

Privately Owned Parcels to be acquired as of 9/22/2014



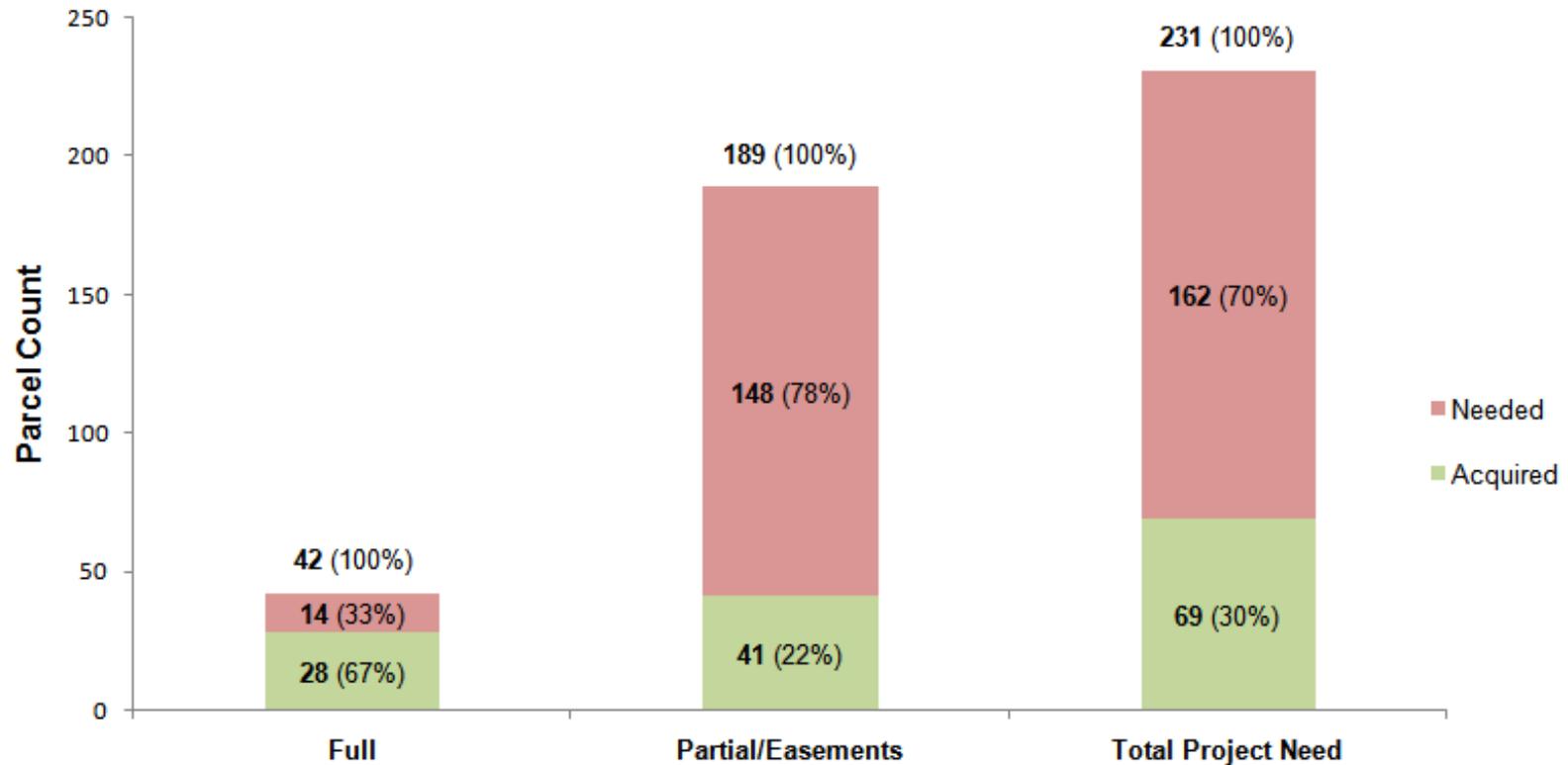
Parcels to be Acquired by Tax Map Key (Privately Owned + Government Parcels) as of 9/22/2014



Acquisition Status by Parcel

Privately Owned + Government Parcels

as of 9/22/2014



Acquisition Summary as of 9/22/2014

Summary:

28 Acquisitions
40 Agreements/Easements/ROE

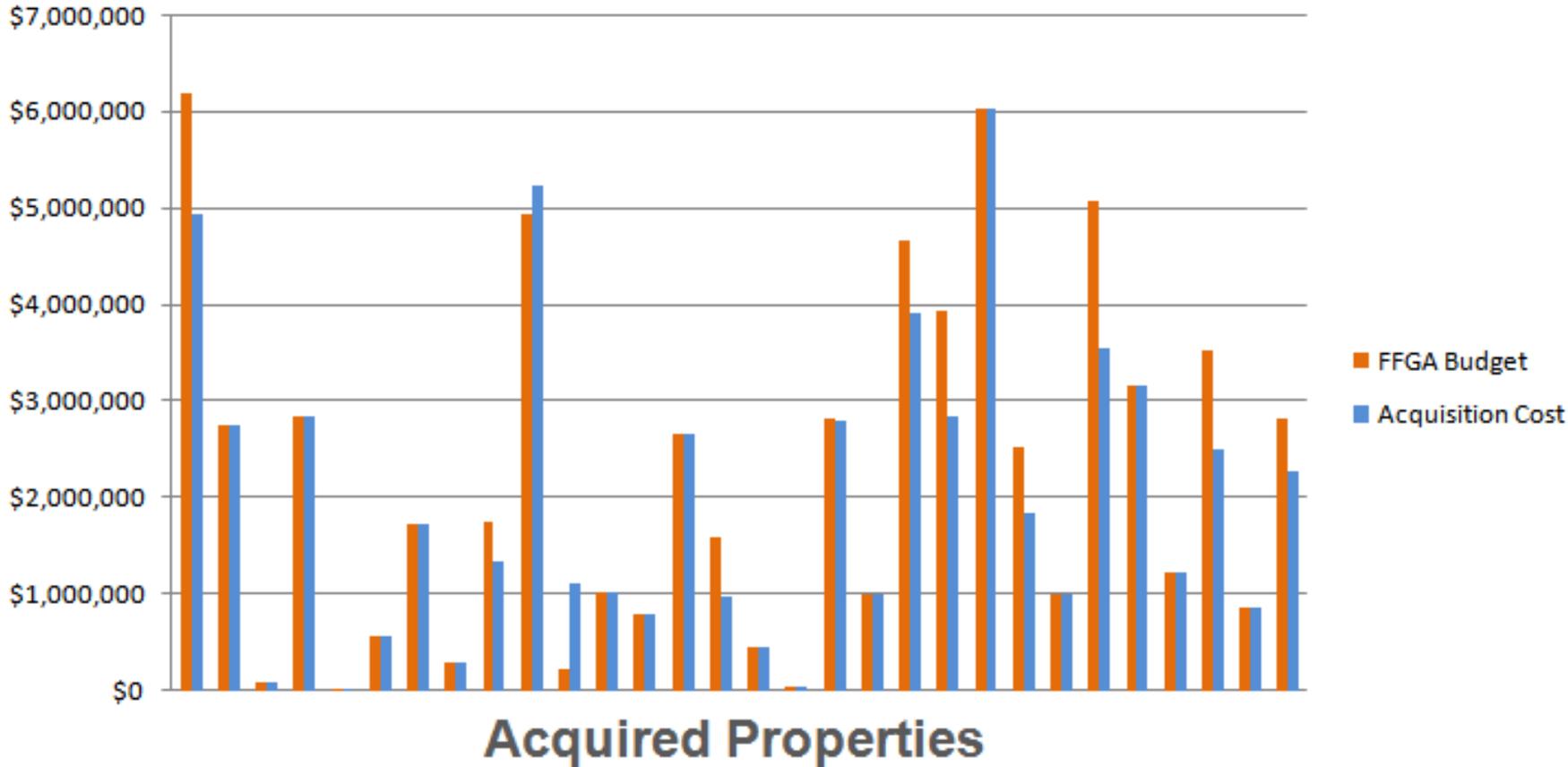
68 total closed transactions
1 site control obtained title transfer pending
69 Total Acquisitions

No	TMK	Take	Address	Total Acquisition (\$)	FFGA Budget	Note	Remaining Balance in Budget
1	1-1-016-005	Full	2676 Waiwai Lp	4,924,144	6,173,973		1,249,829
2	1-1-016-006	Full	2668 Waiwai Lp	3,918,089	4,648,445		730,356
3	1-1-016-014	Full	479 Lagoon Dr	2,843,274	3,930,328		1,087,055
4	1-1-016-015	Full	515 Lagoon Dr	3,551,508	5,067,659		1,516,151
5	1-2-003-016	Full	1819 Dillingham Blvd	1,106,416	1,741,689	***	635,273
6	1-2-003-082	Full	1825 Dillingham Blvd	984,299	1,596,625		612,326
7	1-2-009-001	Full	1901 Dillingham Blvd	2,805,135	2,814,000		8,865
8	1-2-010-068	Full	1900 Dillingham Blvd	1,831,279	2,529,000		697,721
9	1-5-007-023	Full	533 Kaaahi St	2,850,000	2,850,000	*	0
10	1-7-002-026	Full	902 Kekaulike St	5,219,351	4,927,000	**	-292,351
11	2-3-004-048	Full	1156 Waimanu St	1,730,578	1,730,578	*	0
12	2-3-004-069	Full	1168 Waimanu St	2,660,398	2,658,317		-2,081
13	9-4-017-011	Full	94-818 Moloalo St	870,000	870,000	*	0
14	9-4-019-050	Full	94-819 Farrington Hwy	1,004,277	1,005,000		723
15	9-4-048-046	Full	94-119 Farrington Hwy	3,159,142	3,159,142	*	0
16	9-4-048-047	Full	94-136 Leonui St	2,749,142	2,749,142	*	0
17	9-6-003-012	Full	96-171 Kamehameha Hwy	287,030	287,030	*	0
18	9-6-003-013	Full	96-165/169 Kamehameha Hwy	455,588	455,588	*	0
19	9-6-003-014	Full	96-157 Kamehameha Hwy	1,216,787	1,216,787	*	0
20	9-6-003-015	Full	96-159 Kamehameha Hwy	53,304	53,304	*	0
21	9-6-003-016	Full	96-149A Kamehameha Hwy	22,304	22,304	*	0
22	9-6-003-017	Full	96-149 Kamehameha Hwy	559,914	559,914	*	0
23	9-6-003-018	Full	96-137 Kamehameha Hwy	1,017,915	1,017,915	*	0
24	9-6-004-002	Full	96-93 Kamehameha Hwy	790,000	790,000	*	0
25	9-6-004-017	Full	Kamehameha Hwy	90,000	90,000	*	0
26	9-8-009-017	Full	98-077 Kamehameha Hwy	2,509,030	3,512,500		1,003,470
27	9-8-010-002	Full	98-080 Kamehameha Hwy	6,027,021	6,027,021	*	0
28	9-9-003-068	Full	99-140 Kohomua St	993,783	993,783	*	0
				56,229,706	63,477,045		7,247,338

Notes:

- * Baseline assumes zero variance (budget = actual) during FFGA approval process.
- ** Cost exceeded budgeted amount due to conversion from partial to full acquisition.
- *** FFGA budget correction.

Acquisition Cost as of 9/22/2014



Mahalo!



HONOLULU RAIL TRANSIT

H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

ATTACHMENT E



CONSTRUCTION AND TRAFFIC UPDATE

OCTOBER 23, 2014

H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

Construction Update Guideway and Rail Operations Center



H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART
HONOLULU AUTHORITY for RAPID TRANSPORTATION

Rail Operations Center



H O N O L U L U R A I L T R A N S I T P R O J E C T

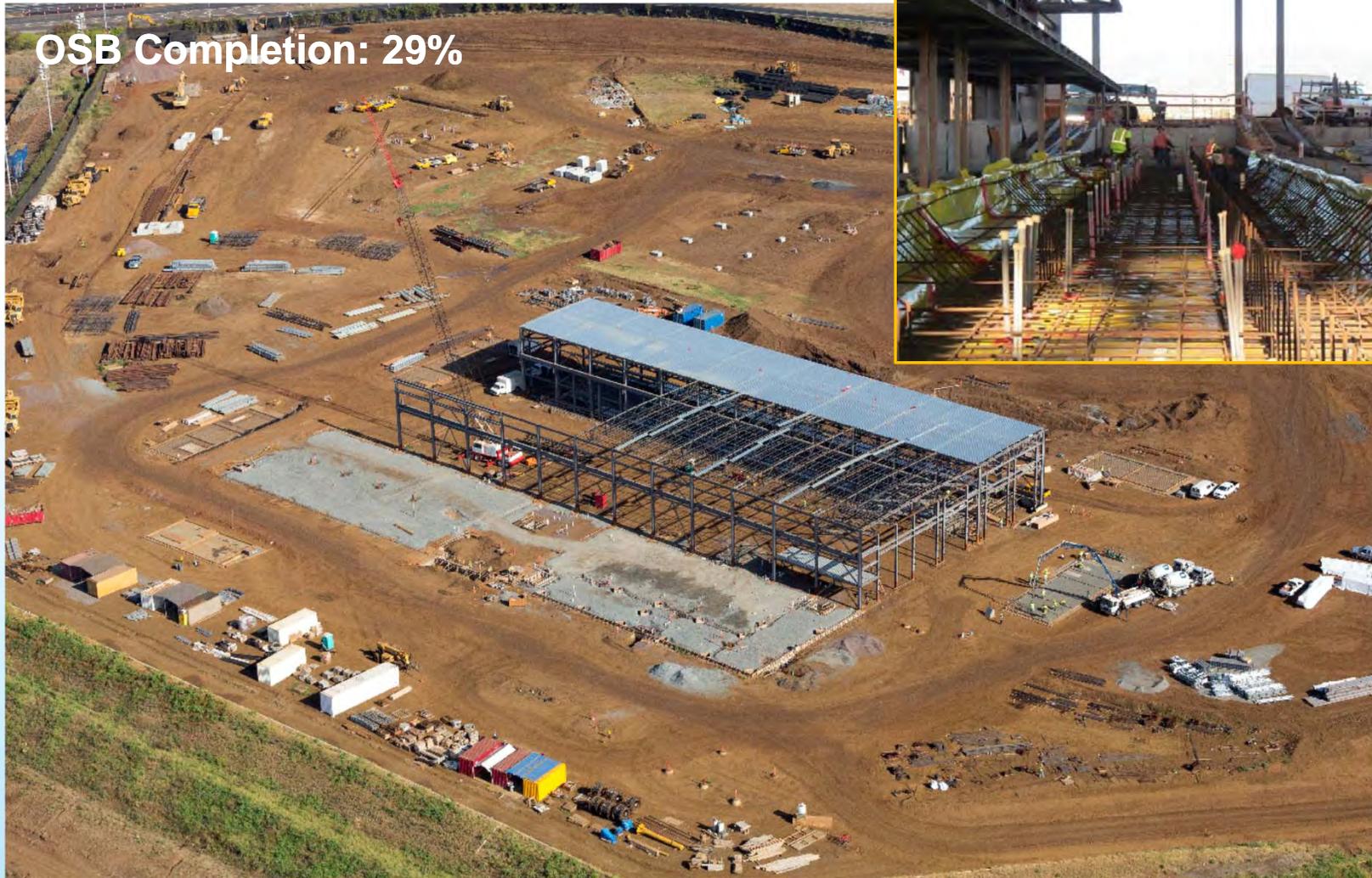
www.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

Rail Operations Center Operations & Servicing Building (OSB)

OSB Completion: 29%



Rail Operations Center Maintenance Of Way (MOW) Building

MOW Building Completion: 18%



Rail Operations Center Wheel Truing Building (WTB)

WTB Completion: 10%



Rail Operations Center Utilities and Yard Construction



Guideway Construction

- 422 columns are in the first 10-mile section (from East Kapolei to Aloha Stadium)

Current count:

- More than 130 columns
- More than 165 foundations
- More than 1,485 segments cast
- More than 37 spans

NOTE: 42 spans will mark the first mile of guideway estimated time of completion November



Guideway Construction



- About 5,200 segments will make up the first 10 miles of the alignment

- Each segment weighs about 50 tons
- A typical segment is around 11 feet long, by 30 feet wide, by 7 feet tall



Guideway Construction



H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

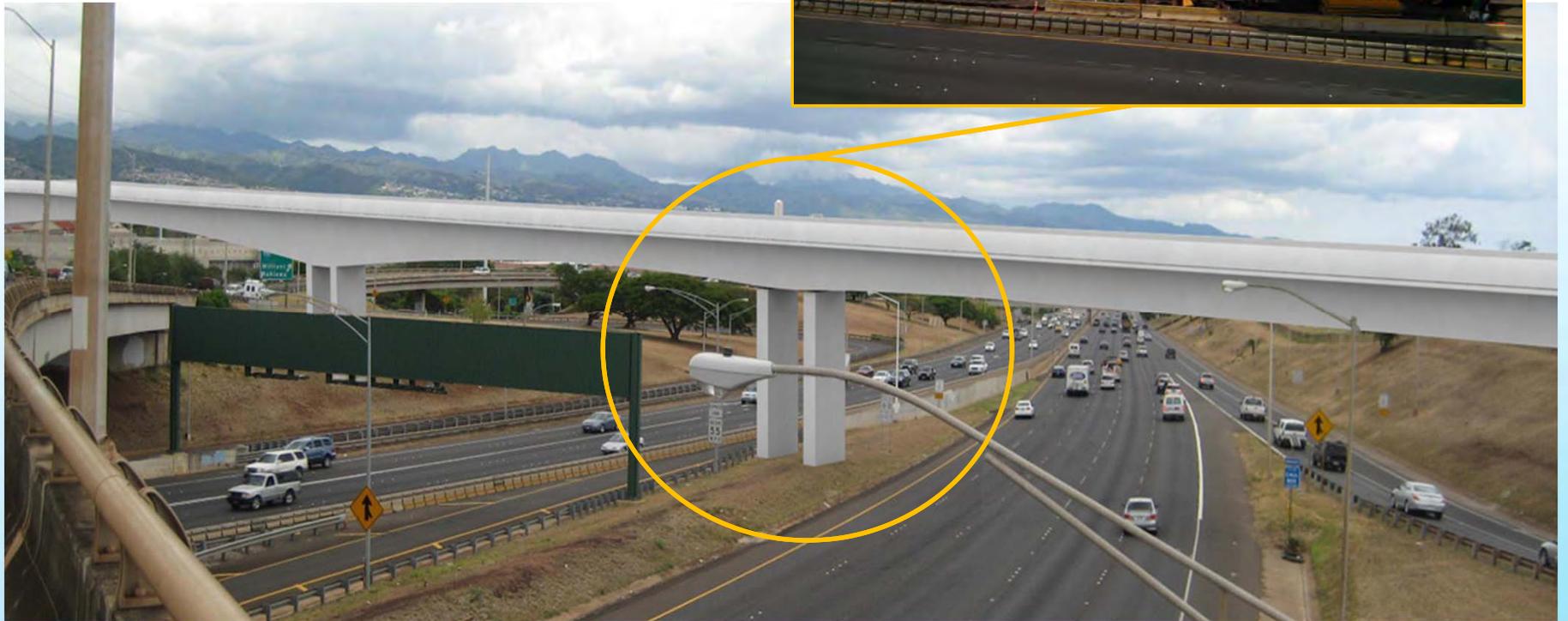
Guideway Construction

Ho`opili Aesthetic Column



UH West Oahu Aesthetic Column

Balanced Cantilever Work



Traffic Update



H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART
HONOLULU AUTHORITY for RAPID TRANSPORTATION

Farrington Highway Detour



Farrington Highway (Waipahu)



Farrington Highway (Waipahu)



H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

Farrington Highway (Waipahu)



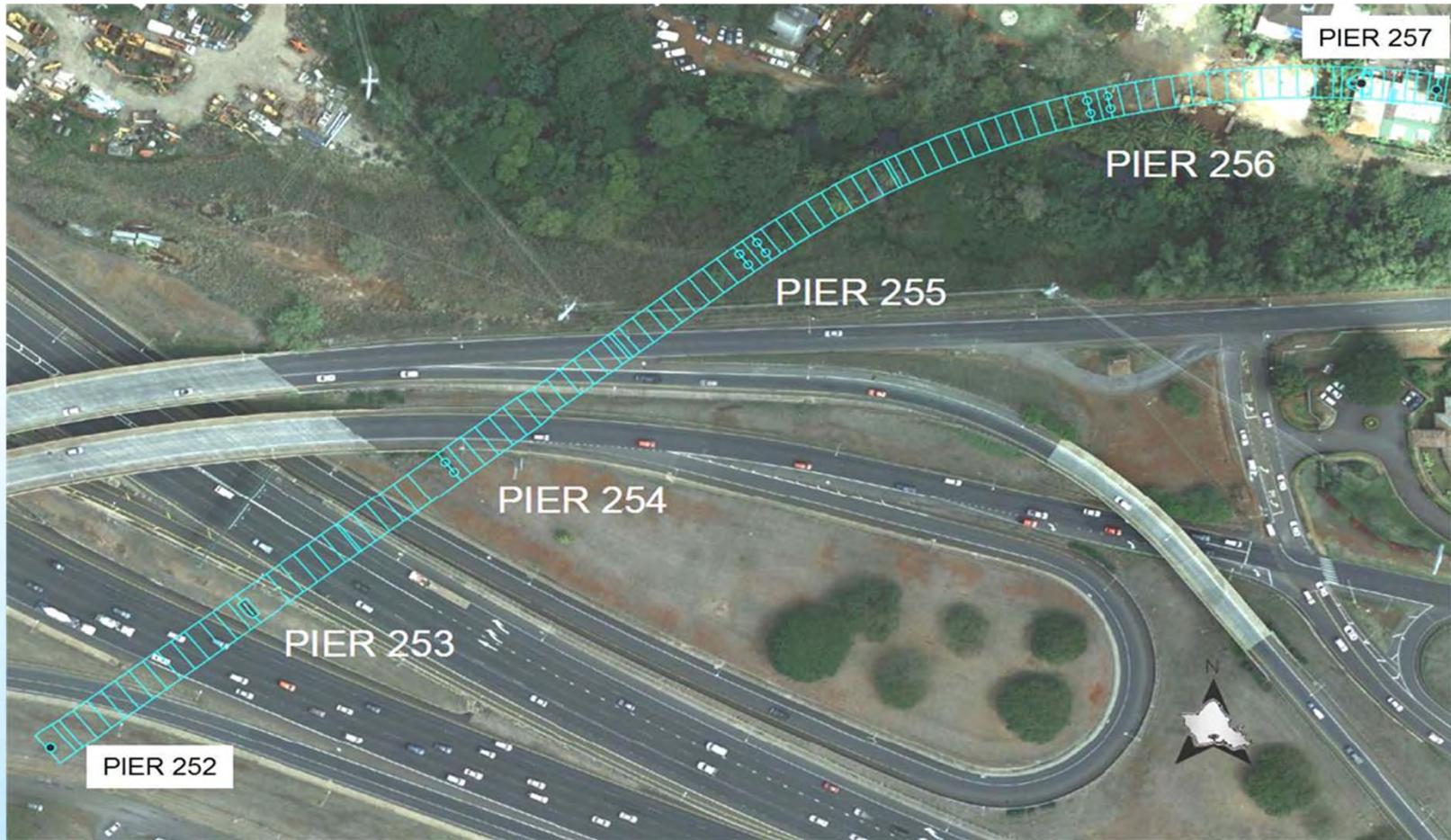
Farrington Highway (Waipahu)



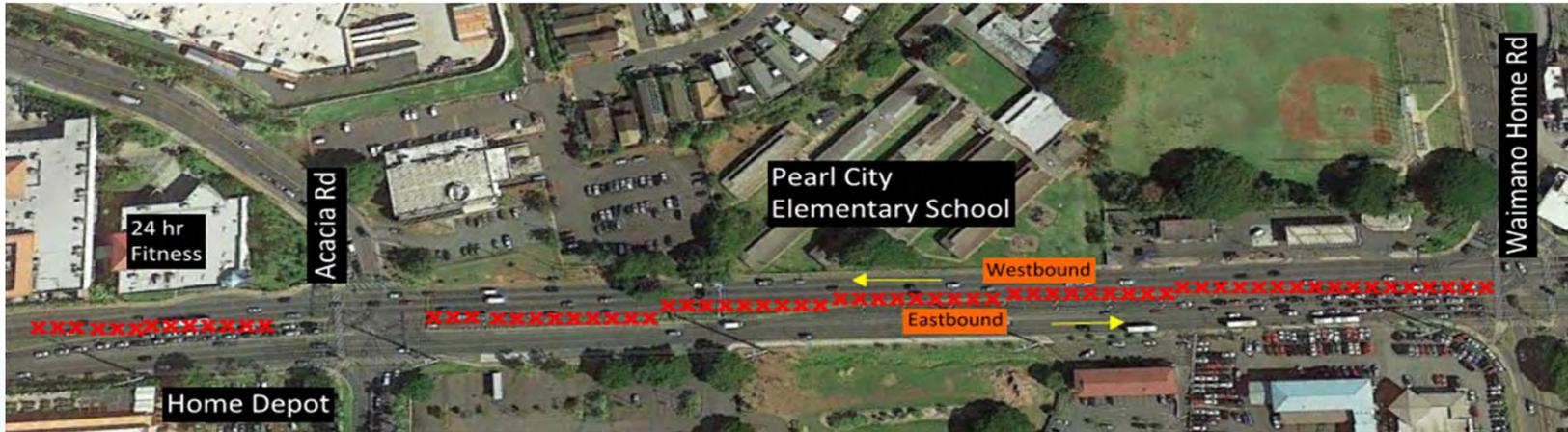
Balanced Cantilever Work



Balanced Cantilever Work



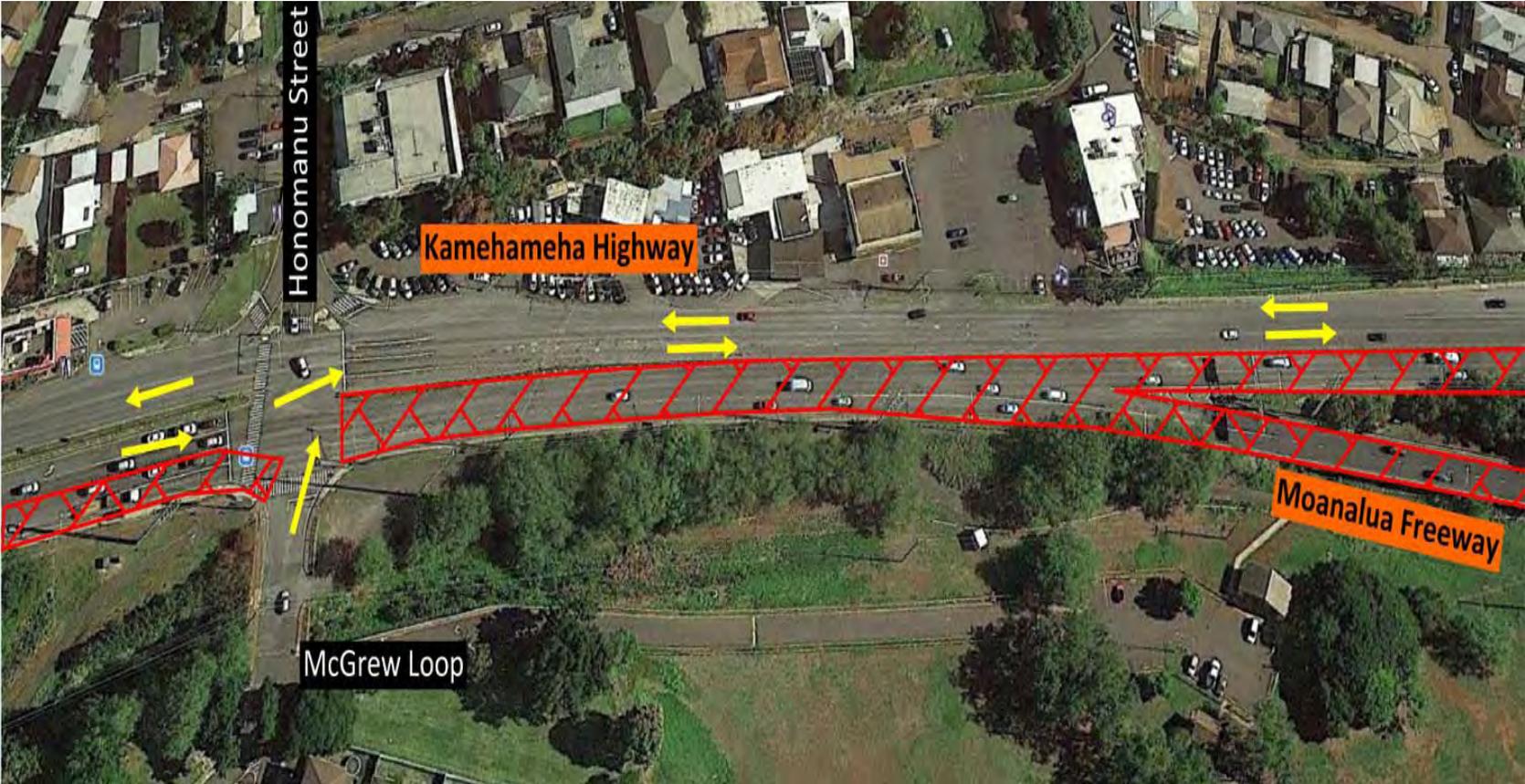
Kamehameha Highway (Pearl City)



Kamehameha Highway (Aiea)



Kamehameha Highway (Aiea)



Mahalo!



HONOLULU RAIL TRANSIT

H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

ATTACHMENT F

Honolulu Authority for Rapid Transportation

RESOLUTION NO. 2014 - 2

ADOPTING A SIX-YEAR CAPITAL PROGRAM FOR FY 2016-2021

WHEREAS, the Honolulu Authority for Rapid Transportation (HART) has been established pursuant to Article XVII of the Revised Charter of the City and County of Honolulu 1973, as amended (Charter); and

WHEREAS, Section 17-104(i) of the Charter directs the Executive Director to prepare and maintain a six-year capital program for the authority; and

WHEREAS, Section 17-103(3)(e) of the Charter directs the Board to review, modify as necessary, and adopt a six-year capital program within six months of the creation of the authority and annually update the six-year capital program, provided that such capital programs shall be submitted by the Executive Director; and

WHEREAS, a six-year capital program has been submitted by the Executive Director to the Board; and

WHEREAS, the Finance Committee and the Board have reviewed said six-year capital program for the Authority;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of HART as follows:

1. That the six-year capital program, shown in Exhibit A attached hereto and made a part hereof by reference, be and hereby is, adopted as the six-year capital program of HART for FY 2016-2021; and
2. That this Resolution shall take effect immediately upon its adoption.

ADOPTED BY THE Board of the Honolulu Authority for Rapid Transportation on

_____.

Exhibit A – SIX-YEAR CIP AND BUDGET FY 2016-2021

Board Chair

ATTEST:

Board Administrator

Requested Capital Improvement Budget

FY 2016 - FY 2021

	Proposed FY 2016	Proposed FY 2017	Proposed FY 2018	Proposed FY 2019	Proposed FY 2020	Proposed FY 2021	Total 6 Year CIP
Construction	\$143,976,100	\$27,380,200	\$8,598,000	\$0	\$0	\$0	\$179,954,300
Dillingham SG, Kaka'ako SG Construction	\$122,502,100	\$0	\$0	\$0	\$0	\$0	\$122,502,100
UH West Oahu Park-and-Ride and Ho'opili Station	\$0	\$13,059,200	\$0	\$0	\$0	\$0	\$13,059,200
Elevators and Escalators	\$16,474,000	\$14,321,000	\$8,598,000	\$0	\$0	\$0	\$39,393,000
Owner-Controlled Insurance Program (OCIP)	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000
Consultants	\$27,953,600	\$17,011,000	\$16,311,000	\$16,310,000	\$0	\$0	\$77,585,600
Gen Engineering Consultant FD-Construction	\$8,233,500	\$8,233,000	\$8,233,000	\$8,233,000	\$0	\$0	\$32,932,500
HDOT Coordination Consultant - West Oahu/Farrington	\$5,613,000	\$0	\$0	\$0	\$0	\$0	\$5,613,000
HDOT Coordination Consultant – Kamehameha Section	\$2,600,000	\$0	\$0	\$0	\$0	\$0	\$2,600,000
HDOT Coordination Consultant - Airport Section	\$1,400,000	\$0	\$0	\$0	\$0	\$0	\$1,400,000
HDOT State Safety Oversight Agency (SOA) Manager	\$421,000	\$0	\$0	\$0	\$0	\$0	\$421,000
Owner-Controlled Insurance Program (OCIP) Consultant	\$208,100	\$0	\$0	\$0	\$0	\$0	\$208,100
Core Systems Support	\$8,078,000	\$8,078,000	\$8,078,000	\$8,077,000	\$0	\$0	\$32,311,000
Safety and Security	\$1,400,000	\$700,000	\$0	\$0	\$0	\$0	\$2,100,000
Programmatic Agreements	\$300,000	\$100,000	\$100,000	\$0	\$0	\$0	\$500,000
Kako'o Consultant	\$100,000	\$100,000	\$100,000	\$0	\$0	\$0	\$300,000
Programmatic Agreement— Historic Preservation Com.	\$200,000	\$0	\$0	\$0	\$0	\$0	\$200,000
Quality Audits	\$20,000	\$20,000	\$20,000	\$0	\$0	\$0	\$60,000
Subtotal	\$172,249,700	\$44,511,200	\$25,029,000	\$16,310,000	\$0	\$0	\$258,099,900
Contingency	\$200,000,000	\$53,000,000	\$36,000,000	\$86,000,000	\$0	\$0	\$375,000,000
Recertifications	\$50,000,000	\$0	\$0	\$0	\$0	\$0	\$50,000,000
Total FY 2016	\$422,249,700	\$97,511,200	\$61,029,000	\$102,310,000	\$0	\$0	\$683,099,900
Re-Appropriations FY 2015	\$1,054,808,500	\$0	\$0	\$0	\$0	\$0	\$1,054,808,500
Grand Total	\$1,477,058,200	\$97,511,200	\$61,029,000	\$102,310,000	\$0	\$0	\$1,737,908,400

ATTACHMENT G

Honolulu Authority for Rapid Transportation Annual Report for Fiscal Year 2014

Ivan Lui-Kwan, Chair
Donald G. Horner, Vice-Chair
Robert Bunda
William Hong
Keslie Hui
Damien Kim
Carrie Okinaga
George Atta, Ex-Officio
Michael Formby, Ex-Officio
Ford N. Fuchigami, Ex-Officio

Daniel Grabauskas, Executive Director and Chief Executive Officer
Brennon Morioka, Deputy Executive Director

POWERS, DUTIES, AND FUNCTIONS

The Honolulu Authority for Rapid Transportation (HART) is authorized to develop, operate, maintain, and expand the high-capacity fixed guideway rapid transit system of the City and County of Honolulu. Among its responsibilities are directing the planning, design, and construction of the fixed guideway system, and operating and maintaining the system; preparing and adopting annual operating and capital budgets; applying for and receiving grants of property, money and services, and other assistance for capital or operating expenses; making administrative policies and rules to effectuate its functions and duties; and to promote, create, and assist transit-oriented development (TOD) projects near fixed guideway system stations that promote transit ridership.

HART is governed by a ten-member board of directors that directs the organization's policy. The administration of the authority is overseen by its executive director and CEO.

MISSION

HART's mission is to plan, design, construct, operate, and maintain Honolulu's high-capacity, fixed guideway rapid transit system.

ACCOMPLISHMENTS

OVERVIEW

During Fiscal Year 2014, HART's third year of existence, the agency achieved several significant milestones, including the resolution of all lawsuits and the resumption of

construction. During the year, the HART Board of Directors, staff, and consultant team made significant progress toward achieving the vision of bringing a quality rail transit system to Oahu.

Most notably, HART overcame all legal challenges, which cleared the path to resuming construction. The August 2012 Hawaii Supreme Court judgment in *Kaleikini v. Yoshioka*, which temporarily suspended all construction activities on the rail project, was satisfied with the completion of the Archaeological Inventory Survey (AIS) in a remarkable 13 months. Construction resumed on September 16, 2013. Likewise, both federal challenges were successfully resolved on February 18, 2014 when both the U.S. Ninth Circuit Court of Appeals and the U.S. District Court for the District of Hawaii issued favorable decisions, bringing all outstanding federal litigation to a conclusion. The rulings lifted the injunction against real estate activities in the City Center section with compliance of the District Court's mandate to complete the City Center Traditional Cultural Properties report, analyses of the Beretania Street Tunnel alternative, and the impacts to Mother Waldron Park

With legal challenges out of the way, HART hit the ground running on construction. Since September, more than 100 columns have been constructed in the west side of the alignment; more than 700 concrete guideway segments have been cast at HART's Kalaeloa Precast Yard; and 10 guideway spans between columns were in place in the Hoopili area.¹

HART, Ansaldo Hawaii Joint Venture (AHJV), the city Department of Transportation Services (DTS), and Oahu Transit Services (OTS) continued their work in exploring synergies and efficiencies in building, maintaining, and operating the H RTP, as well as bus/rail multimodal opportunities.

BUDGET AND FINANCE

Budget

The FY 2015 Operating and Capital Budgets were submitted to the Mayor and the City Council for their consideration and input. The budgets did not include any request for city general fund monies. However, the Operating Budget included funds for reimbursement to the city's general fund for staff support from various city departments and central administrative services expense. The budgets were adopted by the board on June 19, 2014 in the following amounts:

Operating Budget	\$21,481,029
Capital Improvement Budget	<u>\$1,560,404,400</u>
Total FY 2015 Approved Budget	\$1,581,885,429

¹ As of July 15, 2014

Funding

Local funding for the project from the one-half percent General Excise and Use Tax (GET) county surcharge totaled \$1.25 billion from January 2007 through April 2014. GET surcharge revenues from the Full Funding Grant Agreement (FFGA) Financial Plan start date of October 2009 through June 2014 were \$870 million of the \$3,291 million total expected for the entire project.

Federal Section 5309 New Starts revenue appropriated for HART is \$806 million. President Obama incorporated an additional \$250 million for HART in his Fiscal Year 2015 budget in March. If that sum is appropriated by Congress, federal funding for HART will be \$1,056,267,358 against a total of \$1.55 billion in the Full Funding Grant Agreement.

HART staff, HART Vice Chair, city Budget and Fiscal Services, and Mayor Kirk Caldwell worked together to improve the debt financing plan of the project by decreasing the total amount to be borrowed at lower cost, and improving the access and timeliness to debt financing going forward.

PLANNING, UTILITIES, PERMITS, RIGHT-OF-WAY

Planning and Environmental

The Planning and Environmental division again played a critical role in FY 2014, particularly in complying with the decisions in the *Kaleikini* and *Honolulutraffic.com* lawsuits. The division submitted the voluminous AIS report to the State Historic Preservation Division (SHPD) on a highly accelerated schedule. Their close collaboration with SHPD resulted in SHPD's expedited acceptance of the report, which cleared the path for the return to construction.

HART continued to coordinate with and support other entities with regard to TOD, including the Department of Planning and Permitting (DPP), which has primary responsibility for developing TOD neighborhood plans and zoning regulations for station TOD areas. HART also participated in the city Managing Director's TOD group – part of the Mayor's initiative to “build rail better.” In addition, the board convened the TOD Stakeholders Advisory Group to facilitate information exchange related to TOD and offer guidance in advancing TOD.

Utilities and Permits

During FY 2014, the division executed all utilities engineering services agreements for the entire project. Utility construction agreements for the West Oahu/Farrington Highway (WOFH) and Kamehameha Highway Guideway (KHG) segments have been executed with the exception of Hawaiian Telcom, who has been performing construction work as needed while negotiations continue. All construction agreements are Buy America compliant. HART has continued construction agreement negotiations for the remaining segments.

Right of Way

Following the lifting of the federal injunction against real estate acquisition activities in the City Center section of the project in February, the Right-of-Way division was tasked with a critical component in HART's efforts to deliver the project on time and within budget. Challenged with obtaining 152 full and partial acquisitions within an extremely compressed timeframe, the Right-of-Way division began efforts to bolster its resources to complete this critical path task.

ENGINEERING, DESIGN AND CONSTRUCTION

Core Systems

Ansaldo Honolulu Joint Venture (AHJV) is responsible for the design, construction, and delivery of 20 four-car vehicles and a train control system, which it will also operate and maintain over a 10-year period. The design is 49 percent complete, with AHJV interfacing with the other fixed facility contractors on the Maintenance and Storage Facility (MSF), alignment, and station issues. HART and AHJV are working on a revised schedule based on the recent restart of construction. The contract calls for the delivery of the first vehicle beginning in 2016.

Elevators & Escalators Manufacture-Install-Maintain

Schindler Elevator Corporation has completed 3.5 percent of the design. The contractor worked with AHJV and final designers on coordination and interface issues. Substantial completion is scheduled for May 2018.

WOFH Guideway

The westernmost section of the project alignment has seen the most visible construction progress. Following the return to construction, column erection resumed, with 107 columns completed. The Precast Yard, responsible for manufacturing guideway segments, became fully operational, and has cast 702 segments. Segment erection began in the Hoopili area, with 96 segments placed atop columns². The North Access Road underpass was completed in June. Substantial completion of the WOFH section is expected in June 2016.



² As of July 15, 2014

West Oahu Station Group

URS Corporation completed design in FY 2014 of the East Kapolei, UH West Oahu, and Hoopili stations. The West Oahu Station Group, along with the Kamehameha Highway Station Group and the Farrington Highway Group, and are currently out to bid.

Farrington Highway Station Group

HDR completed the design of the West Loch, Waipahu Transit Center, and Leeward Community College stations. The Farrington Highway Station Group, along with the Kamehameha Highway Station Group and West Oahu Station Group are currently out to bid.

Maintenance and Storage Facility

Kiewit/Kobayashi Joint Venture, the design-build contractor for the MSF, completed mass grading, and has begun construction on the Operations and Servicing Building and the Maintenance of Way Building. The MSF will be substantially complete in April 2016.

Kamehameha Highway Guideway

Kiewit Infrastructure West Co. (KIWC) has completed 54 percent of the design for the Kamehameha Highway Guideway. Work on utility relocations, foundation test and method shafts, and road widening have recommenced, with a focus on maintenance of traffic along busy Kamehameha Highway. The KHG section is scheduled to be substantially complete by September 2016.

Kamehameha Station Group

Anil Verma Associates completed the design of the Pearl Highlands, Pearlridge, and Aloha Stadium stations. The Kamehameha Highway Station Group, along with the Farrington Highway and West Oahu Station Groups, are currently out to bid.

Airport and City Center Sections Guideway and Utilities

AECOM Technical Services, Inc. (AECOM), continued its design efforts for the Airport and City Center Sections Guideway and Utilities, and is substantially complete. Coordination with stakeholders such as the State Department of Transportation, utility companies, U.S. Navy, and developers continued.

Airport Station Group

AECOM substantially completed design of the Pearl Harbor, Airport, Lagoon, and Middle Street stations.

Dillingham and Kakaako Station Group

Final design consultant Perkins+Will completed 40 percent of the design. The design is expected to be bid-ready in July 2015.

OPERATIONS AND MAINTENANCE

The Operations and Maintenance Department continued to review all aspects of the project from the operations and maintenance perspective to make recommendations on ways to improve service, operability, maintainability, customer service, and cost effectiveness. This includes coordination, interface, and review of core systems, stations, rail vehicles, MSF, fixed facilities, and design and construction. The department also worked with DTS, OTS, and the HART Board of Directors on developing a fare policy.

SYSTEM SAFETY AND SECURITY

The System Safety and Security Department continued to focus its efforts in FY 2014 on developing a Safety and Security Certification Plan, which is required for certification by the Federal Transit Administration (FTA) prior to revenue operation. Additionally, the Safety and Security Team collaborated with several law enforcement entities, HDOT, and the state Oversight Manager to enhance security through design for the project.

QUALITY ASSURANCE

The HART-established Quality Assurance (QA) system was effectively implemented by the Quality Assurance Department during the past year. The Quality Management Plan, which establishes and documents the guidelines and goals of the QA system, was revised to describe the transition from the city Rapid Transit Division of the DTS to HART, and to incorporate the Federal Transit Administration's comments for the FFGA.

The major focus of QA activities included performing audits and surveillances, mentoring and training appropriate staff to ensure that suitable proficiency is achieved and maintained, and participating in Quality Task Force meetings with stakeholders. The Quality Assurance team also reviewed, approved, and monitored the Quality Assurance Plans required of all contractors, consultants, and suppliers.

PUBLIC INFORMATION & COMMUNITY OUTREACH

Continuing its ongoing commitment to transparency, the Public Information and Outreach Department participated in more than 300 community meetings, workshops, presentations, and events in FY 2014, connecting with businesses and residents island-wide. The department also maintained its strong construction outreach program, partnering with project contractors to educate the public about field work, public safety during construction, and traffic impacts on the surrounding communities. HART's communications team sponsored media tours of the casting yard and the maintenance and storage facility, and on-site construction visits to explain to the media and the public how the guideway will be built. Efforts to inform and engage the public also included two Industry Day events, which brought together large contractors with smaller contractors; unveiling a life-sized model of the train, which had more than 7,000 visitors;

and launching a successful anti-graffiti project in partnership with more than 20 schools and community groups.



CIVIL RIGHTS

In FY 2014, the Civil Rights Department staff focused on emphasizing HART's full commitment to a successful Disadvantaged Business Enterprise (DBE) effort by working directly with contractors and prospective DBE participants and monitoring DBE participation. HART actively ensures that no person shall, on the grounds of race, color, creed, national origin, sex, disability, or age, be excluded from participation in, or denied the benefits of, or be subject to discrimination under any project, program, or activity funded in whole or in part through federal assistance. HART employs a proactive approach to recruiting by attending and sponsoring job fairs, posting job openings on the appropriate websites, and disseminating employment-related information to minority and female community organizations. HART will continue to actively solicit and encourage female and minority individuals to apply for open positions in anticipation of future hiring needs.

GOVERNMENT RELATIONS

During the 2014 State legislative session, the Government Relations Department tracked nearly 50 legislative initiatives of interest to HART relating to the general excise tax surcharge, transit oriented development, economic development, affordable housing requirements near transit stations, Smart Growth public infrastructure policies, procurement requirements relating to public works contracts, infrastructure capacity building construction loans for counties, Native Hawaiian burials, historic preservation projects, and civil service exemption process relating to public employees.

The department also worked closely with the City Council and its committees to provide project development updates relating to construction timelines, traffic advisories, interagency coordination to minimize impacts on traffic flow, contract issuances and change orders, transit station development, supplemental environmental impact statement efforts, as well as coordinated on legislation that impacted the project, including, but not limited to, HART's operating and capital budgets, issuance of general

obligation bonds, revised debt financing plan, appointment of HART Board of Directors, and neighborhood transit-oriented development plans.

ADMINISTRATIVE SERVICES

In FY 2014, the Administrative Services Department worked to fill vacant positions with new employees; reassign existing employees to areas where needed; make adjustments in employee duties and responsibilities to meet the needs of the project; and make adjustments in the organizational structure of HART to meet the evolving requirements of the project. The department also continued to provide support to the project in the areas of information technology and overall office management services, including the assumption of new roles in project network administration and multimedia management. At the end of FY 2014, HART had 131 positions filled out of the 139 positions authorized in the Annual Operating Budget. Out of the 131 positions filled, 107 of them were city employees and another 24 were filled by the Project Management Support Consultant. The staffing level is designed to ensure that HART has the technical capacity and capability to manage the implementation of the H RTP and meet the requirements of the FTA for managing major New Starts projects.

ATTACHMENT H

Permitted Interaction Group Fare System Recommendations for the Board



H O N O L U L U R A I L T R A N S I T P R O J E C T

www.HONOLULUTRANSIT.ORG

HART
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

The Permitted Interaction Group: Four Areas of Inquiry

- Fare policies of other transit agencies
- Bus and rail farebox recovery ratios
- Possible alternative revenue sources
- Fare collection and associated technologies

Participants

- ❑ Staff Steering Committee
 - HART/DTS/OTS/BFS/DIT
- ❑ Consultant: CH2M Hill
- ❑ HART Permitted Interaction Group
 - (“Group” = Bunda, Formby, Horner, Hui, Okinaga)

Process

- ❑ Meetings
 - ❑ 3 Board Briefings
 - ❑ 4 Group Meetings
- ❑ Interagency Steering Committee determined optimal fare media and system options
- ❑ Group makes 2 main fare policy recommendations to the Board

Steering Committee

- ❑ A Steering Committee has been meeting since Fall 2013 to discuss design directions and potential operating models
- ❑ The Steering Committee is comprised of key stakeholders from:
 - ❑ Honolulu Authority for Rapid Transportation (HART)
 - ❑ Department of Transportation Services (DTS)
 - ❑ Department of Information Technology (DIT)
 - ❑ Budget and Fiscal Services (BFS)
 - ❑ Oahu Transit Services (OTS)

Project Goals by Steering Committee

- Design a simple and convenient fare collection system that operates seamlessly between modes
- Adopt proven fare technology based upon industry standards that reduces fraud and maximizes interoperability
- Enables enhanced data collection for improved customer service
- Increase distribution channels and fare purchasing options
- Increase participation in instructional programs and facilitate new transit partnerships e.g. bike share
- Minimize capital and operating costs

Interagency Steering Committee made several key fare system determinations

- ❑ Smart card media
- ❑ Account based
- ❑ Open architecture

These features provide:

- Security of proven IT architecture
- Transition path to new payment systems in the future
- Greatest potential for integration with Handi-Van and other non-transit services
- Potential for differential and location-specific fares
- Accommodates new payment systems in the future

Group Policy Recommendations

- ❑ Design of the fare collection system should plan for operations that maximize use of existing expertise and capacity at the City, OTS and HART
- ❑ HART's fare collection system should include use of fare gates
- ❑ Both recommendations are intended to provide general direction, and are subject to further appropriation and budgeting decisions by the City and HART

Operations Strategy

- ❑ City/HART
 - ❑ Program and Financial Management
 - ❑ Central System Hosting (DIT)
- ❑ OTS
 - ❑ Fare system call center
 - ❑ Special Program/Retail Management
 - ❑ Bus equipment maintenance

Remaining Issues for Next Permitted Interaction Group

- Bus and rail farebox recovery ratios
- Possible alternative revenue sources

Vote Requested Today on Two Recommendations for the Permitted Interaction Group

- Design of the fare collection system should plan for operations that maximize use of existing expertise and capacity at the City, OTS and HART
- HART's fare collection system should include use of fare gates

Both recommendations are intended to provide general direction, and are subject to further appropriation and budgeting decisions by the City and HART

Permitted Interaction Group for HART Fare Collection System Final Report

1.0 Executive Summary

The cooperation and coordination of City & County of Honolulu (City), Oahu Transit Services (OTS), and the Honolulu Authority for Rapid Transportation (HART) are critical in order to meet the goal of having a seamless and cost-effective public transit system. Each of the above three entities have their respective policymakers and staff, and the HART Board of Directors (Board) created the Permitted Interaction Group (the “Group”) to dialogue amongst all three entities in order to provide recommendations to the full Board regarding fare policies that are the most friendly to customers and therefore, most likely to maximize coordination amongst these entities to conserve taxpayer dollars.

The stated purpose of the Group was to investigate the fare policies of other transit agencies, bus and rail farebox recovery ratios, possible alternative revenue sources, and fare collection and associated technologies. Fare policies and technologies of other transit agencies were discussed, and technical staff working with an experienced consultant determined the fare media and technology options best suited for Honolulu’s transit system following rail’s completion, as described in Section 3 herein. Building on the fare media and technology selections made by staff, the Group has provided for the full Board’s consideration specific policy recommendations summarized below, and described more fully in Sections 4 and 5 herein:

- (1) In designing the fare collection system, operation of the system should maximize use of existing expertise and capacity at the City, OTS and HART;
- (2) Subject to future budget appropriation and approvals by the HART Board, HART’s fare collection system should include use of fare gates.

The Group deferred recommendations on the bus and rail farebox recovery ratios and possible alternative revenue sources, until after the HART staff updates HART’s financial plans and the Board with anticipated operating budgets in years of operation. The Group respectfully recommends that another permitted interaction group be formed in the near future to address these remaining issues.

2.0 Background and Process

In August 2013, the City procured the services of CH2M Hill to assist in the design of an electronic fare collection system to support the future operation of the rail system, as well as TheBus and TheHandi-Van. In September of the same year, a project Steering Committee was formed with staff from the City (Department of Transportation Services (DTS), Department of Information Technology (DIT), and Department of Budget and Fiscal Services (BFS)), HART, OTS, and CH2M Hill in order to assess options for the design, procurement, and operation of the new fare collection system. Coordination amongst these agencies is critical in order to meet the goal of having a seamless public transit system once rail is in operation, where riders will be able to transfer between bus and rail without having to stop and physically purchase a separate fare.

Section 17-103.2(e) of the Revised Charter of the City and County of Honolulu (RCH) empowers HART to establish all fares, fees, and charges for the fixed guideway rail system, and HART’s Board is tasked by RCH Section 17-106 to fix and adjust reasonable rates and charges for the rail system. Therefore, to

Fare System Permitted Interaction Group Report

allow the Board to guide and inform the work of the Steering Committee, on December 19, 2013, at a duly noticed meeting, the Board established a permitted interaction group (Group) pursuant to Section 92-2.5(b) of the Hawaii Revised Statutes, consisting of the Human Resources (HR) Committee Chair (Carrie Okinaga), the HR Committee Vice Chair (Don Horner), the Finance Committee Chair (Keslie Hui), the Audit and Legal Matters Committee Chair (Bobby Bunda), and ex-officio Board member and DTS Director (Mike Formby).

The Steering Committee made presentations to the Board on December 19, 2013, January 16, 2014 and February 13, 2014, and met with the Group on April 3, 2014, May 15, 2014, July 24, 2014 and October 9, 2014 to review potential electronic fare collection system strategies. The Steering Committee has been meeting with the Group to help develop the public transit system's fare system design, operation and maintenance. The following goals have been used by the Group to help guide decision making:

- Design a simple and convenient system that operates seamlessly between modes;
- Adopt a proven fare technology based upon industry standards that reduces fraud and maximizes interoperability;
- Enable enhanced data collection for improved operations and customer service;
- Increase distribution channels and fare purchasing options;
- Increase participation in instructional programs and facilitate new transit partnerships, e.g., bike share; and
- Minimize capital and operating costs.

Through this process, the Steering Committee made technical decisions (Section 3) regarding fare media and system options strategies, with the input of CH2M Hill regarding, among other things, the experiences of other transit systems. And the Group has proposed recommendations (Sections 4 and 5) for the Board's consideration based upon the Steering Committee findings and briefings. The Group's recommendations are subject to approval of necessary City and/or HART budget appropriations and additional City, HART and OTS approvals if necessary.

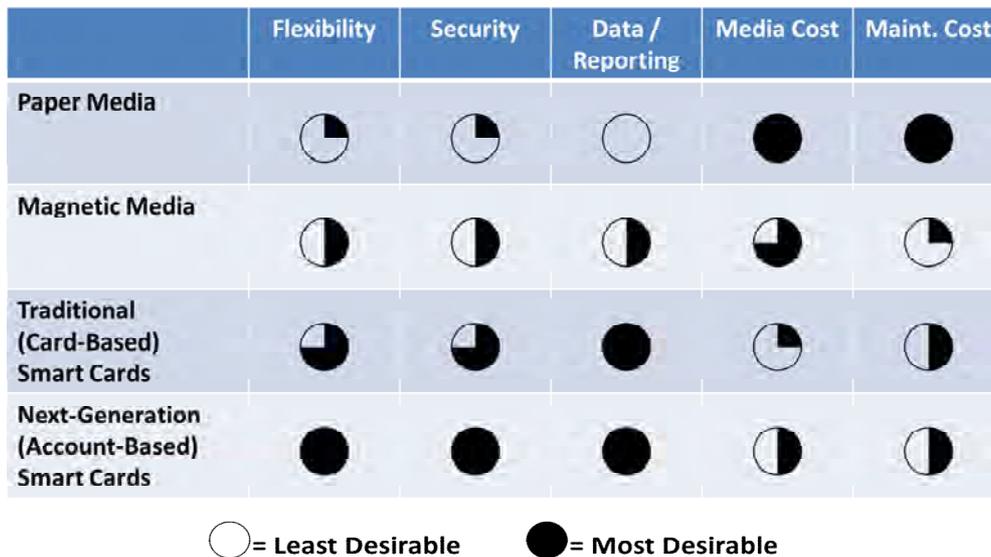
It is understood that this Report does not complete the work of the Group, and that additional fare policies will need to be determined in concert with the City Administration and the City Council, as well as OTS. The intent of this Report is not to determine at this time cost allocation for the fare collection system as between the City and HART, or fare recovery ratios for rail; instead, its intent is to seek HART Board approval of broad parameters for a joint fare collection system to allow staff of DTS/OTS and HART to pursue acquisition of a fare collection system in time for the start of rail operations, as well as to fully integrate the bus fare collection system with the rail collection system. And while this may seem a HART deadline-driven effort, HART will only have 21 collection points at its 21 stations, while DTS/OTS will have a collection point on every bus in its fleet, and so the effort is also driven by a longstanding desire by DTS/OTS to upgrade its fare collection system to a more efficient, "smart" technology which is less dependent on cash and therefore less costly to administer.

3.0 Steering Committee Determinations

3.1 Determinations Regarding Fare Media and System Options

First, the Steering Committee reviewed several fare media and systems in order to determine which one would meet the goals as outlined above. Figure 1 below provides an overview of the fare media considered and the strengths and weaknesses of each.

Figure 1: Fare Media Options



3.2 Determinations Regarding Fare System Technology Options

The Steering Committee considered fare system technology options based upon:

- peer proven;
- flexibility of customer use and purchase options;
- flexibility for operation with both existing fare policy and changes;
- operational and maintenance costs;
- implementation timeframes;
- operational flexibility and cost;
- enhanced data collection capabilities;
- potential for non-transit use; and
- ability to migrate to future payment methods (such as open payment and Near Field Communications (NFC) enabled smart phones).

The Steering Committee reviewed the following fare system options:

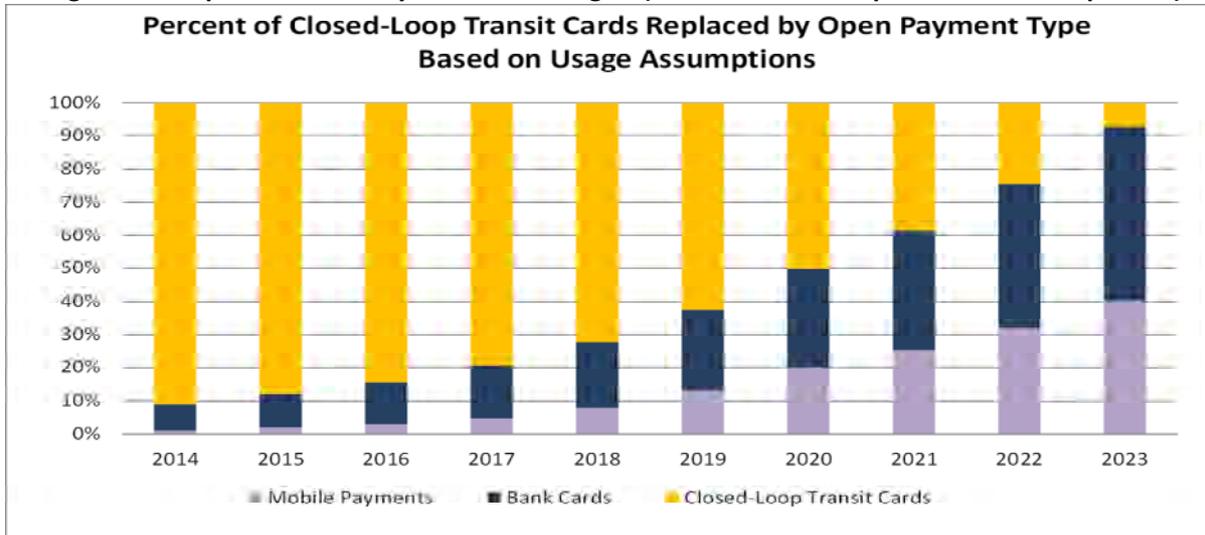
- **Card-based** – Information is stored on the card, which interacts with complex fare payment devices responsible for reading and writing to the card and includes software. Processing is completed offline. Several North American agencies are using this type of system usually deployed in combination with a closed-loop system.
- **Closed-loop** – Uses proprietary format and protocols with limited fare media options usually deployed where real time or close to real time processing is not possible.
- **Account-based** – Information is stored in a back office account; off-the-shelf fare payment devices with centralized fare calculation and online processing are used. Several systems currently in the implementation phase are using this approach as it accommodates a path to open payment and allows for more complex payment calculations including non-transit payments.

Fare System Permitted Interaction Group Report

- **Open Payments** – Standardized card formats with credit and debit and mobile payment options.
- **Open Architecture** – Agency-controlled interfaces with flexible procurement options and the potential for enhanced interoperability.

Figure 2 below outlines the conflicts in choosing the fare system that meets the goals outlined above and minimizes implementation schedule and cost risks. As the chart demonstrates, predictions for the adoption of Open Payment and NFC enabled chip cards and phones when joint TheBUS and HART plans to start full seamless revenue service indicate that these technologies will represent less than 50% of HART's ridership market in 2019. While some predictions do indicate that 5 years after opening, these technologies could represent greater than 80% of the market, DTS/OTS and HART need to ensure the majority of customers can pay for their fares on opening day. As a result, closed-loop smart cards represent the least risk for procurement at this time and the account-based back end systems will accommodate a transition to Open Payment and NFC phone payment in the future, if desired.

Figure 2: Adoption of New Payment Technologies (Bank cards and chip enabled mobile phones)



Source: BOG Fed Reserve System, March 13; Neilson, February 2012; Berg Insight, March 2012; Fed. Reserve Bank of Boston, 2011 & EMV Co Jan. 2012

The Steering Committee determined that account based, smart card fare media represented the best option for Honolulu and provided additional functionality including:

- potential for differential fares;
- potential for location specific fares;
- potential to reduce transfer fraud and still provide a seamless transfer;
- greatest potential for integration with TheHandi-Van and other non-transit services; and
- greatest potential to migrate to new technologies such as open payment and mobile payment in the future as their adoption becomes widespread enough for ubiquitous use.

Based upon the review of options and peer adoption, the Steering Committee also determined that a closed loop system deploying open architecture as much as possible would provide the security of proven technology while still allowing for a transition path to future new payment systems. The Group supports the determinations.

4.0 Group Recommendations

4.1.a. Fare Collection Operations Design

Assuming, then, that TheBus and the rail fare collection systems will be integrated, the Group determined as a preliminary matter that HART's fare policies should be based on maximizing use of existing expertise and capacity that may exist at the City, OTS or HART. Instead of building "Noah's Ark" where there is "two of everything," the Group recommends strongly that existing expertise and capacity should be utilized to maximize efficiency in operations.

In applying this principle, the Group made more detailed recommendations. First, peer review of fare collection systems by the Group members indicated that there are several aspects of system operation that must be considered in the initial fare system design and included in the technical specifications for vendors. These include:

- Transaction processing, data transmission and equipment monitoring (central system management);
- Hosting for the central system software;
- Customer service account creation and management; and
- Equipment monitoring and maintenance.

Initially, the expertise for the day to day operation of transaction processing, clearing, and data storage tends not to be housed within transit agencies that have not had smart cards before. Most of HART's and DTS/OTS' peers that have implemented smart card systems have selected to have both the central system and financial management system designed, hosted and operated for them by a third party. During Steering Committee and Group meeting discussions, the City DIT staff noted that they will have the capability to host the central management and financial management systems using "hot to hot" (immediate back up rather than delayed back up with traditional disaster recovery) site switching so that the data is the secure and available should a back up be needed. As a result, it was determined that the design of the central management and financial management system should be procured and initially operated by a vendor and hosted by the City, assuming appropriate Service Level Agreements are put in place by HART and agreed to by DTS/OTS, and subject to budget appropriation. The City is currently exploring design options for these services to be linked via application programming interfaces (APIs) to existing City systems as well.

Next, during similar discussions about the customer service system and customer service database operation and management, OTS staff noted that their staff has the local geographic, cultural and language knowledge and capacity to supply these services on behalf of HART and DTS/OTS. Given the expertise and capacity that OTS has in this area and the potential for these services to be offered more cost-efficiently by OTS, Group members agreed that DTS/OTS should be responsible for these functions.

OTS also noted that it currently undertakes preventative and both Level 1 (swap out of equipment components for new ones) and 2 (electrical and mechanical work to fix broken components) maintenance on all bus components including electronics. OTS has found that there is a need to have local expertise in all areas of equipment maintenance as response times from mainland suppliers can be too slow to support the "up time availability" required in transit operations. With OTS existing maintenance capabilities supplemented by training and test bed equipment (duplicate real system equipment that is housed for testing and maintenance purposes) from the fare system vendor, OTS

believes it has the physical and staff capacity to provide fare system maintenance for the rail equipment. As a result, the Group agrees that DTS/OTS should be responsible for these services provided the appropriate Service Level Agreements are put in place by HART and agreed to by DTS/OTS, and subject to budget appropriation.

The Group is, therefore, recommending that the system design include vendor design and provision of the central and financial management systems with hosting to be provided by the City. Further, the Group is recommending that system design reflect DTS/OTS responsibility for fare system customer service and equipment maintenance.

5.0 Faregates

Since the initial design of the fare system for the Light Rail Transit (LRT) program, several HART and DTS/OTS peers have implemented faregates at their rail stations and incorporated newer smart card payment technology at the same time. Faregates for HART are considered a feasible option for the following reasons:

- Reduction in revenue lost due to fare evasion (increased revenue capture);
- Reduction in potential system vandalism within the station and in accessing the guideway via stations;
- Reduction in vagrancy within the stations by patrons who are not riding the system; and
- Enhanced data collection capabilities in support of more cost effective service planning and provision.

5.1 Reduction in Revenue Lost

Peer reviews indicate that revenue lost to fare evasion is reduced with the installation of fare gates, as noted in Table 1 below:

Table 1: Peer Faregate Study Findings

System\Agency	Findings
Brisbane, AUS	The transit agency reported an additional \$2 million in annual revenue after gating its LRT system in 2008.
London Underground, UK	An analysis in 1989 of the effect on fare evasion after the installation of faregates at 63 stations on London Underground found a reduction in fare evasion of 67%.
LA Metro, CA	An analysis by LA Metro in 2011 after faregates were turned on in a grouping of 10 select stations saw an average increase in revenue of 18-20% per station and an increase of ticket vending machine (TVM) use in the station of 68%.
Atlanta, GA	Between 2005 and 2010 MARTA installed new fare gates that were also designed to stand higher to reduce evasion due to jumping over the gates. As a result of the change, MARTA experienced a clear reduction in fare evasion according to their CEO, who reported in 2012 that the evasion rate for Fiscal Year 2005 was 4.1% and 1.8% for Fiscal Year 2012.

A review of the most recent National Transit Database data (2012) also shows a trend towards higher farebox recovery ratios for gated versus Proof of Payment (POP) systems. Table 2 below outlines this trend. The average for gated systems is over 50% whereas the average for POP systems is under 30%.

Fare System Permitted Interaction Group Report

Table 2: Farebox Recovery Ratios for Gated Versus POP Systems

Legend: POP Systems in yellow. Gated systems in green.

State	Name	UZA	Population	Mode	Fare Revenues per Total Operating Expense (Recovery Ratio)
AZ	Valley Metro Rail, Inc.(VMR)	Phoenix-Mesa, AZ	2,907,049	LR	21.5
CA	San Francisco Bay Area Rapid Transit District(BART)	San Francisco-Oakland, CA	3,228,605	HR	65.6
CA	Los Angeles County Metropolitan Transportation Authority(LACMTA)	Los Angeles-Long Beach-Santa Ana, CA	11,789,487	LR	20.7
CA	North County Transit District(NCTD)	San Diego, CA	2,674,436	LR	15.1
CA	Sacramento Regional Transit District(Sacramento RT)	Sacramento, CA	1,393,498	LR	31.9
CA	San Diego Metropolitan Transit System(MTS)	San Diego, CA	2,674,436	LR	47.6
CA	San Francisco Municipal Railway(MUNI)	San Francisco-Oakland, CA	3,228,605	LR	18.7
CA	Santa Clara Valley Transportation Authority(VTA)	San Jose, CA	1,538,312	LR	14.8
CO	Denver Regional Transportation District(RTD)	Denver-Aurora, CO	1,984,889	LR	44.5
FL	Hillsborough Area Regional Transit Authority(HART)	Tampa-St. Petersburg, FL	2,062,339	LR	27.0
GA	Metropolitan Atlanta Rapid Transit Authority(MARTA)	Atlanta, GA	3,499,840	HR	30.1
IL	Chicago Transit Authority(CTA)	Chicago, IL-IN	8,307,904	HR	49.9
MA	Massachusetts Bay Transportation Authority(MBTA)	Boston, MA-NH-RI	4,032,484	HR	53.8
MA	Massachusetts Bay Transportation Authority(MBTA)	Boston, MA-NH-RI	4,032,484	LR	53.3
MD	Maryland Transit Administration(MTA)	Baltimore, MD	2,076,354	HR	21.3
MD	Maryland Transit Administration(MTA)	Baltimore, MD	2,076,354	LR	21.5
MN	Metro Transit	Minneapolis-St. Paul, MN	2,388,593	LR	39.5
MO	Bi-State Development Agency(METRO)	St. Louis, MO-IL	2,077,662	LR	30.6
NC	Charlotte Area Transit System(CATS)	Charlotte, NC-SC	758,927	LR	19.0
NJ	New Jersey Transit Corporation(NJ TRANSIT)	New York-Newark, NY-NJ-CT	17,799,861	HR	23.5
NJ	New Jersey Transit Corporation(NJ TRANSIT)	New York-Newark, NY-NJ-CT	17,799,861	LR	16.8
NJ	Port Authority Transit Corporation(PATCO)	Philadelphia, PA-NJ-DE-MD	5,149,079	HR	49.8
NY	MTA New York City Transit(NYCT)	New York-Newark, NY-NJ-CT	17,799,861	HR	67.8
OH	The Greater Cleveland Regional Transit Authority(GCRTA)	Cleveland, OH	1,786,647	HR	20.5
OH	The Greater Cleveland Regional Transit Authority(GCRTA)	Cleveland, OH	1,786,647	LR	18.6
OR	Tri-County Metropolitan Transportation District of Oregon(TriMet)	Portland, OR-WA	1,583,138	LR	35.0
PA	Port Authority of Allegheny County(Port Authority)	Pittsburgh, PA	1,753,136	LR	15.2
PA	Southeastern Pennsylvania Transportation Authority(SEPTA)	Philadelphia, PA-NJ-DE-MD	5,149,079	LR	44.1
TX	Dallas Area Rapid Transit(DART)	Dallas-Fort Worth-Arlington, TX	4,145,659	LR	12.9
TX	Metropolitan Transit Authority of Harris County, Texas(Metro)	Houston, TX	3,822,509	LR	44.4
UT	Utah Transit Authority(UTA)	Salt Lake City, UT	887,650	LR	33.3
WA	Central Puget Sound Regional Transit Authority(ST)	Seattle, WA	2,712,205	LR	13.6

5.2 Potential Payback Period for HART

A POP system, as was originally proposed for HART, controls fare evasion based upon staff checks of a percentage of total riders’ tickets entering the system. The cost for staff inspection is generally based upon the amount of coverage desired which is associated with a concomitantly required number of staff. For HART in 2012, the FFGA estimated that the required number of staff was 13 Fare Inspectors. Ticket vending machine (TVM) purchase and maintenance was also assumed in the FFGA as both a capital cost for the system and an ongoing operating cost.

In a faregate system, there are some incremental costs over the POP system that would include the capital cost of the faregates and the annual cost to maintain these gates. The TVM capital cost and maintenance would be the same as both systems would use the TVMs. Reductions can be assumed in the annual fare inspection staff as only a minimal coverage would be required with faregates and these staff would also be performing other station duties as well.

Evidence in transit studies and system reviews similar to those noted in Table 1 indicate that fare evasion rates are generally higher with POP systems versus gated systems. Rationale for installing faregates is generally based upon the reduction in annual revenue lost as a result of fare evasion and reduction in annual staff inspection costs. For the purposes of evaluating the payback period for faregates installed in the HART system, Table 3 outlines the estimated incremental 10 year revenue, revenue savings and costs associated with a POP versus a faregate system for HART. The numbers are in 2014 dollars.

Table 3: Potential Payback Period and Revenue Savings

Incremental Revenue and Cost Items	Over 10 Years in 2014\$	Assumptions
Total Cost for Inspection in POP Environment	\$20,915,877	From 2012 FFGM; Assumes 13 FTE at 21 stations for 16 hours a day for 365 days a year at a cost of \$86,035 per Fare Police
Total Revenue Collected	\$448,017,048	Based on Revenue as projected in FFGM inflated to 2014 dollars at 2%
Total Estimated Leakage @ 5%	\$ 22,764,992	Sum of annual leakage in 2014 dollars with inflation at 2%
Total Cost for Faregate Maintenance	\$7,065,517	Based on consultant estimate of \$530,000 per year inflated annually at 2% in 2014 dollars
Total Cost for Station Inspection	\$5,365,363	Based on assumption of 7 staff at a cost of \$70,000 per Fare Inspector at 2% inflation over 10 years
Total Capital Cost (inclusive of software and installation but not debt servicing)	\$4,935,000	Based on consultant estimates
Total Cost of Ownership over 10 years	\$17,365,880	
Total Estimated Revenue	\$ 448,017,048	As above
Total Estimated Leakage @ 2%	\$ 8,960,341	Sum of annual leakage in 2014 dollars with inflation at 2%

Fare System Permitted Interaction Group Report

Differential In Leakage	\$13,804,651	
Payback Period	1.20	Total operating in POP divided by total operating and capital with faregates

5.3 Reduction in System Vandalism and Vagrancy

While there is an inherent logic to reductions in crimes due to barriers to entry to transit systems without a paid ticket, there is a paucity of data on this topic. Many of HART's peers who have made the decision to gate their systems do, however, note that justification for doing so is to reduce both the perception and the reality of crimes within the system. These include most recently Vancouver, BC and LA Metro. In addition, Cubic Transportation Systems (CTS), one of the larger fare collection vendors, notes that for the systems where they have installed gates, which include Brisbane, Sydney, London, LA Metro, PATCO, and several properties in China, these properties report on average a 34% reduction in crimes after the installation of gates.

5.4 Enhanced Data

Understanding where and when transit patrons want to go helps to provide service where and when it's needed in the most cost efficient manner. Historical trend data can assist with helping to predict these trends and deploy the transit service efficiently. Traditionally, historical trip data by type of mode, time of day and type of ticket has been obtained by either deploying staff to count or by estimating through predictive models (which themselves have tended to be based partially on historical observations for validation purposes). Data captured through a smart card fare system through tapping on and off at a faregate and a bus card reader can capture usage accurately without the need for staff. In addition, the mining and analytics of this data can be completed in close to real time. As a result, transit planners have access to data that supports timely decision making around service provision and changes for a minimal expense.

Access to this type of data not only assists with the provision of cost-effective transit service but also assists in the pricing of discounted services more accurately. For example, if a day pass is priced as the cost of five rides in order to eliminate transfers and a transit agency is able to verify that on average customers tap their smart card this many times during a 24 hour period then the transit agency has a fairly accurate estimate that service is matching revenue collection. However, if a transit agency notes that the pass is being tapped over 7 times in a 24 hour period, then the price is not reflecting the service provision and either the pass is priced too cheaply and/or customers are required to make too many transfers to complete their trips.

As a result of the potential cost efficiencies, and safety and security benefits provided by faregates, subject to future budget appropriation and approvals by the HART Board, the Group recommends HART's fare collection operations should include use of fare gates.